

Предлагаем продукцию TRACO POWER
и другие ЭЛЕКТРОННЫЕ КОМПОНЕНТЫ
(радиодетали) СО СКЛАДА И ПОД ЗАКАЗ
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TRACO POWER®

Selection Guide 2012

DC-DC CONVERTERS

AC-DC POWER SUPPLIES



www.tracopower.com

Company Profile

TRACO ELECTRONIC AG is a Swiss company with headquarter based in Zurich, Switzerland. As a leading power supply specialist with more than 30 years of experience we are dedicated to the design and manufacturing of high quality DC/DC and AC/DC power conversion products. We are marketing our products worldwide under the registered trademark **TRACOPOWER**.

Our mission is to provide customers with an optimal power supply solution in terms of performance, quality and cost for their specific application.

Product Range

Our product range is focused on five market segments for which we can offer one of the most comprehensive programs of standard products:

- ▶ Low Power DC/DC Converter Modules, 1–240 W
- ▶ Encapsulated AC/DC Power Modules, 4–60 W
- ▶ AC/DC Power Supplies (open frame / encased), 10–1000 W
- ▶ Industrial Power Supplies for DIN–Rail Mounting, 15–1000 W
- ▶ High Power AC/DC and DC/DC Converter up to 22 kW

Detailed technical data of all products can be downloaded from our website: www.tracopower.com

Quality Management

All our products are 100 % ATE tested prior to shipment to guarantee full compliance to published specifications. TRACO's global manufacturing facilities are certified to ISO 9001/9002 to assure that quality management systems used in design, production and testing meet highest standards.

TRACO's commitment to quality is supported by a full **3 year product warranty**.

Technical Support

Our experienced team of application engineers is ready to answer any question concerning a TRACOPOWER product, from product specifications to applicable safety standards. If you have a technical problem or question please e-mail your request to techsupport@traco.ch.

Availability

The majority of products in this selection guide are available ex-stock and can be shipped from our central warehouse in Zurich within 48 hours. For price and delivery information please contact our headquarters in Switzerland or our franchised distributors. More information on our sales and distribution network you can find on our website.

Product Index

DC/DC Converters	SMD-Package 1 to 15 W			Page
	TES-1 Series	1 W	unregulated	6
	TES-1V Series	1 W	unregulated, I/O-Isolation 3000 V	7
	TES-2H Series	2 W	unregulated	8
	TES-2M Series	2 W	I/O-Isolation 4000 VAC, Medical Safety	9
	TDR-2SM Series	2 W	regulated, 2:1 Input, high Power Density	10
	TDR-2WISM Series	2 W	regulated, 4:1 Input, high Power Density	11
	TES-2N Series	2 W	regulated, 2:1 Input Range	12
	TDR-3SM Series	3 W	regulated, 2:1 Input Range, high Power Density	13
	TDR-3WISM Series	3 W	regulated, 4:1 Input Range, high Power Density	14
	THL-3WISM Series	3 W	regulated, 4:1 Input Range, high Power Density	15
	THL-6WISM Series	6 W	regulated, 4:1 Input Range, high Power Density	16
	TON-15 Series	15 W	regulated, 2:1 Input Range	17
	TON-15WI Series	15 W	regulated, 4:1 Input Range	18
	SIP-Package 1 to 6 W			
	TMA / TME Series	1 W	unregulated	19
	TRA-1 Series	1 W	semi-regulated	20
	TMV Series	1 W	unregulated, I/O-Isolation 3000 V	21
	TRV-1 Series	1 W	semi-regulated, I/O-Isolation 3000 V	22
	TMH Series	2 W	unregulated	23
NEW	TRA-3 Series	3 W	semi-regulated	24
	TMR-2E Series	2 W	regulated, 2:1 Input Range (cost optimized)	25
	TMR-2 Series	2 W	regulated, 2:1 Input Range	26
	TMR-2WI Series	2 W	regulated, 4:1 Input Range	27
NEW	TMR-3E Series	3 W	regulated, 2:1 Input Range (cost optimized)	28
NEW	TMR-3 (-HI) Series	3 W	regulated, 2:1 Input Range, I/O-Isol. 1500 or 3000 V	29
NEW	TMR-3WIE Series	3 W	regulated, 4:1 Input Range (cost optimized)	30
	TMR-3WI Series	3 W	regulated, 4:1 Input Range	31
NEW	TMR-6 Series	6 W	regulated, 2:1 Input Range, high Power Density	32
	General Purpose 2 to 25 W			
	TEL-2 Series	2 W	DIP-16 Package, 2:1 Input Range	33
	TEL-3 Series	3 W	DIP-24 Package, 2:1 Input Range	34
	THL-3WI Series	3 W	DIP-16 Package, 4:1 Input Range	35
	TEL-5 Series	5 W	DIP-24 Package, 2:1 Input Range	36
	THL-10WI Series	10 W	1" x 1" x 0,4" Package 4:1 Input Range	37
	TEL-15 Series	15 W	2" x 1" x 0.4" Package, 2:1 Input Range	38
	THL-20WI Series	20 W	1" x 1" x 0.4" Package, 4:1 Input Range	39
NEW	THL-25 Series	25 W	1" x 1" x 0.4" Package, 2:1 Input Range	40
	High Performance, High Power Density 2 to 60 W			
	TDR-2 Series	2 W	DIP-14 Package, 2:1 Input Range	41
	TDR-2WI Series	2 W	DIP-14 Package, 4:1 Input Range	42
	TDR-3 Series	3 W	DIP-14 Package, 2:1 Input Range	43
	TDR-3WI Series	3 W	DIP-14 Package, 4:1 Input Range	44
	TEN-3 Series	3 W	DIP-24 Package, 2:1 Input Range	45
	TEN-3WI Series	3 W	DIP-24 Package, 4:1 Input Range	46
	TEN-5 Series	6 W	DIP-24 Package, 2:1 Input Range	47
	TEN-5WI Series	6 W	DIP-24 Package, 4:1 Input Range	48
NEW	TEN-6N Series	6 W	DIP-24 Package, 2:1 Input Range	49
NEW	TEN-6WIN (-HI) Series	6 W	DIP-24 Package, 4:1 Input Range, opt. I/O isol. 3000 V	50
	TEN-8 Series	8 W	DIP-24 Package, 2:1 Input Range	51
	TEN-8WI Series	8 W	DIP-24 Package, 4:1 Input Range, EN 50155	52
	THD-12 Series	12 W	DIP-24 Package, 2:1 Input Range	53
	THD-12WI Series	12 W	DIP-24 Package, 4:1 Input Range	54
	TON-15 Series	15 W	open Frame, 2:1 Input Range	17
	TON-15WI Series	15 W	open Frame, 4:1 Input Range	18
	THD-15N Series	15 W	DIP-24 Package, 2:1 Input Range	55
	THD-15WIN Series	15 W	DIP-24 Package, 4:1 Input Range	56
	THN-15 Series	15 W	1" x 1" x 0.4" Package, 2:1 Input Range	57
	THN-15WI Series	15 W	1" x 1" x 0.4" Package, 4:1 Input Range	58

DC/DC Converters	THN-20 Series	20 W	1" x 1" x 0.4" Package, 2:1 Input Range	59
	THN-20WI Series	20 W	1" x 1" x 0.4" Package, 4:1 Input Range	60
	TEN-20 Series	20 W	2" x 1" x 0.4" Package, 2:1 Input Range	61
	TEN-20WIN Series	20 W	2" x 1" x 0.4" Package, 4:1 Input Range	62
	NEW TEN-20WIR Series	20 W	2" x 1" x 0.4" Package, 4:1 Input Range, EN 50155	63
	TEN-25WI Series	25 / 30 W	2" x 1.6" x 0.4" Package, 4:1 Input Range	64
	NEW THN-30 Series	30 W	1" x 1" x 0.4" Package, 2:1 Input Range	65
	NEW THN-30WI Series	25 / 30 W	1" x 1" x 0.4" Package, 4:1 Input Range	66
	TEN-30 Series	30 W	2" x 1" x 0.4" Package, 2:1 Input Range	67
	TEN-30WIN Series	30 W	2" x 1" x 0.4" Package, 4:1 Input Range	68
	TEN-40N Series	40 W	2" x 1" x 0.4" Package, 2:1 Input Range	69
	NEW TEN-40WIN Series	40 W	2" x 1" x 0.4" Package, 4:1 Input Range	70
	NEW TEN-40WIR Series	40 W	2" x 1" x 0.4" Package, 4:1 Input Range, EN 50155	71
	TEN-40 Series	40 W	2" x 2" x 0.4" Package, 2:1 Input Range	72
	NEW TEN-40WI Series	40 W	2" x 2" x 0.4" Package, 4:1 Input Range	73
NEW TEN-50 Series	50 W	2" x 1" x 0.4" Package, 2:1 Input Range	74	
TEN-60 Series	60 W	2" x 2" x 0.4" Package, 2:1 Input Range	75	
High Power Modules 75 to 240 W				
TEP-75WI Series	75 W	2.4" x 2.3" x 0.5", 4:1 Input Range, EN 50155	76	
TEP-100 Series	100 W	2.4" x 2.3" x 0.5", 2:1 Input Range	77	
TEP-150WI Series	150 W	3.9" x 2.1" x 1.4", 4:1 Input Range	78	
TEP-160 Series	150 - 196 W	2.4" x 2.3" x 0.5", 4:1 Input Range	79	
TEP-160WIR Series	144 - 182 W	2.4" x 2.3" x 0.5", 2:1 Input Range, EN 50155	80	
TEP-200WIR Series	180 - 240 W	2.4" x 2.3" x 0.5", 4:1 Input Range, EN 50155	81	
Reinforced Insulation - Industrial / Medical Safety				
TMV-EN Series	1 W	SIP-Package, I/O-Isolation 3000 VAC	82	
THI-2M Series	2 W	DIP-16 Package, I/O-Isolation 4000 VAC	83	
THI-2 Series	2 W	DIP-24 Package, I/O-Isolation 2500 VAC	84	
THB-3 Series	3 W	DIP-24 Package, I/O-Isolation 4000 VAC	85	
THP-3 Series	3 W	DIP-24 Package, I/O-Isolation 4000 VAC	86	
THB-6 Series	6 W	DIP-24 Package, I/O-Isolation 4000 VAC	87	
NEW THB-10 Series	6 W	2" x 1" x 0.4" Package, I/O-Isolation 4000 VAC	88	
Non-isolated (POL) Converters				
TSR-1 Series	1 A	Switching Regulator, LM78xx Pinout	89	
TSRN-1 Series	1 A	Switching Regulator, positive & negative Output	90	
TSRN-1SM Series	1 A	Switching Regulator, SMD, pos. & neg. Output	91	
TSR-3 Series	3 A	Switching Regulator,	92	
TOS Series	6, 10, 16, 30 A	Open Frame, SMD or SIP-Package	93	
High Voltage Converters				
THV/PHV Series	180 - 2000 VDC	Shielded Metal Case	94	
Industrial Converters, DIN-Rail Mount				
TCL-DC Series	12 - 60 W	DIN-Rail Mount	116	
Industrial Converters, High Power				
TZL Series	60 - 300 W	Metal Casing	95	
TSC Series	150 - 5000 W	19"-Plug-in Module	96	
TSC 19" Series	5 kW - 22 kW	19"-Subrack	97	

DC/AC Inverters	Industrial Inverters			
	TSD Series	200VA - 30 kVA	Sine Wave Output, 19"-Subrack	98
AC/DC Power Supplies	Open Frame Design 10 to 200 W			
	TOP-60 Series	60 W	Open Frame, 4"x 2" Format	99
	TOP-100 Series	100 W	Open Frame, 4"x 2" Format	100
	TOP-200 Series	200 W	Open Frame, 5"x 3" Format	101
	TOF Series	10 - 150 W	Open Frame, High Performance	102
	Encapsulated Modules 4 to 60 W			
	TMS Series	6 - 25 W	PCB-, Chassis-Mount, Protection Class I	103
	TMP & TMPM Series	4 - 10 W	PCB-Mount, ERP directive (green mode)	104
	TMP Series	15 - 60 W	PCB-, Chassis-Mount, Protection Class II	105
	TMLM Series	4 - 20 W	PCB-Mount	106
	TML Series	20 - 40 W	PCB-, Chassis-Mount	107
	TMT Series	10 - 50 W	PCB-, Chassis-Mount, Medical Safety UL508	108
	TIW Series	4 - 12 W	Flush Box Mount	109
	Metal Enclosure 15 to 1000 W			
NEW	TXM Series	15 - 300 W	Metal Casing, Screw Terminal Block (green mode)	110
	TXL Series	15 - 1000 W	Metal Casing, Screw Terminal Block	111
	TXH Series	120 - 480 W	Metal Casing, Screw Terminal Block	112
	TEX Series	120 W	Field Power Supply, Waterproof Enclosure	113
	DIN-Rail Mount 15 to 960 W			
	TMP-C	15 - 60 W	Encapsulated Modules, Protection Class II	114
	TBL Series	15 - 150 W	Low Profile Plastic Enclosure, Protection Class II	115
	TBL-BC Series	60 W	Power Supply with Battery Controller	115
	TCL Series	24 - 240 W	Slim Profile Plastic Enclosure	116
NEW	TPC Series	30 - 120 W	Compact Plastic Casing	117
	TSPC Series	80 - 400 W	Rugged Metal Casing	118
	TSP Series	72 - 600 W	Rugged Metal Casing, High Performance	119
	TSP-3P Series	240 - 960 W	Rugged Metal Casing, 3-Phase Input	120
	TSP-WVR Series	180 - 600 W	Rugged Metal Casing, wide 100-500VAC Input	121
	TIS Series	50 - 600 W	Low Profile Metal Casing	123
	Power Conversion Glossary			125

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TES-1 Series ▶ 1 W

- ▶ SMD package with industry standard footprint
- ▶ Single and dual output models
- ▶ I/O isolation 1500 VDC
- ▶ Operating temperature Range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Optional tape & reel package (500 pcs/reel)



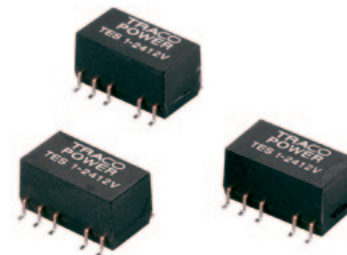
Specifications		Models			
Line regulation	non regulated	Order code	Input voltage	Output voltage	Output current max.
Load regulation	+10 %/ -5% max.	TES 1-0510		3.3 VDC	300 mA
Ripple & noise	<120mVpk-pk (20 MHz BW)	TES 1-0511		5 VDC	200 mA
Short circuit protection	limited 0.5 sec.	TES 1-0519		9 VDC	110 mA
Efficiency	80 % typ.	TES 1-0512	5 VDC \pm 10 %	12 VDC	84 mA
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $75\text{ }^{\circ}\text{C}$ derating 4.0 %/K	TES 1-0513		15 VDC	67 mA
I/O isolation voltage	1500 VDC (60 sec.)	TES 1-0521		\pm 5 VDC	\pm 100 mA
Casing	insert mold (UL 94-0 rated plastic)	TES 1-0522		\pm 12 VDC	\pm 40 mA
Full datasheet	www.tracopower.com/products/tes1.pdf	TES 1-0523		\pm 15 VDC	\pm 33 mA
		TES 1-1211		5 VDC	200 mA
		TES 1-1219		9 VDC	110 mA
		TES 1-1212		12 VDC	84 mA
		TES 1-1213	12 VDC \pm 10 %	15 VDC	67 mA
		TES 1-1221		\pm 5 VDC	\pm 100 mA
		TES 1-1222		\pm 12 VDC	\pm 40 mA
		TES 1-1223		\pm 15 VDC	\pm 33 mA
		TES 1-2411		5 VDC	200 mA
		TES 1-2419		9 VDC	110 mA
		TES 1-2412		12 VDC	84 mA
		TES 1-2413	24 VDC \pm 10 %	15 VDC	67 mA
		TES 1-2421		\pm 5 VDC	\pm 100 mA
		TES 1-2422		\pm 12 VDC	\pm 40 mA
		TES 1-2423		\pm 15 VDC	\pm 33 mA

Dimensions		Pin		
	Single Output Models	1	Single output	Dual output
		Dual Output Models	3	+Vin (Vcc)
			7	-Vout
		8	+Vout	
		9		-Vout
		12		+Vout
		14	No con.	
		18		+Vout

() = Inches

TES-1V Series ▶ 1 W

- ▶ SMD package with industry standard footprint
- ▶ I/O isolation 3000 VDC
- ▶ Single and dual output models
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Optional tape & reel package (450 pcs/reel)



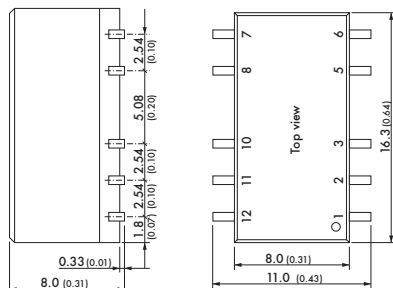
Specifications

Line regulation	non regulated
Load regulation	+10 %/ -5% max.
Ripple & noise	<100mVpk-pk (20 MHz BW)
Short circuit protection	limited 0.5 sec.
Efficiency	80 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $75\text{ }^{\circ}\text{C}$ derating 4.0 %/K
I/O isolation voltage	3000VDC (60 sec.)
I/O isolation capacitance	60 pF typ.
I/O isolation resistance	>10 GOhm
Casing	insert mold (UL 94-0 rated plastic)
Full datasheet	www.tracopower.com/products/tes1v.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TES 1-0510V		3.3 VDC	260 mA
TES 1-0511V		5 VDC	200 mA
TES 1-0512V		12 VDC	84 mA
TES 1-0513V	5 VDC \pm 10 %	15 VDC	67 mA
TES 1-0521V		\pm 5 VDC	\pm 100 mA
TES 1-0522V		\pm 12 VDC	\pm 42 mA
TES 1-0523V		\pm 15 VDC	\pm 34 mA
TES 1-1210V		3.3 VDC	260 mA
TES 1-1211V		5 VDC	200 mA
TES 1-1212V		12 VDC	84 mA
TES 1-1213V	12 VDC \pm 10 %	15 VDC	67 mA
TES 1-1221V		\pm 5 VDC	\pm 100 mA
TES 1-1222V		\pm 12 VDC	\pm 42 mA
TES 1-1223V		\pm 15 VDC	\pm 34 mA
TES 1-2410V		3.3 VDC	260 mA
TES 1-2411V		5 VDC	200 mA
TES 1-2412V		12 VDC	84 mA
TES 1-2413V	24 VDC \pm 10 %	15 VDC	67 mA
TES 1-2421V		\pm 5 VDC	\pm 100 mA
TES 1-2422V		\pm 12 VDC	\pm 42 mA
TES 1-2423V		\pm 15 VDC	\pm 34 mA

Dimensions



() = Inches

Pin	Single output	Dual output
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	No con.	No con.
5	-Vout	Common
6	No con.	-Vout
7	No con.	No con.
8	+Vout	+Vout
10	No con.	No con.
11	No con.	No con.
12	No con.	No con.

TES-2H Series ▶ 2 W

- ▶ SMD package with industry standard footprint
- ▶ Single and dual output models
- ▶ I/O isolation 1500 VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Optional tape & reel package (300 pcs/reel)



Specifications		Models			
Line regulation	non regulated	Order code	Input voltage	Output voltage	Output current max.
Load regulation	+10 %/ -5% max.	TES 2-0510H		3.3 VDC	500 mA
Ripple & noise	<120mVpk-pk (20 MHz BW)	TES 2-0511H		5 VDC	400 mA
Short circuit protection	limited 0.5 sec.	TES 2-0512H	5 VDC \pm 10 %	12 VDC	165 mA
Efficiency	80 % typ.	TES 2-0521H		\pm 5 VDC	\pm 200 mA
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $75\text{ }^{\circ}\text{C}$ derating 4.0 %/K	TES 2-0522H		\pm 12 VDC	\pm 83 mA
I/O isolation voltage	1500VDC (60 sec.)	TES 2-0523H		\pm 15 VDC	\pm 66 mA
I/O isolation capacitance	60 pF typ.	TES 2-1210H		3.3 VDC	500 mA
I/O isolation resistance	>10 GOhm	TES 2-1211H		5 VDC	400 mA
Casing	insert mold (UL 94-0 rated plastic)	TES 2-1212H	12 VDC \pm 10 %	12 VDC	165 mA
Full datasheet	www.tracopower.com/products/tes2h.pdf	TES 2-1222H		\pm 12 VDC	\pm 83 mA
		TES 2-1223H		\pm 15 VDC	\pm 66 mA
		TES 2-2410H		3.3 VDC	500 mA
		TES 2-2411H		5 VDC	400 mA
		TES 2-2412H	24 VDC \pm 10 %	12 VDC	165 mA
		TES 2-2422H		\pm 12 VDC	\pm 83 mA
		TES 2-2423H		\pm 15 VDC	\pm 66 mA

Dimensions		Pin		
Single output models	Dual output models	1	Single output	Dual output
		2	+Vin (Vcc)	+Vin (Vcc)
		4	- Vout	Common
		5	+ Vout	- Vout
		7		+ Vout
		8	No con.	
		10		No con.

() = Inches

TES-2M Series ▶ 2 W



- ▶ Ultracompact SMD package
- ▶ I/O isolation 4000 VACrms
- ▶ Reinforced insulation rated for working voltage up to 300 VAC
- ▶ Industrial and medical safety approval
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+71\text{ }^{\circ}\text{C}$
- ▶ Optional tape & reel package (200 pcs/reel)



Specifications

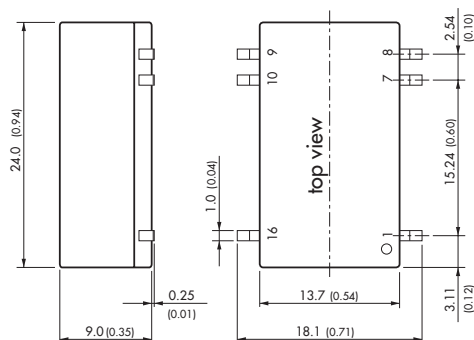
Line regulation	non regulated
Load regulation	10 % max.
Ripple & noise	<150 mVpk-pk (20 MHz BW)
Input filter	Pi-filter
Short circuit protection	limited 0.5 sec.
Efficiency	70 % typ.
Operating temperature range	$-25\text{ }^{\circ}\text{C}$ to $+71\text{ }^{\circ}\text{C}$ above $60\text{ }^{\circ}\text{C}$ derating 2.5 %/K
I/O isolation voltage	4000 VACrms (reinforced), rated for 300 VAC working voltage
I/O isolation test voltage	6000Vpk (1 sec.)
I/O isolation capacitance	20 pF typ.
I/O isolation resistance	>10,000 MOhm
Safety standards / approvals	UL 60950-1, IEC/EN 60950-1, UL 60601-1, IEC/EN 60601-1, CB-report
Casing	insert mold (UL 94-0 rated plastic)
Full datasheet	www.tracopower.com/products/tes2m.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TES 2-0511M		5 VDC	400 mA
TES 2-0512M		12 VDC	165 mA
TES 2-0513M	5 VDC \pm 10 %	15 VDC	133 mA
TES 2-0522M		\pm 12 VDC	\pm 83 mA
TES 2-0523M		\pm 15 VDC	\pm 66 mA
TES 2-1211M		5 VDC	400 mA
TES 2-1212M		12 VDC	165 mA
TES 2-1213M	12 VDC \pm 10 %	15 VDC	133 mA
TES 2-1222M		\pm 12 VDC	\pm 83 mA
TES 2-1223M		\pm 15 VDC	\pm 66 mA
TES 2-2411M		5 VDC	400 mA
TES 2-2412M		12 VDC	165 mA
TES 2-2413M	24 VDC \pm 10 %	15 VDC	133 mA
TES 2-2422M		\pm 12 VDC	\pm 83 mA
TES 2-2423M		\pm 15 VDC	\pm 66 mA

Product with same electrical specifications available in DIP package.
See THI-2M series page 83

Dimensions



() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
7	No con.	No con.
8	No con.	Common
9	+ Vout	+ Vout
10	- Vout	- Vout
16	+ Vin (Vcc)	+ Vin (Vcc)

TDR-2SM Series ▶ 2 W



- ▶ Compact design in SMD package
- ▶ Wide 2:1 input voltage range
- ▶ Fully regulated outputs
- ▶ Low ripple & noise
- ▶ No minimum load required
- ▶ I/O-isolation 1500VDC
- ▶ Operating temperature range -40 °C to +85 °C without derating
- ▶ Short circuit protection
- ▶ Remote On/Off
- ▶ Optional tape & reel package (250 pcs / reel)

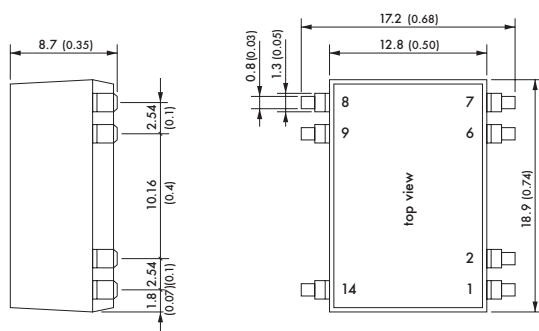


Specifications	
Line regulation	0.2 % max.
Load regulation	- Single output models: 1.0% max. - Dual output models: 1.0 % max.
Ripple & noise	30 mVp-p typ. (20 MHz BW)
Short circuit protection	continuous, automatic recovery
Efficiency	81 % typ.
Operating temperature range	-40 °C to +85 °C without derating
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	over mold (UL 94 V-0 rated epoxy)
Full datasheet	www.tracopower.com/products/tdr2.pdf

Models			
Order code	Input voltage	Output voltage	Output current max.
TDR 2-0511SM		5 VDC	400 mA
TDR 2-0512SM		12 VDC	167 mA
TDR 2-0513SM	4.5 – 9 VDC	15 VDC	134 mA
TDR 2-0522SM		± 12 VDC	± 83 mA
TDR 2-0523SM		± 15 VDC	± 67 mA
TDR 2-1211SM		5 VDC	400 mA
TDR 2-1212SM		12 VDC	167 mA
TDR 2-1213SM	9 – 18 VDC	15 VDC	134 mA
TDR 2-1222SM		± 12 VDC	± 83 mA
TDR 2-1223SM		± 15 VDC	± 67 mA
TDR 2-2411SM		5 VDC	400 mA
TDR 2-2412SM		12 VDC	167 mA
TDR 2-2413SM	18 – 36 VDC	15 VDC	134 mA
TDR 2-2422SM		± 12 VDC	± 83 mA
TDR 2-2423SM		± 15 VDC	± 67 mA
TDR 2-4811SM		5 VDC	400 mA
TDR 2-4812SM		12 VDC	167 mA
TDR 2-4813SM	36 – 75 VDC	15 VDC	134 mA
TDR 2-4822SM		± 12 VDC	± 83 mA
TDR 2-4823SM		± 15 VDC	± 67 mA

Product with same electrical specifications available in DIP package.
See TDR-2 series page 41

Dimensions



Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	Remote On/Off	Remote On/Off
6	No con.	Common
7	No con.	- Vout
8	+ Vout	+ Vout
9	- Vout	Common
14	+ Vin (Vcc)	+ Vin (Vcc)

() = Inches

TDR-2WISM Series ▶ 2 W



- ▶ Compact design in SMD package
- ▶ Ultra wide 4:1 input voltage range
- ▶ Fully regulated outputs
- ▶ Low ripple & noise
- ▶ No minimum load required
- ▶ I/O-isolation 1500VDC
- ▶ Operating temperature range -40 °C to +85 °C without derating
- ▶ Short circuit protection
- ▶ Remote On/Off
- ▶ Optional tape & reel package (250 pcs/reel)



Specifications	
Line regulation	0.2 % max.
Load regulation	- Single output models: 1.0 % max. - Dual output models: 1.0 % max.
Ripple & noise	30 mVp-p typ. (20 MHz BW)
Short circuit protection	continuous, automatic recovery
Efficiency	81 % typ.
Operating temperature range	-40 °C to +85 °C without derating
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	over mold (UL 94 V-0 rated epoxy)
Full datasheet	www.tracopower.com/products/tdr2wi.pdf

Models			
Order code	Input voltage	Output voltage	Output current max.
TDR 2-1211WISM		5 VDC	400 mA
TDR 2-1212WISM		12 VDC	167 mA
TDR 2-1213WISM	4.5 – 18 VDC	15 VDC	134 mA
TDR 2-1222WISM		± 12 VDC	± 83 mA
TDR 2-1223WISM		± 15 VDC	± 67 mA
TDR 2-2411WISM		5 VDC	400 mA
TDR 2-2412WISM		12 VDC	167 mA
TDR 2-2413WISM	9 – 36 VDC	15 VDC	134 mA
TDR 2-2422WISM		± 12 VDC	± 83 mA
TDR 2-2423WISM		± 15 VDC	± 67 mA
TDR 2-4811WISM		5 VDC	400 mA
TDR 2-4812WISM		12 VDC	167 mA
TDR 2-4813WISM	18 – 75 VDC	15 VDC	134 mA
TDR 2-4822WISM		± 12 VDC	± 83 mA
TDR 2-4823WISM		± 15 VDC	± 67 mA

Product with same electrical specifications available in DIP package.
See TDR-2WI series page 42

Dimensions

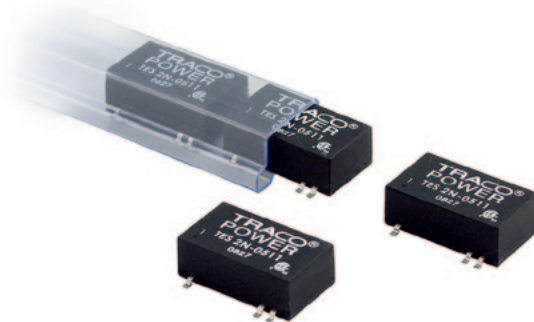
() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	Remote On/Off	Remote On/Off
6	No con.	Common
7	No con.	- Vout
8	+ Vout	+ Vout
9	- Vout	Common
14	+ Vin (Vcc)	+ Vin (Vcc)

TES-2N Series ▶ 2 W



- ▶ Low profile SMD package
- ▶ Wide 2:1 input range
- ▶ Fully regulated output
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Short circuit protection
- ▶ Input filter to meet EN 55022, class A
- ▶ Available in tape & reel package (250 pcs / reel)



Specifications

Line regulation	0.5 % max.
Load regulation	Single output models: 0.75 % max. Dual output models: 2.0 % max.
Ripple & noise	<50 mVpk-pk (20 MHz BW)
Conducted EMI	EN55022, class A, and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	78 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.5 %/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, CB-report
Casing	insert mold (UL 94-0 rated plastic)
Full datasheet	www.tracopower.com/products/tes2n.pdf

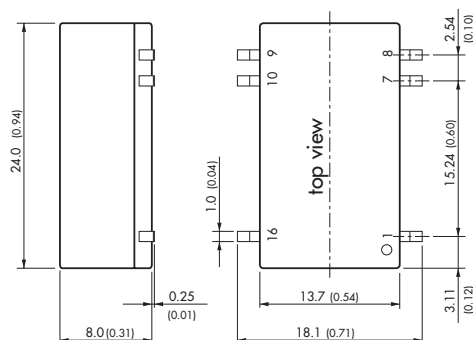
Models

Order code	Input voltage	Output voltage	Output current max.
TES 2N-0510		3.3 VDC	500 mA
TES 2N-0511		5 VDC	400 mA
TES 2N-0512		12 VDC	165 mA
TES 2N-0513	4.5 – 9 VDC	15 VDC	135 mA
TES 2N-0521		± 5 VDC	± 200 mA
TES 2N-0522		± 12 VDC	± 85 mA
TES 2N-0523		± 15 VDC	± 65 mA
TES 2N-1210		3.3 VDC	500 mA
TES 2N-1211		5 VDC	400 mA
TES 2N-1212		12 VDC	165 mA
TES 2N-1213	9 – 18 VDC	15 VDC	135 mA
TES 2N-1221		± 5 VDC	± 200 mA
TES 2N-1222		± 12 VDC	± 85 mA
TES 2N-1223		± 15 VDC	± 65 mA
TES 2N-2410		3.3 VDC	500 mA
TES 2N-2411		5 VDC	400 mA
TES 2N-2412		12 VDC	165 mA
TES 2N-2413	18 – 36 VDC	15 VDC	135 mA
TES 2N-2421		± 5 VDC	± 200 mA
TES 2N-2422		± 12 VDC	± 85 mA
TES 2N-2423		± 15 VDC	± 65 mA
TES 2N-4810		3.3 VDC	500 mA
TES 2N-4811		5 VDC	400 mA
TES 2N-4812		12 VDC	165 mA
TES 2N-4813	36 – 75 VDC	15 VDC	135 mA
TES 2N-4821		± 5 VDC	± 200 mA
TES 2N-4822		± 12 VDC	± 85 mA
TES 2N-4823		± 15 VDC	± 65 mA

Product with same electrical specifications available in DIP package.

See TEL-2 series page 33

Dimensions



() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
7	No con.	No con.
8	No con.	Common
9	+ Vout	+ Vout
10	- Vout	- Vout
16	+ Vin (Vcc)	+ Vin (Vcc)

TDR-3SM Series ▶ 3 W



- ▶ Most compact 3 Watt converter in SMD package
- ▶ Wide 2:1 input voltage range
- ▶ Fully regulated outputs
- ▶ Low ripple & noise
- ▶ No minimum load required
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range -40 °C to +85 °C
- ▶ Short circuit protection
- ▶ Remote On/Off
- ▶ Optional tape & reel package (250 pcs/reel)



Specifications

Line regulation	0.2 % max.
Load regulation	- Single output models: 1.0% max. - Dual output models: 1.0 % max.
Ripple & noise	30 mVp-p typ. (20 MHz BW)
Short circuit protection	continuous, automatic recovery
Efficiency	81 % typ.
Operating temperature range	-40 °C to +85 °C above 70 °C derating 3.5%/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	over mold (UL 94 V-0 rated epoxy)
Full datasheet	www.tracopower.com/products/tdr3.pdf

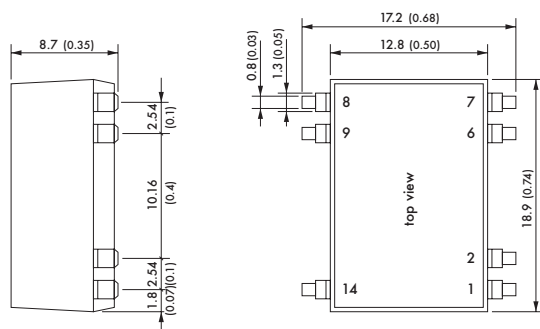
Models

Order code	Input voltage	Output voltage	Output current max.
TDR 3-0511SM		5 VDC	600 mA
TDR 3-0512SM		12 VDC	250 mA
TDR 3-0513SM	4.5 – 9 VDC	15 VDC	200 mA
TDR 3-0522SM		± 12 VDC	± 125 mA
TDR 3-0523SM		± 15 VDC	± 100 mA
TDR 3-1211SM		5 VDC	600 mA
TDR 3-1212SM		12 VDC	250 mA
TDR 3-1213SM	9 – 18 VDC	15 VDC	200 mA
TDR 3-1222SM		± 12 VDC	± 125 mA
TDR 3-1223SM		± 15 VDC	± 100 mA
TDR 3-2411SM		5 VDC	600 mA
TDR 3-2412SM		12 VDC	250 mA
TDR 3-2413SM	18 – 36 VDC	15 VDC	200 mA
TDR 3-2422SM		± 12 VDC	± 125 mA
TDR 3-2423SM		± 15 VDC	± 100 mA
TDR 3-4811SM		5 VDC	600 mA
TDR 3-4812SM		12 VDC	250 mA
TDR 3-4813SM	36 – 75 VDC	15 VDC	200 mA
TDR 3-4822SM		± 12 VDC	± 125 mA
TDR 3-4823SM		± 15 VDC	± 100 mA

Product with same electrical specifications available in DIP package.

See TDR-3 series page 43

Dimensions



() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	Remote On/Off	Remote On/Off
6	No con.	Common
7	No con.	- Vout
8	+ Vout	+ Vout
9	- Vout	Common
14	+ Vin (Vcc)	+ Vin (Vcc)

TDR-3WISM Series ▶ 3 W



- ▶ Most compact 3 Watt converter in SMD package
- ▶ Ultra wide 4:1 input voltage range
- ▶ Fully regulated outputs
- ▶ Low ripple & noise
- ▶ No minimum load required
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range -40 °C to +85 °C
- ▶ Short circuit protection
- ▶ Remote On/Off
- ▶ Optional tape & reel package (250 pcs / reel)



Specifications

Line regulation	0.2 % max.
Load regulation	- Single output models: 1.0% max. - Dual output models: 1.0 % max.
Ripple & noise	30 mVp-p typ. (20 MHz BW)
Short circuit protection	continuous, automatic recovery
Efficiency	81 % typ.
Operating temperature range	-40 °C to +85 °C above 70 °C derating 3.3%/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	over mold (UL 94 V-0 rated epoxy)
Full datasheet	www.tracopower.com/products/tdr3wi.pdf

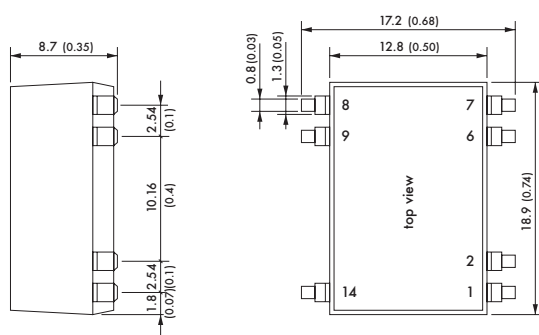
Models

Order code	Input voltage	Output voltage	Output current max.
TDR 3-1211WISM		5 VDC	600 mA
TDR 3-1212WISM		12 VDC	250 mA
TDR 3-1213WISM	4.5 – 18 VDC	15 VDC	200 mA
TDR 3-1222WISM		± 12 VDC	± 125 mA
TDR 3-1223WISM		± 15 VDC	± 100 mA
TDR 3-2411WISM		5 VDC	600 mA
TDR 3-2412WISM		12 VDC	250 mA
TDR 3-2413WISM	9 – 36 VDC	15 VDC	200 mA
TDR 3-2422WISM		± 12 VDC	± 125 mA
TDR 3-2423WISM		± 15 VDC	± 100 mA
TDR 3-4811WISM		5 VDC	600 mA
TDR 3-4812WISM		12 VDC	250 mA
TDR 3-4813WISM	18 – 75 VDC	15 VDC	200 mA
TDR 3-4822WISM		± 12 VDC	± 125 mA
TDR 3-4823WISM		± 15 VDC	± 100 mA

Product with same electrical specifications available in DIP package.

See TDR-3WI series page 44

Dimensions



() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	Remote On/Off	Remote On/Off
6	No con.	Common
7	No con.	- Vout
8	+ Vout	+ Vout
9	- Vout	Common
14	+ Vin (Vcc)	+ Vin (Vcc)

THL-3WISM Series ▶ 3 W



- ▶ Ultra wide 4:1 input voltage range
- ▶ Fully regulated outputs
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+75\text{ }^{\circ}\text{C}$
- ▶ Short circuit protection
- ▶ Input filter to meet EN 55022, class A
- ▶ Remote On/Off
- ▶ Optional tape & reel package (150 pcs/reel)



Specifications

Line regulation	1.0% max.
Load regulation	1.2% max.
Ripple & noise	<60 mVpk-pk (20 MHz BW)
Conducted EMI	EN55022, class A, and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	80 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+75\text{ }^{\circ}\text{C}$ above $60\text{ }^{\circ}\text{C}$ derating 2.5%/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards	UL 60950-1, IEC/EN 60950-1, report pending
Remote On/Off	shutdown input for low input current (5 mA) in standby operation
Casing	insert mold (UL 94 V-0 rated plastic)
Full datasheet	www.tracopower.com/products/thl3wism.pdf

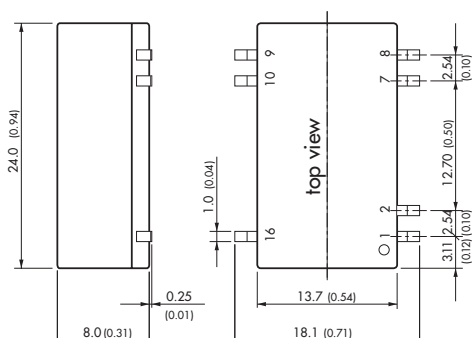
Models

Order code	Input voltage	Output voltage	Output current max.
THL 3-2410WISM		3.3 VDC	600 mA
THL 3-2411WISM		5 VDC	600 mA
THL 3-2412WISM		12 VDC	250 mA
THL 3-2413WISM	9 – 36 VDC	15 VDC	200 mA
THL 3-2415WISM		24 VDC	125 mA
THL 3-2421WISM		± 5 VDC	± 300 mA
THL 3-2422WISM		± 12 VDC	± 125 mA
THL 3-2423WISM		± 15 VDC	± 100 mA
THL 3-4810WISM		3.3 VDC	600 mA
THL 3-4811WISM		5 VDC	600 mA
THL 3-4812WISM		12 VDC	250 mA
THL 3-4813WISM	18 – 75 VDC	15 VDC	200 mA
THL 3-4815WISM		24 VDC	125 mA
THL 3-4821WISM		± 5 VDC	± 300 mA
THL 3-4822WISM		± 12 VDC	± 125 mA
THL 3-4823WISM		± 15 VDC	± 100 mA

Product with same electrical specifications available in DIP package.

See THL-3WI series page 35

Dimensions



() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	Remote On/Off	Remote On/Off
7	No con.	No con.
8	No con.	Common
9	+ Vout	+ Vout
10	- Vout	- Vout
16	+ Vin (Vcc)	+ Vin (Vcc)

THL-6WISM Series ▶ 6 W



- ▶ Ultra compact SMD package
- ▶ Ultra wide 4:1 input voltage range
- ▶ Fully regulated output
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+75\text{ }^{\circ}\text{C}$
- ▶ I/O isolation 1500 VDC
- ▶ Short circuit protection
- ▶ Input filter to meet EN 55022, class A
- ▶ Optional tape & reel package



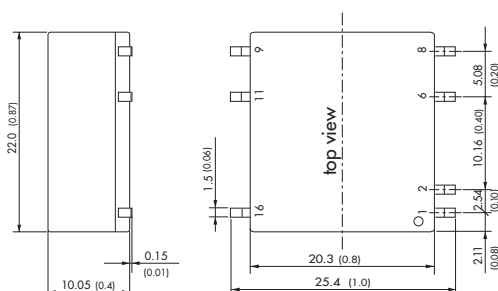
Specifications

Line regulation	1.0 % max.
Load regulation	1.2 % max.
Ripple & Noise	<60 mVpk-pk typ.(20 MHz BW)
Input filter	EN 55022, class A and FCC, level A without external components
Short circuit protection	continuous, automatic recovery
Efficiency	83 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+75\text{ }^{\circ}\text{C}$ above $60\text{ }^{\circ}\text{C}$ derating 2.5%/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards	UL 60950-1, IEC/EN 60950-1
Remote On/Off	shutdown input for low input current (10 mA) in standby operation
Casing	insert mold (UL 94 V-0 rated plastic)
Full datasheet	www.tracopower.com/products/thl6wism.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
THL 6-2410WISM		3.3 VDC	1450 mA
THL 6-2411WISM		5 VDC	1200 mA
THL 6-2412WISM		12 VDC	500 mA
THL 6-2413WISM	9 – 36 VDC	15 VDC	400 mA
THL 6-2415WISM		24 VDC	250 mA
THL 6-2421WISM		± 5 VDC	± 600 mA
THL 6-2422WISM		± 12 VDC	± 250 mA
THL 6-2423WISM		± 15 VDC	± 200 mA
THL 6-4810WISM		3.3 VDC	1450 mA
THL 6-4811WISM		5 VDC	1200 mA
THL 6-4812WISM		12 VDC	500 mA
THL 6-4813WISM	18 – 75 VDC	15 VDC	400 mA
THL 6-4815WISM		24 VDC	250 mA
THL 6-4821WISM		± 5 VDC	± 600 mA
THL 6-4822WISM		± 12 VDC	± 250 mA
THL 6-4823WISM		± 15 VDC	± 200 mA

Dimensions



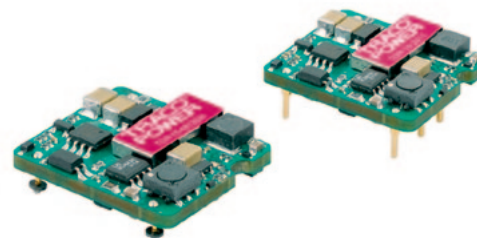
() = Inches

Pin	Single output	Dual output
1	Remote On/Off	Remote On/Off
2	- Vin (GND)	- Vin (GND)
6	No con.	Common
8	No con.	- Vout
9	+ Vout	+ Vout
11	- Vout	Common
16	+ Vin (Vcc)	+ Vin (Vcc)

TON-15 Series ▶ 15 W



- ▶ Compact, low profile
- ▶ SMD or trough hole version
- ▶ Wide 2:1 input voltage range
- ▶ High efficiency up to 88 %
- ▶ I/O-isolation 2250 VDC (basic insulation)
- ▶ Operating temperature range -40 °C to +85 °C
- ▶ Remote On/Off
- ▶ Adjustable output voltage

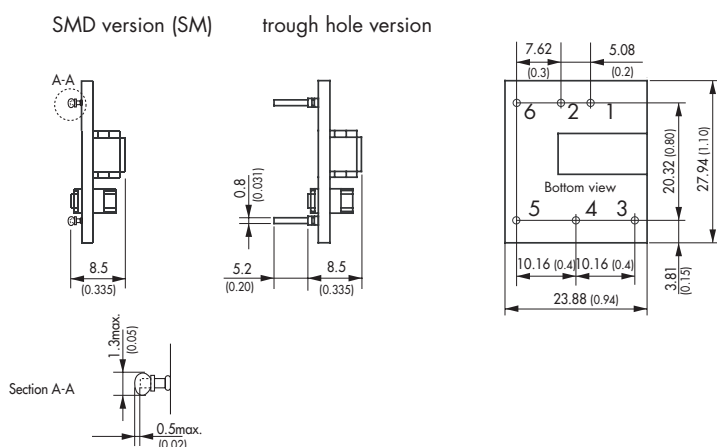


Specifications	
Line regulation	0.2 % max.
Load regulation	0.2 % max.
Output voltage adjustment	±10 % by external resistor
Ripple & noise (20 MHz BW)	<75 mVpk-pk <100 mVpk-pk for 12 & 15 VDC models
Conducted EMI	EN55022, class A and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	86 % typ.
Operating temperature range	-40 °C to +85 °C above 75 °C derating 6.7 %/K
I/O isolation voltage	2250 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC 60950-1 CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation. Negative remote function (forced On) on request.
Full datasheet	www.tracopower.com/products/ton15.pdf

SMD Models			
Order code	Input voltage	Output voltage	Output current max.
TON 15-2410SM		3.3 VDC	3500 mA
TON 15-2411SM	18- 36 VDC	5 VDC	3000 mA
TON 15-2412SM		12 VDC	1250 mA
TON 15-2413SM		15 VDC	1000 mA
TON 15-4810SM		3.3 VDC	3500 mA
TON 15-4811SM	36- 75 VDC	5 VDC	3000 mA
TON 15-4812SM		12 VDC	1250 mA
TON 15-4813SM		15 VDC	1000 mA

Trough Hole Models			
Order code	Input voltage	Output voltage	Output current max.
TON 15-2410		3.3 VDC	3500 mA
TON 15-2411	18- 36 VDC	5 VDC	3000 mA
TON 15-2412		12 VDC	1250 mA
TON 15-2413		15 VDC	1000 mA
TON 15-4810		3.3 VDC	3500 mA
TON 15-4811	36- 75 VDC	5 VDC	3000 mA
TON 15-4812		12 VDC	1250 mA
TON 15-4813		15 VDC	1000 mA

Dimensions



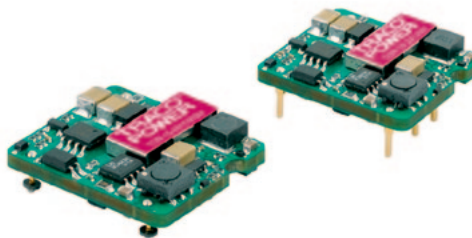
() = Inches

Pin	
1	+ Vin (Vcc)
2	- Vin (GND)
3	+ Vout
4	Trim
5	- Vout
6	Remote On/Off

TON-15WI Series ▶ 15 W



- ▶ Compact low profile
- ▶ SMD or trough hole version
- ▶ Ultra wide 4:1 input voltage range
- ▶ High efficiency up to 88 %
- ▶ I/O-isolation 2250 VDC (basic insulation)
- ▶ Operating temperature range -40 °C to +85 °C
- ▶ Remote On/Off
- ▶ Adjustable output voltage
- ▶ Optional trough hole version

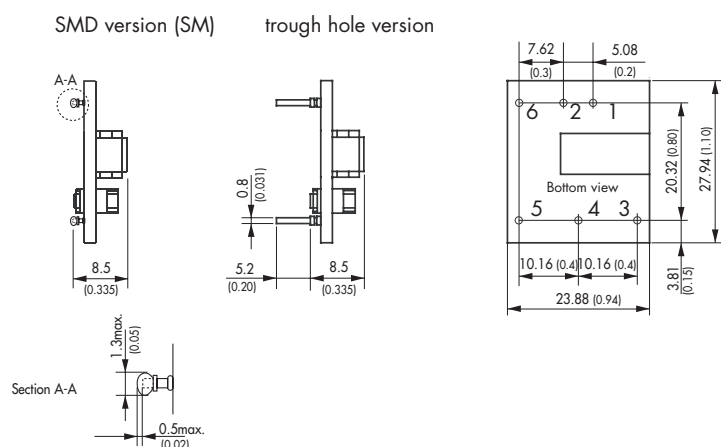


Specifications	
Line regulation	0.2 % max.
Load regulation	0.2 % max.
Output voltage adjustment	±10 % by external resistor
Ripple & noise (20 MHz BW)	<75 mVpk-pk <100 mVpk-pk for 12 & 15 VDC models
Conducted EMI	EN55022, class A and FCC, level A (with external capacitors)
Short circuit protection	continuous, automatic recovery
Efficiency	86 % typ.
Operating temperature range	-40 °C to +85 °C above 60 °C derating 2.0 %/K
I/O isolation voltage	2250 VDC (60 sec.)
Safety standards / approvals	CUL/UL 60950-1, IEC 60950-1, CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation. Negative remote function (forced On) on request.
Full datasheet	www.tracopower.com/products/ton15wi.pdf

SMD Models			
Order code	Input voltage	Output voltage	Output current max.
TON 15-2410WISM	9 – 36 VDC	3.3 VDC	4000 mA
TON 15-2411WISM		5 VDC	3000 mA
TON 15-2412WISM		12 VDC	1300 mA
TON 15-2413WISM	18 – 75 VDC	15 VDC	1000 mA
TON 15-4810WISM		3.3 VDC	4000 mA
TON 15-4811WISM		5 VDC	3000 mA
TON 15-4812WISM	15 VDC	12 VDC	1300 mA
TON 15-4813WISM		15 VDC	1000 mA

SMD Models			
Order code	Input voltage	Output voltage	Output current max.
TON 15-2410WI	9 – 36 VDC	3.3 VDC	4000 mA
TON 15-2411WI		5 VDC	3000 mA
TON 15-2412WI		12 VDC	1300 mA
TON 15-2413WI	18 – 75 VDC	15 VDC	1000 mA
TON 15-4810WI		3.3 VDC	4000 mA
TON 15-4811WI		5 VDC	3000 mA
TON 15-4812WI	15 VDC	12 VDC	1300 mA
TON 15-4813WI		15 VDC	1000 mA

Dimensions

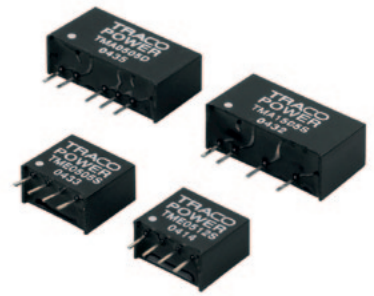


() = Inches

Pin	
1	+ Vin (Vcc)
2	- Vin (GND)
3	+ Vout
4	Trim
5	- Vout
6	Remote On/Off

TMA/TME Series ▶ 1 W

- ▶ Industry standard pinout
- ▶ Non-regulated output
- ▶ Single and dual output models
- ▶ I/O isolation voltage 1000VDC
- ▶ High efficiency
- ▶ Operating temperature range -40 °C to +85 °C



Specifications	
Line regulation	non regulated
Load regulation	10% max.
Ripple & Noise	- TMA <75 mVpk-pk (20 MHz BW) - TME <150 mVpk-pk (20 MHz BW)
Short circuit protection	limited 1 sec.
Efficiency	80% typ.
Operating temperature range	-40 °C to +85 °C (no derating)
I/O isolation voltage	1000VDC (60 sec.)
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tme.pdf

Models				
Order code		Input voltage	Output voltage	Output current max.
TME 0303S		3.3 VDC ± 10 %	3.3 VDC	260 mA
TME 0305S			5 VDC	200 mA
TME 0503S			3.3 VDC	260 mA
TMA 0505S	TME 0505S		5 VDC	200 mA
	TME 0509S		9 VDC	110 mA
TMA 0512S	TME 0512S		12 VDC	80 mA
TMA 0515S	TME 0515S	5 VDC ± 10 %	15 VDC	65 mA
TMA 0505D			± 5 VDC	± 100 mA
TMA 0512D			± 12 VDC	± 40 mA
TMA 0515D			± 15 VDC	± 35 mA
TMA 1205S	TME 1205S		5 VDC	200 mA
	TME 1209S		9 VDC	110 mA
TMA 1212S	TME 1212S		12 VDC	80 mA
TMA 1215S	TME 1215S	12 VDC ± 10 %	15 VDC	65 mA
TMA 1205D			± 5 VDC	± 100 mA
TMA 1212D			± 12 VDC	± 40 mA
TMA 1215D			± 15 VDC	± 35 mA
TMA 1505S			5 VDC	200 mA
TMA 1512S			12 VDC	80 mA
TMA 1515S		15 VDC ± 10 %	15 VDC	65 mA
TMA 1505D			± 5 VDC	± 100 mA
TMA 1512D			± 12 VDC	± 40 mA
TMA 1515D			± 15 VDC	± 35 mA
TMA 2405S	TME 2405S		5 VDC	200 mA
	TME 2409S		9 VDC	110 mA
TMA 2412S	TME 2412S		12 VDC	80 mA
TMA 2415S	TME 2415S	24 VDC ± 10 %	15 VDC	65 mA
TMA 2405D			± 5 VDC	± 100 mA
TMA 2412D			± 12 VDC	± 40 mA
TMA 2415D			± 15 VDC	± 35 mA

For improved load regulation see TRA-1 series page 20

Dimensions	
<p>TME</p>	<p>TMA</p>
<p>() = Inches</p>	

Pin	TMA Single output	TMA Dual output	TME Single output
1	+ Vin (Vcc)	+ Vin (Vcc)	- Vin (GND)
2	- Vin (GND)	- Vin (GND)	+ Vin (Vcc)
3	No Pin	No Pin	- Vout
4	- Vout	- Vout	+ Vout
5	No Pin	Common	
6	+ Vout	+ Vout	

TRA-1 Series ▶ 1 W



- ▶ Semi-regulated output (load)
- ▶ Industry standard pinout
- ▶ Very high efficiency up to 88%
- ▶ Single and dual output models
- ▶ I/O isolation voltage 1000VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$



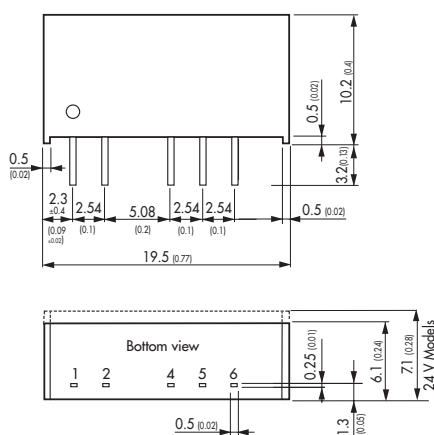
Specifications

Line regulation	non regulated
Load regulation (20- 100% load)	5% typ for 5V input models 4% typ for 12V input models 3% typ for 24V input models
Ripple & Noise	<50 mVp-p (20 MHz BW)
Short circuit protection	limited 0.5 sec.
Efficiency	86 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ (no derating)
I/O isolation voltage	1000VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tra1.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TRA 1-0511		5 VDC	200 mA
TRA 1-0519		9 VDC	110 mA
TRA 1-0512		12 VDC	84 mA
TRA 1-0513	5 VDC \pm 10 %	15 VDC	67 mA
TRA 1-0521		\pm 5 VDC	\pm 100 mA
TRA 1-0522		\pm 12 VDC	\pm 42 mA
TRA 1-0523		\pm 15 VDC	\pm 34 mA
TRA 1-1211		5 VDC	200 mA
TRA 1-1219		9 VDC	110 mA
TRA 1-1212		12 VDC	84 mA
TRA 1-1213	12 VDC \pm 10 %	15 VDC	67 mA
TRA 1-1221		\pm 5 VDC	\pm 100 mA
TRA 1-1222		\pm 12 VDC	\pm 42 mA
TRA 1-1223		\pm 15 VDC	\pm 34 mA
TRA 1-2411		5 VDC	200 mA
TRA 1-2419		9 VDC	110 mA
TRA 1-2412		12 VDC	84 mA
TRA 1-2413	24 VDC \pm 10 %	15 VDC	67 mA
TRA 1-2421		\pm 5 VDC	\pm 100 mA
TRA 1-2422		\pm 12 VDC	\pm 42 mA
TRA 1-2423		\pm 15 VDC	\pm 34 mA

Dimensions

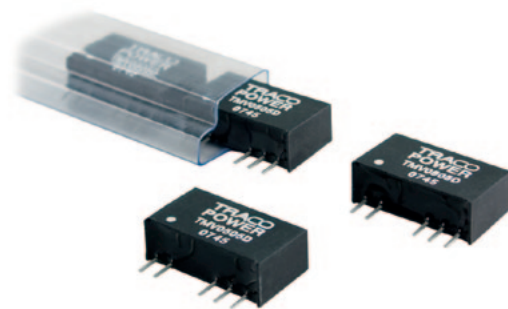


() = Inches

Pin	Single output	Dual output
1	+ Vin (Vcc)	+ Vin (Vcc)
2	- Vin (GND)	- Vin (GND)
4	- Vout	- Vout
5	No pin	Common
6	+ Vout	+ Vout

TMV Series ▶ 1 W

- ▶ Industry standard pinout
- ▶ Single and dual output models
- ▶ I/O isolation voltage 3000 VDC
- ▶ Operating temperature range -40 °C to +85 °C



Specifications	
Line regulation	non regulated
Load regulation	10% max.
Ripple & noise	<100 mVpk-pk (20 MHz BW)
Short circuit protection	limited 1 sec.
Efficiency	77% typ.
Operating temperature range	-40 °C to +85 °C (no derating)
I/O isolation voltage	3000 VDC (60 sec.)
I/O isolation capacitance	60 pF typ.
I/O isolation resistance	>10 GOhm
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tmv.pdf

Models			
Order code	Input voltage	Output voltage	Output current max.
TMV 0505S		5 VDC	200 mA
TMV 0509S		9 VDC	110 mA
TMV 0512S		12 VDC	80 mA
TMV 0515S	5 VDC ± 10 %	15 VDC	65 mA
TMV 0505D		± 5 VDC	± 100 mA
TMV 0512D		± 12 VDC	± 40 mA
TMV 0515D		± 15 VDC	± 30 mA
TMV 1205S		5 VDC	200 mA
TMV 1212S		12 VDC	80 mA
TMV 1215S	12 VDC ± 10 %	15 VDC	65 mA
TMV 1205D		± 5 VDC	± 100 mA
TMV 1212D		± 12 VDC	± 40 mA
TMV 1215D		± 15 VDC	± 30 mA
TMV 2405S		5 VDC	200 mA
TMV 2412S		12 VDC	80 mA
TMV 2415S	24 VDC ± 10 %	15 VDC	65 mA
TMV 2405D		± 5 VDC	± 100 mA
TMV 2412D		± 12 VDC	± 40 mA
TMV 2415D		± 15 VDC	± 30 mA

Product available with reinforced insulation
See TMV-EN series page 82

For improved load regulation
see TRV-1 series page 22

Dimensions																				
	<p>() = Inches</p>	<table border="1"> <thead> <tr> <th>Pin</th> <th>Single output</th> <th>Dual output</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+ Vin (Vcc)</td> <td>+ Vin (Vcc)</td> </tr> <tr> <td>2</td> <td>- Vin (GND)</td> <td>- Vin (GND)</td> </tr> <tr> <td>5</td> <td>- Vout</td> <td>- Vout</td> </tr> <tr> <td>6</td> <td>No pin</td> <td>Common</td> </tr> <tr> <td>7</td> <td>+ Vout</td> <td>+ Vout</td> </tr> </tbody> </table>	Pin	Single output	Dual output	1	+ Vin (Vcc)	+ Vin (Vcc)	2	- Vin (GND)	- Vin (GND)	5	- Vout	- Vout	6	No pin	Common	7	+ Vout	+ Vout
		Pin	Single output	Dual output																
1	+ Vin (Vcc)	+ Vin (Vcc)																		
2	- Vin (GND)	- Vin (GND)																		
5	- Vout	- Vout																		
6	No pin	Common																		
7	+ Vout	+ Vout																		

TRV-1 Series ▶ 1 W



- ▶ Semi-regulated output (load)
- ▶ Industry standard pinout
- ▶ Very high efficiency up to 88%
- ▶ I/O isolation voltage 3000VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$



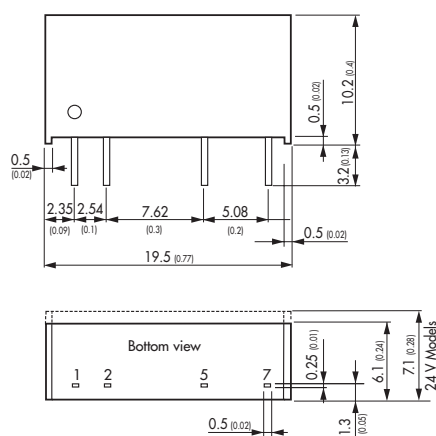
Specifications

Line regulation	non regulated
Load regulation (20- 100% load)	5% typ for 5V input models 3.5% typ for 12V & 24V input models
Ripple & Noise	<50 mVp-p (20 MHz BW)
Short circuit protection	limited 0.5 sec.
Efficiency	86% typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ (no derating)
I/O isolation voltage	3000VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/trv1.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TRV 1-0511		5 VDC	200 mA
TRV 1-0519	5 VDC \pm 10 %	9 VDC	110 mA
TRV 1-0512		12 VDC	84 mA
TRV 1-0513		15 VDC	67 mA
TRV 1-1211		5 VDC	200 mA
TRV 1-1219	12 VDC \pm 10 %	9 VDC	110 mA
TRV 1-1212		12 VDC	84 mA
TRV 1-1213		15 VDC	67 mA
TRV 1-2411		5 VDC	200 mA
TRV 1-2419	24 VDC \pm 10 %	9 VDC	110 mA
TRV 1-2412		12 VDC	84 mA
TRV 1-2413		15 VDC	67 mA

Dimensions



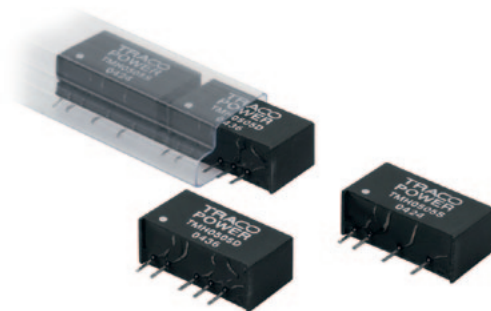
() = Inches

Pin

1	+ Vin (Vcc)
2	- Vin (GND)
5	- Vout
7	+ Vout

TMH Series ▶ 2 W

- ▶ Industry standard pinout
- ▶ Single and dual output models
- ▶ I/O isolation 1000VDC
- ▶ Operating temperature range -40 °C to +85 °C

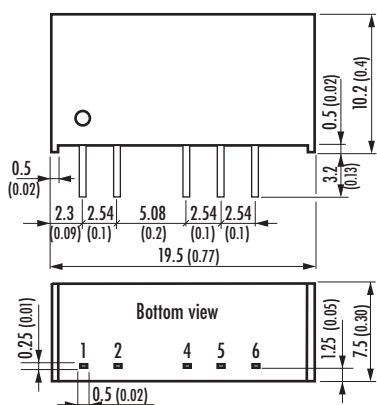


Specifications	
Line regulation	non regulated
Load regulation	10% max.
Ripple & noise (20 MHz BW)	< 75 mVpk-pk for 5 Vin models < 150 mVpk-pk for 12/24 Vin models
Short circuit protection	limited 1 sec.
Efficiency	81% typ. 5 VDC output models 78% typ.
Operating temperature range	-40 °C to +85 °C above 70°C derating 3%/K
I/O isolation voltage	1000VDC (60 sec.)
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tmh.pdf

Models			
Order code	Input voltage	Output voltage	Output current max.
TMH 0505S		5 VDC	400 mA
TMH 0512S		12 VDC	165 mA
TMH 0515S	5 VDC ± 10 %	15 VDC	130 mA
TMH 0505D		± 5 VDC	± 200 mA
TMH 0512D		± 12 VDC	± 80 mA
TMH 0515D		± 15 VDC	± 65 mA
TMH 1205S		5 VDC	400 mA
TMH 1212S		12 VDC	165 mA
TMH 1215S	12 VDC ± 10 %	15 VDC	130 mA
TMH 1205D		± 5 VDC	± 200 mA
TMH 1212D		± 12 VDC	± 80 mA
TMH 1215D		± 15 VDC	± 65 mA
TMH 2405S		5 VDC	400 mA
TMH 2412S		12 VDC	165 mA
TMH 2415S	24 VDC ± 10 %	15 VDC	130 mA
TMH 2405D		± 5 VDC	± 200 mA
TMH 2412D		± 12 VDC	± 80 mA
TMH 2415D		± 15 VDC	± 65 mA

For improved load regulation
see TRA-3 series page 24

Dimensions



() = Inches

Pin	Single output	Dual output
1	+ Vin (Vcc)	+ Vin (Vcc)
2	- Vin (GND)	- Vin (GND)
4	- Vout	- Vout
5	No pin	Common
6	+ Vout	+ Vout

TRA-3 Series ▶ 3 W



- ▶ Semi-regulated output (load)
- ▶ High power density in SIP package
- ▶ Very high efficiency up to 89%
- ▶ I/O isolation voltage 1000VDC
- ▶ Operating temperature range -40 °C to +85 °C



NEW
Product

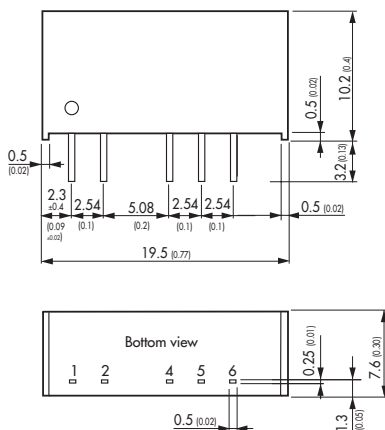
Specifications

Line regulation	non regulated
Load regulation (20- 100% load)	7% typ for 5V input models 5% typ for 12V & 24V input models
Ripple & Noise	60 mVp-p typ. (20 MHz BW)
Short circuit protection	limited 0.5 sec.
Efficiency	86 % typ.
Operating temperature range	-40 °C to +85 °C (no derating)
I/O isolation voltage	1000VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, reports pending
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tra3.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TRA 3-0511		5 VDC	600 mA
TRA 3-0519	5 VDC ± 10 %	9 VDC	333 mA
TRA 3-0512		12 VDC	250 mA
TRA 3-0513		15 VDC	200 mA
TRA 3-1211		5 VDC	600 mA
TRA 3-1219	12 VDC ± 10 %	9 VDC	333 mA
TRA 3-1212		12 VDC	250 mA
TRA 3-1213		15 VDC	200 mA
TRA 3-2411		5 VDC	600 mA
TRA 3-2419	24 VDC ± 10 %	9 VDC	333 mA
TRA 3-2412		12 VDC	250 mA
TRA 3-2413		15 VDC	200 mA

Dimensions



() = Inches

Pin

1	+ Vin (Vcc)
2	- Vin (GND)
4	- Vout
5	No pin
6	+ Vout

TMR-2E Series ▶ 2 W

- ▶ Miniature SIP package
- ▶ Wide 2:1 input range
- ▶ Fully regulated outputs
- ▶ High quality/cost performance
- ▶ I/O-isolation 1000VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Short circuit protection
- ▶ Remote On/Off



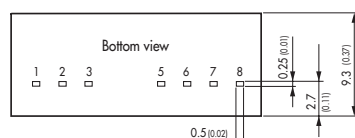
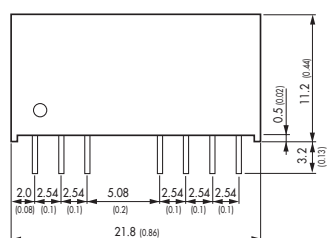
Specifications

Line regulation	0.5% max.
Load regulation	0.75% max.
Ripple & noise	<50 mVpk-pk (20 MHz BW) (no external output capacitor required)
Short circuit protection	continuous, automatic recovery
Efficiency	78% typ. 5 VDC input models: 70% typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $65\text{ }^{\circ}\text{C}$ derating 2.8 %/K
I/O isolation voltage	1000VDC (60 sec.)
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 (no report)
Remote On/Off	shutdown input for low input current (1 mA) in standby operation
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tmr2e.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TMR 2-0510E	4.5 – 9.0 VDC	3.3 VDC	500 mA
TMR 2-0511E		5 VDC	400 mA
TMR 2-0512E		12 VDC	167 mA
TMR 2-1210E	9 – 18 VDC	3.3 VDC	500 mA
TMR 2-1211E		5 VDC	400 mA
TMR 2-1212E		12 VDC	167 mA
TMR 2-2410E	18 – 36 VDC	3.3 VDC	500 mA
TMR 2-2411E		5 VDC	400 mA
TMR 2-2412E		12 VDC	167 mA
TMR 2-4810E	36 – 75 VDC	3.3 VDC	500 mA
TMR 2-4811E		5 VDC	400 mA
TMR 2-4812E		12 VDC	167 mA

Dimensions



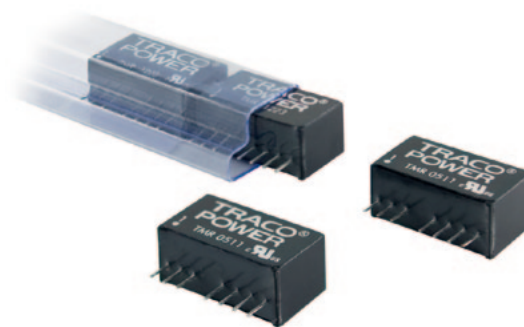
() = Inches

Pin	Single output
1	- Vin (GND)
2	+ Vin (Vcc)
3	Remote On/Off
5	No con.
6	+ Vout
7	- Vout
8	No con.

TMR-2 Series ▶ 2 W

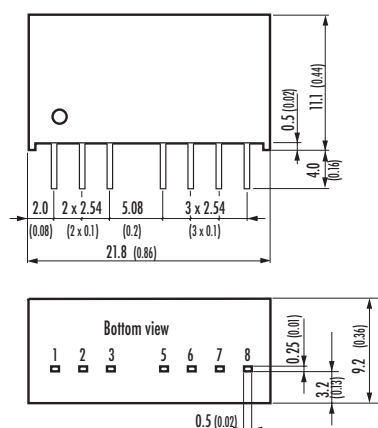


- ▶ Miniature SIP package
- ▶ Wide 2:1 input range
- ▶ Fully regulated outputs
- ▶ Single and dual output models
- ▶ I/O isolation 1000VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ without derating
- ▶ Low ripple and noise
- ▶ Short circuit protection
- ▶ Remote On/Off



Specifications		Models			
Line regulation	0.5% max.	Order code	Input voltage	Output voltage	Output current max.
Load regulation	- Single output models: 0.75% max. - Dual output models: 1.0% max.	TMR 0510		3.3 VDC	500 mA
Ripple & noise	<50 mVpk-pk (20 MHz BW) (no external output capacitor required)	TMR 0511		5 VDC	400 mA
Short circuit protection	continuous, automatic recovery	TMR 0512	4.5 – 9.0 VDC	12 VDC	165 mA
Efficiency	82% typ. 5 VDC input models: 80% typ.	TMR 0521		± 5 VDC	± 200 mA
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ (without derating)	TMR 0522		± 12 VDC	± 85 mA
I/O isolation voltage	1000VDC (60 sec.)	TMR 0523		± 15 VDC	± 65 mA
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1	TMR 1210		3.3 VDC	500 mA
Remote On/Off	shutdown input for low input current (1 mA) in standby operation	TMR 1211		5 VDC	400 mA
Casing	plastic (UL 94 V-0 rated)	TMR 1212	9 – 18 VDC	12 VDC	165 mA
Full datasheet	www.tracopower.com/products/tmr.pdf	TMR 1221		± 5 VDC	± 200 mA
		TMR 1222		± 12 VDC	± 85 mA
		TMR 1223		± 15 VDC	± 65 mA
		TMR 2410		3.3 VDC	500 mA
		TMR 2411		5 VDC	400 mA
		TMR 2412	18 – 36 VDC	12 VDC	165 mA
		TMR 2421		± 5 VDC	± 200 mA
		TMR 2422		± 12 VDC	± 85 mA
		TMR 2423		± 15 VDC	± 65 mA
		TMR 4810		3.3 VDC	500 mA
		TMR 4811		5 VDC	400 mA
		TMR 4812	36 – 75 VDC	12 VDC	165 mA
		TMR 4821		± 5 VDC	± 200 mA
		TMR 4822		± 12 VDC	± 85 mA
		TMR 4823		± 15 VDC	± 65 mA

Dimensions

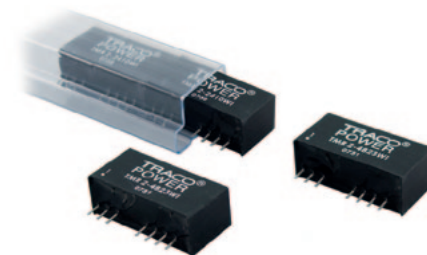


() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	+ Vin (Vcc)	+ Vin (Vcc)
3	Remote On/Off	Remote On/Off
5	No con.	No con.
6	+ Vout	+ Vout
7	- Vout	Common
8	No con.	- Vout

TMR-2WI Series ▶ 2 W

- ▶ Ultra wide 4:1 input range
- ▶ Fully regulated outputs
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Short circuit protection
- ▶ Remote On/Off



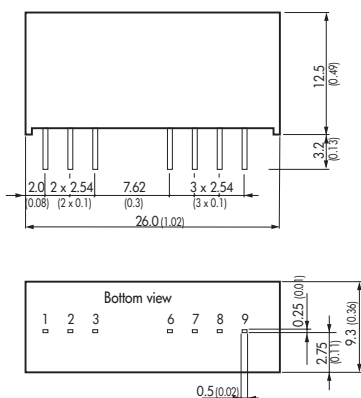
Specifications

Line regulation	0.5 % max.
Load regulation	- Single output models: 0.75 % max. - Dual output models: 1.0 % max.
Ripple & noise	<50 mVpk-pk (20 MHz BW) (no external output capacitor required)
Short circuit protection	continuous, automatic recovery
Efficiency	78 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.3 %/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 (no report)
Remote On/Off	shutdown input for low input current (1 mA) in standby operation
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tmr2wi.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TMR 2-2410WI		3.3 VDC	500 mA
TMR 2-2411WI		5 VDC	400 mA
TMR 2-2412WI		12 VDC	165 mA
TMR 2-2413WI	9 – 36 VDC	15 VDC	135 mA
TMR 2-2421WI		± 5 VDC	± 200 mA
TMR 2-2422WI		± 12 VDC	± 85 mA
TMR 2-2423WI		± 15 VDC	± 65 mA
TMR 2-4810WI		3.3 VDC	500 mA
TMR 2-4811WI		5 VDC	400 mA
TMR 2-4812WI		12 VDC	165 mA
TMR 2-4813WI	18 – 75 VDC	15 VDC	135 mA
TMR 2-4821WI		± 5 VDC	± 200 mA
TMR 2-4822WI		± 12 VDC	± 85 mA
TMR 2-4823WI		± 15 VDC	± 65 mA

Dimensions

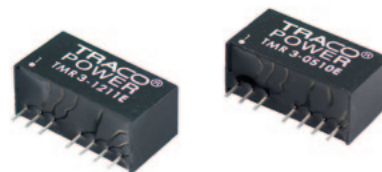


() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	+ Vin (Vcc)	+ Vin (Vcc)
3	Remote On/Off	Remote On/Off
6	+ Vout	+ Vout
7	No con.	Common
8	No con.	No con.
9	- Vout	- Vout

TMR-3E Series ▶ 3 W

- ▶ Miniature SIP package
- ▶ Wide 2:1 input range
- ▶ Fully regulated outputs
- ▶ Single and dual output models
- ▶ High quality/cost performance
- ▶ I/O-isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Short circuit protection
- ▶ Remote On/Off



NEW
Product

Specifications		Models			
Line regulation	0.5% max.	Order code	Input voltage	Output voltage	Output current max.
Load regulation	1.0% max.	TMR 3-0510E		3.3 VDC	700 mA
Ripple & noise	<75 mVpk-pk (20 MHz BW)	TMR 3-0511E		5 VDC	600 mA
Short circuit protection	continuous, automatic recovery	TMR 3-0512E		12 VDC	250 mA
Efficiency	78% typ. 5 VDC input models: 73% typ.	TMR 3-0513E	4.5 – 9 VDC	15 VDC	200 mA
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.3 %/K	TMR 3-0521E		$\pm 5\text{ VDC}$	$\pm 300\text{ mA}$
I/O isolation voltage	1500VDC (60 sec.)	TMR 3-0522E		$\pm 12\text{ VDC}$	$\pm 125\text{ mA}$
Safety standards	UL 60950-1, IEC/EN 60950-1 (no report)	TMR 3-0523E		$\pm 15\text{ VDC}$	$\pm 100\text{ mA}$
Remote On/Off	shutdown input for low input current (1 mA) in standby operation	TMR 3-1210E		3.3 VDC	700 mA
Casing	plastic (UL 94 V-0 rated)	TMR 3-1211E		5 VDC	600 mA
Full datasheet	www.tracopower.com/products/tmr3e.pdf	TMR 3-1212E		12 VDC	250 mA
		TMR 3-1213E	9 – 18 VDC	15 VDC	200 mA
		TMR 3-1221E		$\pm 5\text{ VDC}$	$\pm 300\text{ mA}$
		TMR 3-1222E		$\pm 12\text{ VDC}$	$\pm 125\text{ mA}$
		TMR 3-1223E		$\pm 15\text{ VDC}$	$\pm 100\text{ mA}$
		TMR 3-2410E		3.3 VDC	700 mA
		TMR 3-2411E		5 VDC	600 mA
		TMR 3-2412E		12 VDC	250 mA
		TMR 3-2413E	18 – 36 VDC	15 VDC	200 mA
		TMR 3-2421E		$\pm 5\text{ VDC}$	$\pm 300\text{ mA}$
		TMR 3-2422E		$\pm 12\text{ VDC}$	$\pm 125\text{ mA}$
		TMR 3-2423E		$\pm 15\text{ VDC}$	$\pm 100\text{ mA}$
		TMR 3-4810E		3.3 VDC	700 mA
		TMR 3-4811E		5 VDC	600 mA
		TMR 3-4812E		12 VDC	250 mA
		TMR 3-4813E	36 – 75 VDC	15 VDC	200 mA
		TMR 3-4821E		$\pm 5\text{ VDC}$	$\pm 300\text{ mA}$
		TMR 3-4822E		$\pm 12\text{ VDC}$	$\pm 125\text{ mA}$
		TMR 3-4823E		$\pm 15\text{ VDC}$	$\pm 100\text{ mA}$

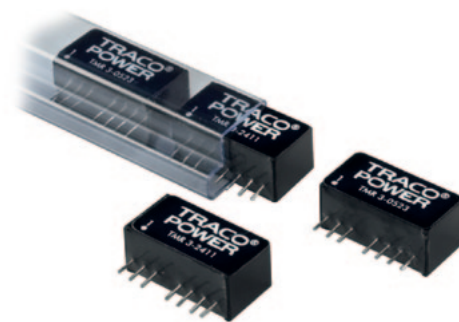
Dimensions		Pin		
		Pin	Single output	Dual output
		1	- Vin (GND)	- Vin (GND)
	2	+ Vin (Vcc)	+ Vin (Vcc)	
	3	Remote On/Off	Remote On/Off	
	5	No con.	No con.	
	6	+ Vout	+ Vout	
	7	- Vout	Common	
	8	No con.	- Vout	

TMR-3 & TMR-3HI Series ▶ 3 W



- ▶ Wide 2:1 input range
- ▶ Fully regulated outputs
- ▶ Models with 1'500 VDC and 3'000 VDC I/O isolation (functional insulation)
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ No minimum load required
- ▶ Short circuit protection
- ▶ Remote On/Off

NEW
Models with
3000VDC
I/O isolation



Specifications

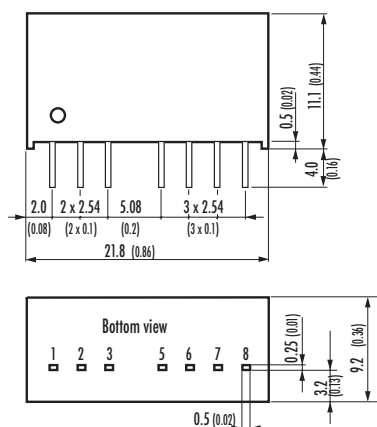
Line regulation	0.2% max.
Load regulation	- Single output models: 0.5% max. - Dual output models: 1.0% max.
Ripple & noise	<75 mVpk-pk (20 MHz BW) no external output capacitor required
Short circuit protection	continuous, automatic recovery
Efficiency	79% typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.3%/K
I/O isolation voltage	1500VDC or 3000 VDC with suffix-HI (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tmr3.pdf

Models

Order code *	Input voltage	Output voltage	Output current max.
TMR 3-0510	4.5 – 9.0 VDC	3.3 VDC	700 mA
TMR 3-0511		5 VDC	600 mA
TMR 3-0512		12 VDC	250 mA
TMR 3-0513	9 – 18 VDC	15 VDC	200 mA
TMR 3-0521		± 5 VDC	± 300 mA
TMR 3-0522		± 12 VDC	± 125 mA
TMR 3-0523	18 – 36 VDC	± 15 VDC	± 100 mA
TMR 3-1210		3.3 VDC	700 mA
TMR 3-1211		5 VDC	600 mA
TMR 3-1212	36 – 75 VDC	12 VDC	250 mA
TMR 3-1213		15 VDC	200 mA
TMR 3-1221		± 5 VDC	± 300 mA
TMR 3-1222	36 – 75 VDC	± 12 VDC	± 125 mA
TMR 3-1223		± 15 VDC	± 100 mA
TMR 3-2410		3.3 VDC	700 mA
TMR 3-2411	18 – 36 VDC	5 VDC	600 mA
TMR 3-2412		12 VDC	250 mA
TMR 3-2413		15 VDC	200 mA
TMR 3-2421	36 – 75 VDC	± 5 VDC	± 300 mA
TMR 3-2422		± 12 VDC	± 125 mA
TMR 3-2423		± 15 VDC	± 100 mA
TMR 3-4810	36 – 75 VDC	3.3 VDC	700 mA
TMR 3-4811		5 VDC	600 mA
TMR 3-4812		12 VDC	250 mA
TMR 3-4813	36 – 75 VDC	15 VDC	200 mA
TMR 3-4821		± 5 VDC	± 300 mA
TMR 3-4822		± 12 VDC	± 125 mA
TMR 3-4823	36 – 75 VDC	± 15 VDC	± 100 mA

* For models with 3000 VDC I/O isolation add suffix HI

Dimensions

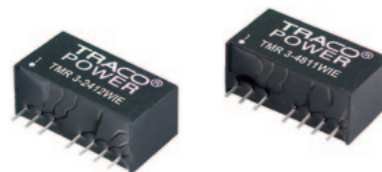


() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	+ Vin (Vcc)	+ Vin (Vcc)
3	Remote On/Off	Remote On/Off
5	No con.	No con.
6	+ Vout	+ Vout
7	- Vout	Common
8	No con.	- Vout

TMR-3WIE Series ▶ 3 W

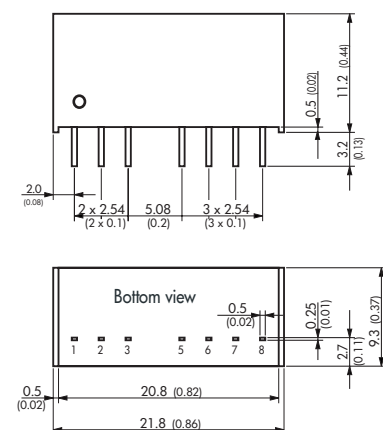
- ▶ Miniature SIP package
- ▶ Ultra wide 4:1 input range
- ▶ High quality/cost performance
- ▶ Fully regulated outputs
- ▶ I/O-isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Short circuit protection
- ▶ Remote On/Off



NEW
Product

Specifications		Models			
Line regulation	0.5% max.	Order code	Input voltage	Output voltage	Output current max.
Load regulation	1.0% max. (25-100% load)	TMR 3-1210WIE		3.3 VDC	700 mA
Ripple & noise	<75 mVpk-pk (20 MHz BW)	TMR 3-1211WIE		5 VDC	600 mA
Short circuit protection	continuous, automatic recovery	TMR 3-1212WIE		12 VDC	250 mA
Efficiency	78% typ. 5 VDC input models: 74% typ.	TMR 3-1213WIE	4.5 – 18 VDC	15 VDC	200 mA
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.3 %/K	TMR 3-1221WIE		$\pm 5\text{ VDC}$	$\pm 300\text{ mA}$
I/O isolation voltage	1500VDC (60 sec.)	TMR 3-1222WIE		$\pm 12\text{ VDC}$	$\pm 125\text{ mA}$
Safety standards	UL 60950-1, IEC/EN 60950-1 (no report)	TMR 3-1223WIE		$\pm 15\text{ VDC}$	$\pm 100\text{ mA}$
Remote On/Off	shutdown input for low input current (1 mA) in standby operation	TMR 3-2410WIE		3.3 VDC	700 mA
Casing	plastic (UL 94 V-0 rated)	TMR 3-2411WIE		5 VDC	600 mA
Full datasheet	www.tracopower.com/products/tmr3wie.pdf	TMR 3-2412WIE		12 VDC	250 mA
		TMR 3-2413WIE	9 – 36 VDC	15 VDC	200 mA
		TMR 3-2421WIE		$\pm 5\text{ VDC}$	$\pm 300\text{ mA}$
		TMR 3-2422WIE		$\pm 12\text{ VDC}$	$\pm 125\text{ mA}$
		TMR 3-2423WIE		$\pm 15\text{ VDC}$	$\pm 100\text{ mA}$
		TMR 3-4810WIE		3.3 VDC	700 mA
		TMR 3-4811WIE		5 VDC	600 mA
		TMR 3-4812WIE		12 VDC	250 mA
		TMR 3-4813WIE	18 – 75 VDC	15 VDC	200 mA
		TMR 3-4821WIE		$\pm 5\text{ VDC}$	$\pm 300\text{ mA}$
		TMR 3-4822WIE		$\pm 12\text{ VDC}$	$\pm 125\text{ mA}$
		TMR 3-4823WIE		$\pm 15\text{ VDC}$	$\pm 100\text{ mA}$

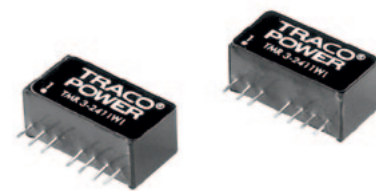
Dimensions



Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	+ Vin (Vcc)	+ Vin (Vcc)
3	Remote On/Off	Remote On/Off
5	No con.	No con.
6	+ Vout	+ Vout
7	- Vout	Common
8	No con.	- Vout

TMR-3WI Series ▶ 3 W

- ▶ Miniature SIP package
- ▶ Ultra wide 4:1 input range
- ▶ Fully regulated outputs
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ No minimum load required
- ▶ Low ripple and noise
- ▶ Short circuit protection
- ▶ Remote On/Off



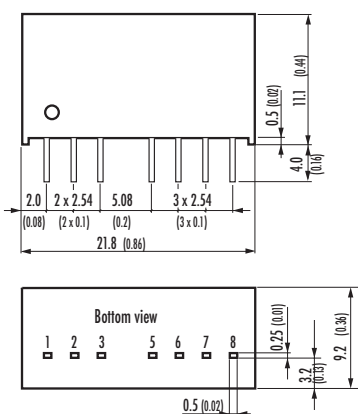
Specifications

Line regulation	0.2% max.
Load regulation	1.0% max.
Ripple & noise	30 mVpk-pk typ. (20 MHz BW)
Short circuit protection	continuous, automatic recovery
Efficiency	80% typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.3 %/K
I/O isolation voltage	1500VDC (60 sec.)
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 (no report)
Remote On/Off	shutdown input for low input current (1 mA) in standby operation
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tmr3wi.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TMR 3-1210WI		3.3 VDC	700 mA
TMR 3-1211WI		5 VDC	600 mA
TMR 3-1212WI		12 VDC	250 mA
TMR 3-1213WI	4.5 – 18 VDC	15 VDC	200 mA
TMR 3-1221WI		± 5 VDC	± 300 mA
TMR 3-1222WI		± 12 VDC	± 125 mA
TMR 3-1223WI		± 15 VDC	± 100 mA
TMR 3-2410WI		3.3 VDC	700 mA
TMR 3-2411WI		5 VDC	600 mA
TMR 3-2412WI		12 VDC	250 mA
TMR 3-2413WI	9 – 36 VDC	15 VDC	200 mA
TMR 3-2421WI		± 5 VDC	± 300 mA
TMR 3-2422WI		± 12 VDC	± 125 mA
TMR 3-2423WI		± 15 VDC	± 100 mA
TMR 3-4810WI		3.3 VDC	700 mA
TMR 3-4811WI		5 VDC	600 mA
TMR 3-4812WI		12 VDC	250 mA
TMR 3-4813WI	18 – 75 VDC	15 VDC	200 mA
TMR 3-4821WI		± 5 VDC	± 300 mA
TMR 3-4822WI		± 12 VDC	± 125 mA
TMR 3-4823WI		± 15 VDC	± 100 mA

Dimensions



() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	+ Vin (Vcc)	+ Vin (Vcc)
3	Remote On/Off	Remote On/Off
5	No con.	No con.
6	+ Vout	+ Vout
7	- Vout	Common
8	No con.	- Vout

TMR-6 Series ▶ 6 W



- ▶ Highest power density in SIP package
- ▶ Smallest footprint 6W converter
- ▶ Wide 2:1 input range
- ▶ Fully regulated outputs
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range -40 °C to +85 °C
- ▶ No minimum load required
- ▶ Input under voltage lockout
- ▶ Optional metal case with case pin connection
- ▶ Short circuit protection
- ▶ Remote On/Off



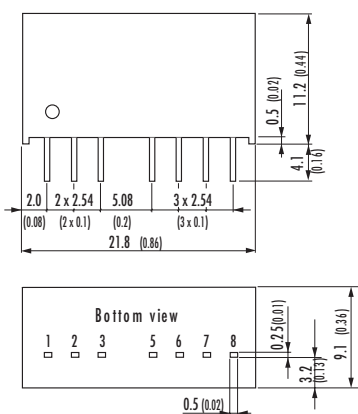
NEW
Product

Specifications	
Line regulation	0.2 % max.
Load regulation	1 % max.
Ripple & noise	<50 mVpk-pk (20 MHz BW) no external output capacitor required
Short circuit protection	continuous, automatic recovery
Efficiency	83 % typ.
Operating temperature range	-40 °C to +70 °C above 55 °C derating 3.3 %/K
I/O isolation voltage	1500VDC (60 sec.)
Safety standards / approvals	CUL/UL 60950-1, IEC/EN 60950-1, reports pending
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	plastic (UL 94 V-0 rated), Metal case on demand
Full datasheet	www.tracopower.com/products/tmr6.pdf

Models			
Order code	Input voltage	Output voltage	Output current max.
TMR 6-0510		3.3 VDC	1300 mA
TMR 6-0511		5 VDC	1200 mA
TMR 6-0512		12 VDC	500 mA
TMR 6-0513	4.5 – 9 VDC	15 VDC	400 mA
TMR 6-0521		± 5 VDC	± 600 mA
TMR 6-0522		± 12 VDC	± 250 mA
TMR 6-0523		± 15 VDC	± 200 mA
TMR 6-1210		3.3 VDC	1300 mA
TMR 6-1211		5 VDC	1200 mA
TMR 6-1212		12 VDC	500 mA
TMR 6-1213	9 – 18 VDC	15 VDC	400 mA
TMR 6-1221		± 5 VDC	± 600 mA
TMR 6-1222		± 12 VDC	± 250 mA
TMR 6-1223		± 15 VDC	± 200 mA
TMR 6-2410		3.3 VDC	1300 mA
TMR 6-2411		5 VDC	1200 mA
TMR 6-2412		12 VDC	500 mA
TMR 6-2413	18 – 36 VDC	15 VDC	400 mA
TMR 6-2421		± 5 VDC	± 600 mA
TMR 6-2422		± 12 VDC	± 250 mA
TMR 6-2423		± 15 VDC	± 200 mA
TMR 6-4810		3.3 VDC	1300 mA
TMR 6-4811		5 VDC	1200 mA
TMR 6-4812		12 VDC	500 mA
TMR 6-4813	36 – 75 VDC	15 VDC	400 mA
TMR 6-4821		± 5 VDC	± 600 mA
TMR 6-4822		± 12 VDC	± 250 mA
TMR 6-4823		± 15 VDC	± 200 mA

On demand: Modules with metal casing

Dimensions



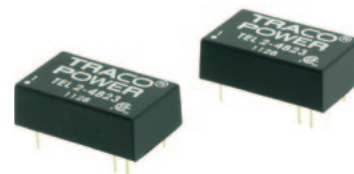
() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	+ Vin (Vcc)	+ Vin (Vcc)
3	Remote On/Off	Remote On/Off
5	No con.	No con.
6	+ Vout	+ Vout
7	- Vout	Common
8	No con.	- Vout

TEL-2 Series ▶ 2 W



- ▶ Compact DIP-16 package
- ▶ Wide 2:1 input voltage range
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+75\text{ }^{\circ}\text{C}$
- ▶ Input filter to meet EN 55022, Class A
- ▶ Cost optimized design



Specifications

Line regulation	0.5 % max.
Load regulation	- Single output models: 0.75 % max. - Dual output models: 2.0 % max.
Ripple & Noise	<50 mVpk-pk (20 MHz BW)
Conducted EMI	EN55022, class A and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	78 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+75\text{ }^{\circ}\text{C}$ above $65\text{ }^{\circ}\text{C}$ derating 2.8 %/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, CB-report
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tel2.pdf

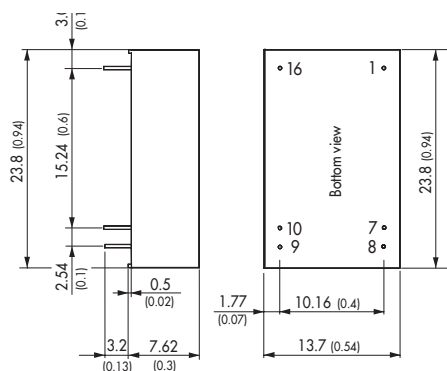
Models

Order code	Input voltage	Output voltage	Output current max.
TEL 2-0510		3.3 VDC	500 mA
TEL 2-0511		5 VDC	400 mA
TEL 2-0512		12 VDC	165 mA
TEL 2-0513	4.5 – 9.0 VDC	15 VDC	135 mA
TEL 2-0521		± 5 VDC	± 200 mA
TEL 2-0522		± 12 VDC	± 85 mA
TEL 2-0523		± 15 VDC	± 65 mA
TEL 2-1210		3.3 VDC	500 mA
TEL 2-1211		5 VDC	400 mA
TEL 2-1212		12 VDC	165 mA
TEL 2-1213	9 – 18 VDC	15 VDC	135 mA
TEL 2-1221		± 5 VDC	± 200 mA
TEL 2-1222		± 12 VDC	± 85 mA
TEL 2-1223		± 15 VDC	± 65 mA
TEL 2-2410		3.3 VDC	500 mA
TEL 2-2411		5 VDC	400 mA
TEL 2-2412		12 VDC	165 mA
TEL 2-2413	18 – 36 VDC	15 VDC	135 mA
TEL 2-2421		± 5 VDC	± 200 mA
TEL 2-2422		± 12 VDC	± 85 mA
TEL 2-2423		± 15 VDC	± 65 mA
TEL 2-4810		3.3 VDC	500 mA
TEL 2-4811		5 VDC	400 mA
TEL 2-4812		12 VDC	165 mA
TEL 2-4813	36 – 75 VDC	15 VDC	135 mA
TEL 2-4821		± 5 VDC	± 200 mA
TEL 2-4822		± 12 VDC	± 85 mA
TEL 2-4823		± 15 VDC	± 65 mA

Product with same electrical specifications available in SMD package.

See TES-2N series page 12

Dimensions



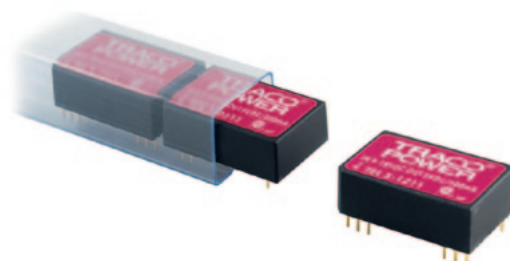
() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
7	No con.	No con.
8	No con.	Common
9	+ Vout	+ Vout
10	- Vout	- Vout
16	+ Vin	+ Vin

TEL-3 Series ▶ 3 W



- ▶ Wide 2:1 input range
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Cost optimized design



Specifications		Models			
Line regulation	0.5 % max.	Order code	Input voltage	Output voltage	Output current max.
Load regulation	– Single output models: 0.5% max. – Dual output models: 1.0% max.	TEL 3-0511		5 VDC	600 mA
Ripple & Noise	<60 mVpk-pk (20 MHz BW)	TEL 3-0512		12 VDC	250 mA
Input filter	Pi-filter	TEL 3-0513	4.5 – 9.0 VDC	15 VDC	200 mA
Short circuit protection	continuous, automatic recovery	TEL 3-0522		± 12 VDC	± 125 mA
Efficiency	80 % typ.	TEL 3-0523		± 15 VDC	± 100 mA
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.3 %/K	TEL 3-1211		5 VDC	600 mA
I/O isolation voltage	1500 VDC (60 sec.)	TEL 3-1212		12 VDC	250 mA
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, CB-report	TEL 3-1213	9 – 18 VDC	15 VDC	200 mA
Casing	plastic (UL 94 V-0 rated)	TEL 3-1222		± 12 VDC	± 125 mA
Full datasheet	www.tracopower.com/products/tel3.pdf	TEL 3-1223		± 15 VDC	± 100 mA
		TEL 3-2011		5 VDC	600 mA
		TEL 3-2012		12 VDC	250 mA
		TEL 3-2013	10 – 30 VDC	15 VDC	200 mA
		TEL 3-2022		± 12 VDC	± 125 mA
		TEL 3-2023		± 15 VDC	± 100 mA
		TEL 3-2411		5 VDC	600 mA
		TEL 3-2412		12 VDC	250 mA
		TEL 3-2413	18 – 36 VDC	15 VDC	200 mA
		TEL 3-2422		± 12 VDC	± 125 mA
		TEL 3-2423		± 15 VDC	± 100 mA
		TEL 3-4811		5 VDC	600 mA
		TEL 3-4812		12 VDC	250 mA
		TEL 3-4813	36 – 75 VDC	15 VDC	200 mA
		TEL 3-4822		± 12 VDC	± 125 mA
		TEL 3-4823		± 15 VDC	± 100 mA
Dimensions		Pin			
<p>Top view dimensions: 32 (1.25) total height, 27.94 (1.1) to top pins, 17.78 (0.7) to bottom pins, 2.54 (0.1) pin spacing, 4.5 (0.18) to bottom pins, 10.2 (0.4) to bottom pins.</p> <p>Bottom view dimensions: 2.4 (0.1) pin spacing, 15.24 (0.6) to pins 1-3, 20 (0.79) total width.</p> <p>Pin 1: 24, Pin 2: 23, Pin 3: 22, Pin 10: 15, Pin 11: 14, Pin 12: 13.</p>		Single output			
		Dual output			
		1	+ Vin (Vcc)	+ Vin (Vcc)	
		2	No con.	- Vout	
		3	No con.	Common	
		10	- Vout	Common	
		11	+ Vout	+ Vout	
		12	- Vin (GND)	- Vin (GND)	
		13	- Vin (GND)	- Vin (GND)	
		14	+ Vout	+ Vout	
		15	- Vout	Common	
		22	No con.	Common	
		23	No con.	- Vout	
		24	+ Vin (Vcc)	+ Vin (Vcc)	

() = Inches

THL-3WI Series ▶ 3 W



- ▶ Ultra wide 4:1 input voltage range
- ▶ Fully regulated outputs
- ▶ I/O-isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Input filter to meet EN 55022, class A
- ▶ Remote On/Off



Specifications

Line regulation	0.5% max.
Load regulation	1.5% max.
Ripple & noise	<60 mVpk-pk (20 MHz BW)
Conducted EMI	EN55022, class A, and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	81 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $65\text{ }^{\circ}\text{C}$ derating 2.9%/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low input current (5 mA) in standby operation
Casing	Epoxy molded (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/thl3wi.pdf

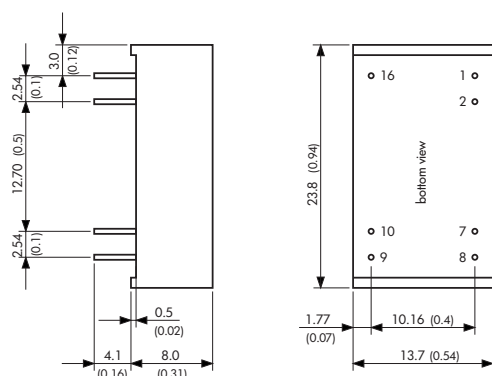
Models

Order code	Input voltage	Output voltage	Output current max.
THL 3-2410WI		3.3 VDC	600 mA
THL 3-2411WI		5 VDC	600 mA
THL 3-2412WI		12 VDC	250 mA
THL 3-2413WI	9 – 36 VDC	15 VDC	200 mA
THL 3-2415WI		24 VDC	125 mA
THL 3-2421WI		$\pm 5\text{ VDC}$	$\pm 300\text{ mA}$
THL 3-2422WI		$\pm 12\text{ VDC}$	$\pm 125\text{ mA}$
THL 3-2423WI		$\pm 15\text{ VDC}$	$\pm 100\text{ mA}$
THL 3-4810WI		3.3 VDC	600 mA
THL 3-4811WI		5 VDC	600 mA
THL 3-4812WI		12 VDC	250 mA
THL 3-4813WI	18 – 75 VDC	15 VDC	200 mA
THL 3-4815WI		24 VDC	125 mA
THL 3-4821WI		$\pm 5\text{ VDC}$	$\pm 300\text{ mA}$
THL 3-4822WI		$\pm 12\text{ VDC}$	$\pm 125\text{ mA}$
THL 3-4823WI		$\pm 15\text{ VDC}$	$\pm 100\text{ mA}$

Product with same electrical specifications available in SMD package.

See THL-3WISM series page 15

Dimensions



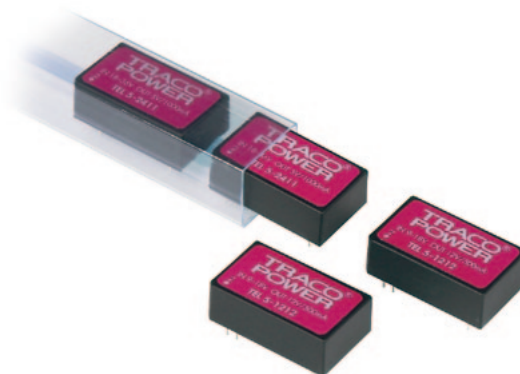
() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	Remote On/Off	Remote On/Off
7	No con.	No con.
8	No con.	Common
9	+ Vout	+ Vout
10	- Vout	- Vout
16	+ Vin (Vcc)	+ Vin (Vcc)

TEL-5 Series ▶ 5-6 W

CB  Scheme C US
UL 60950-1

- ▶ Wide 2:1 input range
- ▶ High efficiency up to 86 %
- ▶ I/O isolation 1500 VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Industry standard pinout
- ▶ Cost optimized design



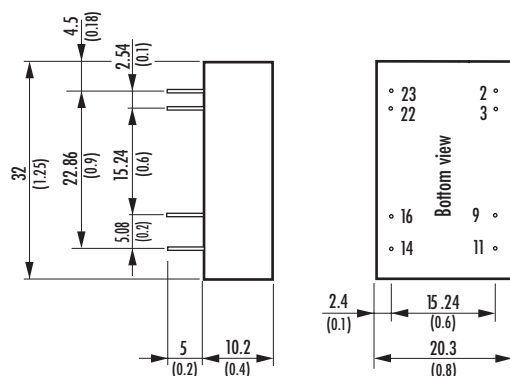
Specifications

Line regulation	0.3 % max.
Load regulation	- Single output models: 1.0% max. - Dual output models: 2.0% max.
Ripple & noise	<75 mVpk-pk (20 MHz BW)
Input filter	Pi-filter
Short circuit protection	continuous, automatic recovery
Efficiency	84 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.3 %/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, CB-report
Casing	plastic (UL 94V-0 rated)
Full datasheet	www.tracopower.com/products/tel5.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TEL 5-1210		3.3 VDC	1200 mA
TEL 5-1211		5 VDC	1000 mA
TEL 5-1212	9 – 18 VDC	12 VDC	500 mA
TEL 5-1222		$\pm 12\text{ VDC}$	$\pm 250\text{ mA}$
TEL 5-1223		$\pm 15\text{ VDC}$	$\pm 200\text{ mA}$
TEL 5-2410		3.3 VDC	1200 mA
TEL 5-2411		5 VDC	1000 mA
TEL 5-2412	18 – 36 VDC	12 VDC	500 mA
TEL 5-2422		$\pm 12\text{ VDC}$	$\pm 250\text{ mA}$
TEL 5-2423		$\pm 15\text{ VDC}$	$\pm 200\text{ mA}$

Dimensions



() = Inches

Pin	Single output	Dual output
2	- Vin (GND)	- Vin (GND)
3	- Vin (GND)	- Vin (GND)
9	No pin	Common
11	No con.	- Vout
14	+ Vout	+ Vout
16	- Vout	Common
22	+ Vin (Vcc)	+ Vin (Vcc)
23	+ Vin (Vcc)	+ Vin (Vcc)

THL-10WI Series ▶ 10 W



- ▶ 1" x 1" x 0.4" metal package
- ▶ Ultra wide 4:1 input voltage range
- ▶ High efficiency up to 87 %
- ▶ I/O-isolation 1500 VDC
- ▶ Input filter to meet EN 55022, class A
- ▶ Remote On/Off
- ▶ Industry standard pinout



Specifications

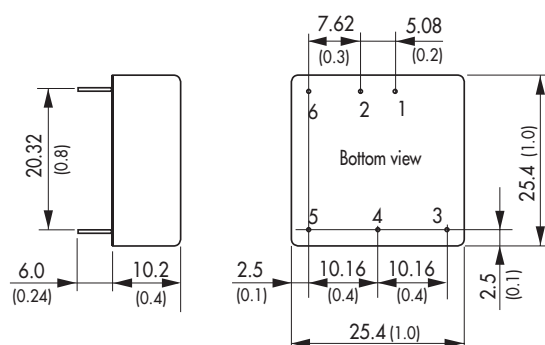
Line regulation	1% max.
Load regulation	- Single output models: 1.0% max. - Dual output models: 2.0% max.
Ripple & noise	<100 mVpk-pk (20 MHz BW)
Conducted EMI	EN 55022, class A and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	86% typ.
Operating temperature range	-40 °C to +75 °C above 60°C derating 2.5%/K - optional heatsink for extended temp.: see datasheet
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards/ approvals	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low current (10 mA) in standby operation
Casing	metal, with insulated baseplate
Full datasheet	www.tracopower.com/products/thl10wi.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
THL 10-2410WI		3.3 VDC	2200 mA
THL 10-2411WI		5.1 VDC	2000 mA
THL 10-2412WI		12 VDC	830 mA
THL 10-2413WI	9 – 36 VDC	15 VDC	660 mA
THL 10-2415WI		24 VDC	410 mA
THL 10-2421WI		± 5 VDC	± 1000 mA
THL 10-2422WI		± 12 VDC	± 410 mA
THL 10-2423WI		± 15 VDC	± 330 mA
THL 10-4810WI		3.3 VDC	2200 mA
THL 10-4811WI		5.1 VDC	2000 mA
THL 10-4812WI		12 VDC	830 mA
THL 10-4813WI	18 – 75 VDC	15 VDC	660 mA
THL 10-4815WI		24 VDC	410 mA
THL 10-4821WI		± 5 VDC	± 1000 mA
THL 10-4822WI		± 12 VDC	± 410 mA
THL 10-4823WI		± 15 VDC	± 330 mA

Optional heatsink: THL-HS1

Dimensions



() = Inches

Pin	Single output	Dual output
1	+ Vin (Vcc)	+ Vin (Vcc)
2	- Vin (GND)	- Vin (GND)
3	+ Vout	+ Vout
4	No pin	Common
5	- Vout	- Vout
6	Remote On/Off	Remote On/Off

TEL-15 Series ▶ 15 W



- ▶ Wide 2:1 input range
- ▶ I/O isolation 1500 VDC
- ▶ Industry standard pinout
- ▶ Cost optimized design



Specifications

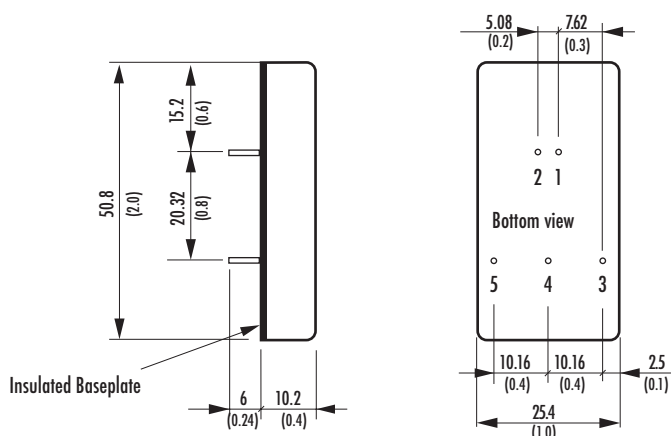
Line regulation	1.0% max.
Load regulation	– Single output models: 0.5% max. – Dual output models: 2.0% max.
Ripple & noise	<75 mVpk-pk (20 MHz BW)
Input filter	Pi-filter
Short circuit protection	continuous, automatic recovery
Efficiency	86% typ.
Operating temperature range	–40 °C to +71 °C above 60 °C derating 2.5 %/K – optional heatsink for extended temp.: see datasheet
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, CB-report
Casing	metal, 6-side shielded with insulated baseplate
Full datasheet	www.tracopower.com/products/tel15.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TEL 15-1210		3.3 VDC	3000 mA
TEL 15-1211		5.1 VDC	3000 mA
TEL 15-1212	9 – 18 VDC	12 VDC	1250 mA
TEL 15-1213		15 VDC	1000 mA
TEL 15-1222		± 12 VDC	± 625 mA
TEL 15-1223		± 15 VDC	± 500 mA
TEL 15-2410		3.3 VDC	3000 mA
TEL 15-2411		5.1 VDC	3000 mA
TEL 15-2412	18 – 36 VDC	12 VDC	1250 mA
TEL 15-2413		15 VDC	1000 mA
TEL 15-2422		± 12 VDC	± 625 mA
TEL 15-2423		± 15 VDC	± 500 mA
TEL 15-4810		3.3 VDC	3000 mA
TEL 15-4811		5.1 VDC	3000 mA
TEL 15-4812	36 – 75 VDC	12 VDC	1250 mA
TEL 15-4813		15 VDC	1000 mA
TEL 15-4822		± 12 VDC	± 625 mA
TEL 15-4823		± 15 VDC	± 500 mA

Optional heatsink: **TEN-H54**

Dimensions



() = Inches

Pin	Single output	Dual output
1	+ Vin (Vcc)	+ Vin (Vcc)
2	– Vin (GND)	– Vin (GND)
3	+ Vout	+ Vout
4	No pin	Common
5	– Vout	– Vout

THL-20WI Series ▶ 20 W



- ▶ High power density 20 W converter
- ▶ 1" x 1" x 0.4" metal package
- ▶ Ultra wide 4:1 input voltage range
- ▶ I/O isolation 1500 VDC
- ▶ Remote On/Off
- ▶ Adjustable output voltage
- ▶ Industry standard pinout



Specifications

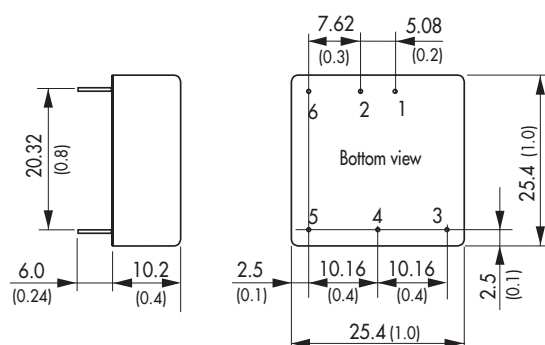
Line regulation	1% max.
Load regulation	- Single output models: 1.0% max. - Dual output models: 2.0% max.
Output voltage adjustment	±10% by external resistor (single output models)
Ripple & noise	<100 mVpk-pk (20 MHz BW)
Conducted EMI	EN 55022, class A and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	88% typ.
Operating temperature range	-40 °C to +75 °C above 60°C derating 2.2%/K - optional heatsink for extended temp.: see datasheet
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low current in standby operation
Casing	metal, with insulated baseplate
Full datasheet	www.tracopower.com/products/thl20wi.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
THL 20-2410WI		3.3 VDC	4500 mA
THL 20-2411WI		5.1 VDC	4000 mA
THL 20-2412WI		12 VDC	1670 mA
THL 20-2413WI	9 – 36 VDC	15 VDC	1340 mA
THL 20-2415WI		24 VDC	835 mA
THL 20-2422WI		± 12 VDC	± 835 mA
THL 20-2423WI		± 15 VDC	± 670 mA
THL 20-4810WI		3.3 VDC	4500 mA
THL 20-4811WI		5.1 VDC	4000 mA
THL 20-4812WI		12 VDC	1670 mA
THL 20-4813WI	18 – 75 VDC	15 VDC	1340 mA
THL 20-4815WI		24 VDC	835 mA
THL 20-4822WI		± 12 VDC	± 835 mA
THL 20-4823WI		± 15 VDC	± 670 mA

Optional heatsink: [THL-HS1](#)

Dimensions



() = Inches

Pin	Single output	Dual output
1	+ Vin (Vcc)	+ Vin (Vcc)
2	- Vin (GND)	- Vin (GND)
3	+ Vout	+ Vout
4	Trim	Common
5	- Vout	- Vout
6	Remote On/Off	Remote On/Off

THL-25 Series ▶ 25 W



- ▶ Highest power density 25 W converter
- ▶ 1" x 1" x 0.4" metal package
- ▶ Wide 2:1 input voltage range
- ▶ Highest efficiency up to 90 %
- ▶ I/O isolation 1500 VDC
- ▶ Remote On/Off
- ▶ Adjustable output voltage
- ▶ Industry standard pinout



NEW
Product

Specifications		Models			
Line regulation	1% max.	Order code	Input voltage	Output voltage	Output current max.
Load regulation	- Single output models: 1.0% max. - Dual output models: 2.0% max.	THL 25-1210WI		3.3 VDC	6000 mA
Output voltage adjustment	±10% by external resistor (single output models)	THL 25-1211WI		5.0 VDC	5000 mA
Ripple & noise	<100 mVpk-pk (20 MHz BW)	THL 25-1212WI	9 – 18 VDC	12 VDC	2085 mA
Conducted EMI	EN 55022, class A and FCC, level A	THL 25-1213WI		15 VDC	1670 mA
Short circuit protection	continuous, automatic recovery	THL 25-1222WI		± 12 VDC	± 1042 mA
Efficiency	89% typ.	THL 25-1223WI		± 15 VDC	± 835 mA
Operating temperature range	-40 °C to +75 °C above 60°C derating 2.5%/K - optional heatsink for extended temp.: see datasheet	THL 25-2410WI		3.3 VDC	6000 mA
I/O isolation voltage	1500 VDC (60 sec.)	THL 25-2411WI		5.0 VDC	5000 mA
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 (reports pending)	THL 25-2412WI	18 – 36 VDC	12 VDC	2085 mA
Remote On/Off	shutdown input for low current in standby operation	THL 25-2413WI		15 VDC	1670 mA
Casing	metal, with insulated baseplate	THL 25-2422WI		± 12 VDC	± 1042 mA
Full datasheet	www.tracopower.com/products/thl25.pdf	THL 25-2423WI		± 15 VDC	± 835 mA
		THL 25-4810WI		3.3 VDC	6000 mA
		THL 25-4811WI		5.0 VDC	5000 mA
		THL 25-4812WI	36 – 75 VDC	12 VDC	2085 mA
		THL 25-4813WI		15 VDC	1670 mA
		THL 25-4822WI		± 12 VDC	± 1042 mA
		THL 25-4823WI		± 15 VDC	± 835 mA

Optional heatsink: **THL-HS1**

Dimensions		Pin		
	<p>Bottom view</p> <p>Dimensions: 7.62 (0.3), 5.08 (0.2), 20.32 (0.8), 6.0 (0.24), 10.2 (0.4), 2.5 (0.1), 10.16 (0.4), 10.16 (0.4), 25.4 (1.0), 2.5 (0.1), 25.4 (1.0)</p>	Pin	Single output	Dual output
		1	+ Vin (Vcc)	+ Vin (Vcc)
2	- Vin (GND)	- Vin (GND)		
3	+ Vout	+ Vout		
4	Trim	Common		
5	- Vout	- Vout		
6	Remote On/Off	Remote On/Off		

() = Inches

TDR-2 Series ▶ 2 W



- ▶ Compact design in DIP package
- ▶ Wide 2:1 input voltage range
- ▶ Fully regulated outputs
- ▶ Low ripple & noise
- ▶ No minimum load required
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range -40 °C to +85 °C without derating
- ▶ Remote On/Off

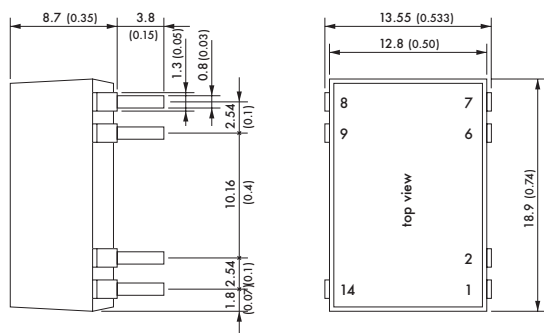


Specifications	
Line regulation	0.2 % max.
Load regulation	- Single output models: 1.0 % max. - Dual output models: 1.0 % max.
Ripple & noise	<30 mVpk-pk (20 MHz BW) (no external output capacitor required)
Short circuit protection	continuous, automatic recovery
Efficiency	81 % typ.
Operating temperature range	-40 °C to +85 °C without derating
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	Epoxy molded (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tdr2.pdf

Models			
Order code	Input voltage	Output voltage	Output current max.
TDR 2-0511	4.5 – 9 VDC	5 VDC	400 mA
TDR 2-0512		12 VDC	167 mA
TDR 2-0513	9 – 18 VDC	15 VDC	134 mA
TDR 2-0522		± 12 VDC	± 83 mA
TDR 2-0523	18 – 36 VDC	± 15 VDC	± 67 mA
TDR 2-1211		5 VDC	400 mA
TDR 2-1212	36 – 75 VDC	12 VDC	167 mA
TDR 2-1213		15 VDC	134 mA
TDR 2-1222	18 – 36 VDC	± 12 VDC	± 83 mA
TDR 2-1223		± 15 VDC	± 67 mA
TDR 2-2411	9 – 18 VDC	5 VDC	400 mA
TDR 2-2412		12 VDC	167 mA
TDR 2-2413	18 – 36 VDC	15 VDC	134 mA
TDR 2-2422		± 12 VDC	± 83 mA
TDR 2-2423	36 – 75 VDC	± 15 VDC	± 67 mA
TDR 2-4811		5 VDC	400 mA
TDR 2-4812	18 – 36 VDC	12 VDC	167 mA
TDR 2-4813		15 VDC	134 mA
TDR 2-4822	36 – 75 VDC	± 12 VDC	± 83 mA
TDR 2-4823		± 15 VDC	± 67 mA

Product with same electrical specifications available in SMD package.
See TDR-2SM series page 10

Dimensions



() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	Remote On/Off	Remote On/Off
6	No con.	Common
7	No con.	- Vout
8	+ Vout	+ Vout
9	- Vout	Common
14	+ Vin (Vcc)	+ Vin (Vcc)

TDR-2WI Series ▶ 2 W

CB  
Scheme UL 60950-1

- ▶ Compact design in DIP package
- ▶ Ultra wide 4:1 input voltage range
- ▶ Fully regulated outputs
- ▶ Low ripple & noise
- ▶ No minimum load required
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ without derating
- ▶ Remote On/Off



Specifications

Line regulation	0.2 % max.
Load regulation	– Single output models: 1.0% max. – Dual output models: 1.0 % max.
Ripple & noise	<30 mVpk-pk (20 MHz BW) (no external output capacitor required)
Short circuit protection	continuous, automatic recovery
Efficiency	81 % typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ without derating
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	Epoxy molded (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tdr2wi.pdf

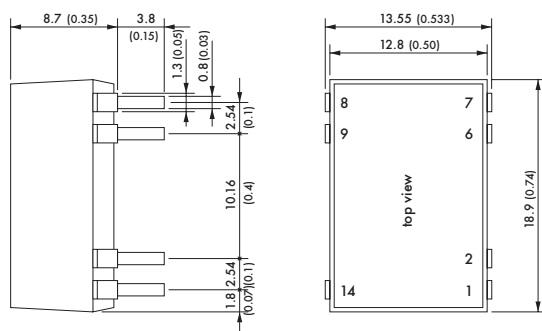
Models

Order code	Input voltage	Output voltage	Output current max.
TDR 2-1211WI		5 VDC	400 mA
TDR 2-1212WI		12 VDC	167 mA
TDR 2-1213WI	4.5 – 18 VDC	15 VDC	134 mA
TDR 2-1222WI		± 12 VDC	± 83 mA
TDR 2-1223WI		± 15 VDC	± 67 mA
TDR 2-2411WI		5 VDC	400 mA
TDR 2-2412WI		12 VDC	167 mA
TDR 2-2413WI	9 – 36 VDC	15 VDC	134 mA
TDR 2-2422WI		± 12 VDC	± 83 mA
TDR 2-2423WI		± 15 VDC	± 67 mA
TDR 2-4811WI		5 VDC	400 mA
TDR 2-4812WI		12 VDC	167 mA
TDR 2-4813WI	18 – 75 VDC	15 VDC	134 mA
TDR 2-4822WI		± 12 VDC	± 83 mA
TDR 2-4823WI		± 15 VDC	± 67 mA

Product with same electrical specifications available in SMD package.

See TDR-2WISM series page 11

Dimensions



() = Inches

Pin	Single output	Dual output
1	– Vin (GND)	– Vin (GND)
2	Remote On/Off	Remote On/Off
6	No con.	Common
7	No con.	– Vout
8	+ Vout	+ Vout
9	– Vout	Common
14	+ Vin (Vcc)	+ Vin (Vcc)

TDR-3 Series ▶ 3 W



- ▶ Most compact 3 Watt converter in DIP package
- ▶ Wide 2:1 input voltage range
- ▶ Fully regulated outputs
- ▶ Low ripple & noise
- ▶ No minimum load required
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range -40 °C to +85 °C
- ▶ Remote On/Off

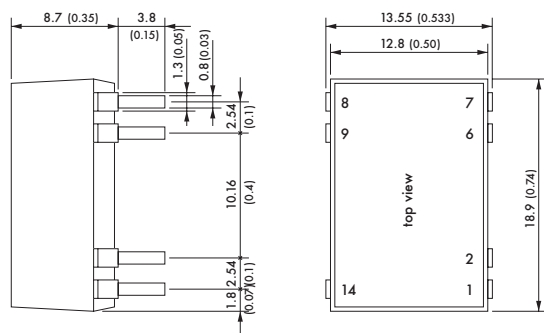


Specifications	
Line regulation	0.2 % max.
Load regulation	- Single output models: 1.0 % max. - Dual output models: 1.0 % max.
Ripple & noise	<30 mVpk-pk (20 MHz BW) (no external output capacitor required)
Short circuit protection	continuous, automatic recovery
Efficiency	81 % typ.
Operating temperature range	-40 °C to +85 °C above 70 °C derating 3.5%/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	Epoxy molded (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tdr3.pdf

Models			
Order code	Input voltage	Output voltage	Output current max.
TDR 3-0511		5 VDC	600 mA
TDR 3-0512		12 VDC	250 mA
TDR 3-0513	4.5 – 9 VDC	15 VDC	200 mA
TDR 3-0522		± 12 VDC	± 125 mA
TDR 3-0523		± 15 VDC	± 100 mA
TDR 3-1211		5 VDC	600 mA
TDR 3-1212		12 VDC	250 mA
TDR 3-1213	9 – 18 VDC	15 VDC	200 mA
TDR 3-1222		± 12 VDC	± 125 mA
TDR 3-1223		± 15 VDC	± 100 mA
TDR 3-2411		5 VDC	600 mA
TDR 3-2412		12 VDC	250 mA
TDR 3-2413	18 – 36 VDC	15 VDC	200 mA
TDR 3-2422		± 12 VDC	± 125 mA
TDR 3-2423		± 15 VDC	± 100 mA
TDR 3-4811		5 VDC	600 mA
TDR 3-4812		12 VDC	250 mA
TDR 3-4813	36 – 75 VDC	15 VDC	200 mA
TDR 3-4822		± 12 VDC	± 125 mA
TDR 3-4823		± 15 VDC	± 100 mA

Product with same electrical specifications available in SMD package.
See TDR-3SM series page 13

Dimensions



() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	Remote On/Off	Remote On/Off
6	No con.	Common
7	No con.	- Vout
8	+ Vout	+ Vout
9	- Vout	Common
14	+ Vin (Vcc)	+ Vin (Vcc)

TDR-3WI Series ▶ 3 W

CB  
Scheme UL 60950-1

- ▶ Most compact 3 Watt converter in DIP package
- ▶ Ultra wide 4:1 input voltage range
- ▶ Fully regulated outputs
- ▶ Low ripple & noise
- ▶ No minimum load required
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range -40 °C to +85 °C
- ▶ Remote On/Off



Specifications

Line regulation	0.2 % max.
Load regulation	- Single output models: 1.0 % max. - Dual output models: 1.0 % max.
Ripple & noise	<30 mVpk-pk (20 MHz BW) (no external output capacitor required)
Short circuit protection	continuous, automatic recovery
Efficiency	81 % typ.
Operating temperature range	-40 °C to +85 °C above 70 °C derating 3.5%/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards	cUL/UL 60950-1, IEC/EN 60950-1 CB-report
Remote On/Off	shutdown input for low input current (2.5 mA) in standby operation
Casing	Epoxy molded (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/tdr3wi.pdf

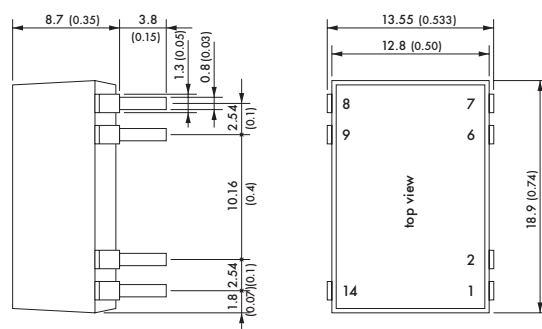
Models

Order code	Input voltage	Output voltage	Output current max.
TDR 3-1211WI		5 VDC	600 mA
TDR 3-1212WI		12 VDC	250 mA
TDR 3-1213WI	4.5 – 18 VDC	15 VDC	200 mA
TDR 3-1222WI		± 12 VDC	± 125 mA
TDR 3-1223WI		± 15 VDC	± 100 mA
TDR 3-2411WI		5 VDC	600 mA
TDR 3-2412WI		12 VDC	250 mA
TDR 3-2413WI	9 – 36 VDC	15 VDC	200 mA
TDR 3-2422WI		± 12 VDC	± 125 mA
TDR 3-2423WI		± 15 VDC	± 100 mA
TDR 3-4811WI		5 VDC	600 mA
TDR 3-4812WI		12 VDC	250 mA
TDR 3-4813WI	18 – 75 VDC	15 VDC	200 mA
TDR 3-4822WI		± 12 VDC	± 125 mA
TDR 3-4823WI		± 15 VDC	± 100 mA

Product with same electrical specifications available in SMD package.

See TDR-3WISM series page 14

Dimensions



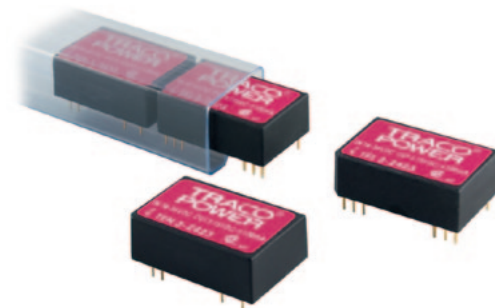
() = Inches

Pin	Single output	Dual output
1	- Vin (GND)	- Vin (GND)
2	Remote On/Off	Remote On/Off
6	No con.	Common
7	No con.	- Vout
8	+ Vout	+ Vout
9	- Vout	Common
14	+ Vin (Vcc)	+ Vin (Vcc)

TEN-3 Series ▶ 3 W



- ▶ Wide 2:1 input range
- ▶ I/O isolation 1500VDC
- ▶ Operating temperature range -40 °C to +85 °C
- ▶ Input filter to meet EN 55022, class A
- ▶ Industry standard pinout



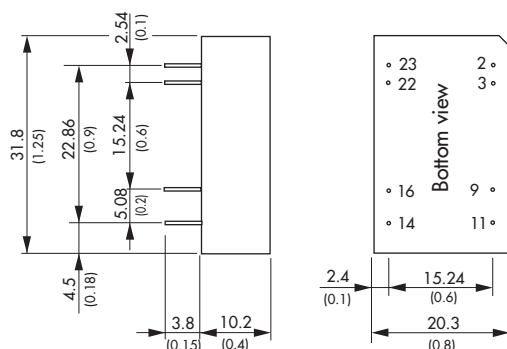
Specifications

Line regulation	0.5% max.
Load regulation	- Single output models: 0.5% max. - Dual output models: 2.0% max.
Ripple & noise	<50 mVpk-pk (20 MHz BW)
Conducted EMI	EN 55022, class A and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	80% typ.
Operating temperature range	-40 °C to +85 °C above 70 °C derating 3.0 %/K
I/O isolation voltage	1500VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, CB-report
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/ten3.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TEN 3-0510		3.3 VDC	600 mA
TEN 3-0511		5 VDC	500 mA
TEN 3-0512		12 VDC	250 mA
TEN 3-0513	4.5 – 9.0 VDC	15 VDC	200 mA
TEN 3-0521		± 5 VDC	± 250 mA
TEN 3-0522		± 12 VDC	± 125 mA
TEN 3-0523		± 15 VDC	± 100 mA
TEN 3-1210		3.3 VDC	600 mA
TEN 3-1211		5 VDC	500 mA
TEN 3-1212		12 VDC	250 mA
TEN 3-1213	9 – 18 VDC	15 VDC	200 mA
TEN 3-1221		± 5 VDC	± 250 mA
TEN 3-1222		± 12 VDC	± 125 mA
TEN 3-1223		± 15 VDC	± 100 mA
TEN 3-2410		3.3 VDC	600 mA
TEN 3-2411		5 VDC	500 mA
TEN 3-2412		12 VDC	250 mA
TEN 3-2413	18 – 36 VDC	15 VDC	200 mA
TEN 3-2421		± 5 VDC	± 250 mA
TEN 3-2422		± 12 VDC	± 125 mA
TEN 3-2423		± 15 VDC	± 100 mA
TEN 3-4810		3.3 VDC	600 mA
TEN 3-4811		5 VDC	500 mA
TEN 3-4812		12 VDC	250 mA
TEN 3-4813	36 – 72 VDC	15 VDC	200 mA
TEN 3-4821		± 5 VDC	± 250 mA
TEN 3-4822		± 12 VDC	± 125 mA
TEN 3-4823		± 15 VDC	± 100 mA

Dimensions



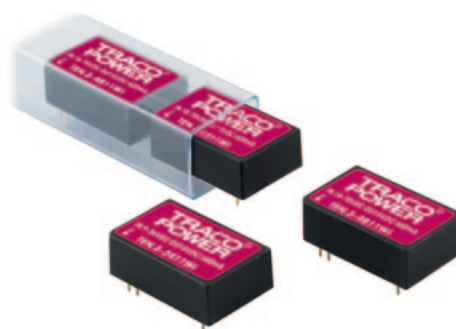
() = Inches

Pin	Single output	Dual output
2	- Vin (GND)	- Vin (GND)
3	- Vin (GND)	- Vin (GND)
9	No pin	Common
11	No con.	- Vout
14	- Vout	+ Vout
16	- Vout	Common
22	+ Vin (Vcc)	+ Vin (Vcc)
23	+ Vin (Vcc)	+ Vin (Vcc)

TEN-3WI Series ▶ 3 W



- ▶ Ultrawide 4:1 input range
- ▶ I/O isolation 1500 VDC
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ Input filter to meet EN 55022, class A
- ▶ Industry standard pinout



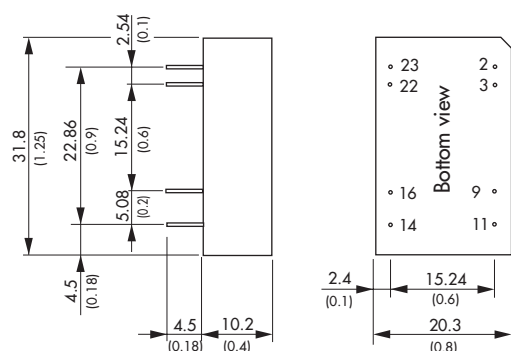
Specifications

Line regulation	1.0% max.
Load regulation	– Single output models: 1.0% max. – Dual output models: 3.0% max.
Ripple & noise	<75 mVpk-pk (20 MHz BW)
Conducted EMI	EN 55022, class A and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	82% typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.5 %/K
I/O isolation voltage	1500VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, CB-report
Casing	plastic (UL 94 V-0 rated)
Full datasheet	www.tracopower.com/products/ten3wi.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TEN 3-2410WI		3.3 VDC	750 mA
TEN 3-2411WI		5 VDC	600 mA
TEN 3-2412WI	9 – 36 VDC	12 VDC	250 mA
TEN 3-2413WI		15 VDC	200 mA
TEN 3-2422WI		± 12 VDC	± 125 mA
TEN 3-2423WI		± 15 VDC	± 100 mA
TEN 3-4810WI		3.3 VDC	750 mA
TEN 3-4811WI		5 VDC	600 mA
TEN 3-4812WI	18 – 75 VDC	12 VDC	250 mA
TEN 3-4813WI		15 VDC	200 mA
TEN 3-4822WI		± 12 VDC	± 125 mA
TEN 3-4823WI		± 15 VDC	± 100 mA

Dimensions



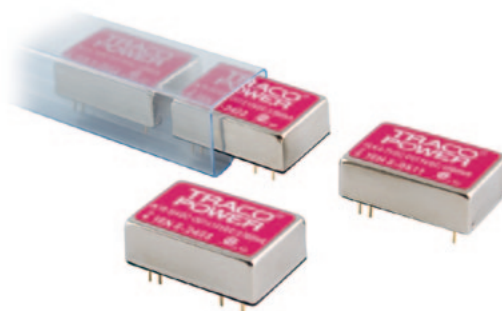
() = Inches

Pin	Single output	Dual output
2	– Vin (GND)	– Vin (GND)
3	– Vin (GND)	– Vin (GND)
9	No pin	Common
11	No con.	– Vout
14	+ Vout	+ Vout
16	– Vout	Common
22	+ Vin (Vcc)	+ Vin (Vcc)
23	+ Vin (Vcc)	+ Vin (Vcc)

TEN-5 Series ▶ 5-6 W



- ▶ DIP-24 metal package
- ▶ Wide 2:1 input range
- ▶ Operating temperature range $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
- ▶ I/O isolation 1500 VDC
- ▶ Input filter to meet EN 55022, class A
- ▶ Industry standard pinout



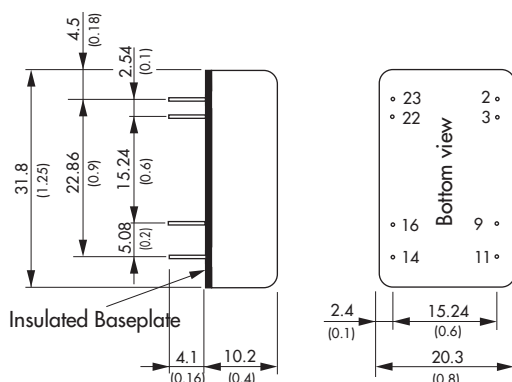
Specifications

Line regulation	0.3% max.
Load regulation	- Single output models: 1.0% max. - Dual output models: 2.0% max.
Ripple & noise	<50 mVpk-pk (20 MHz BW)
Conducted EMI	EN 55022, class A and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	85% typ. 3.3 VDC models 79% typ.
Operating temperature range	$-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ above $70\text{ }^{\circ}\text{C}$ derating 3.5%/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, CB-report
Casing	metal, with insulated baseplate
Full datasheet	www.tracopower.com/products/ten5.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TEN 5-0510		3.3 VDC	1200 mA
TEN 5-0511		5 VDC	1000 mA
TEN 5-0512		12 VDC	500 mA
TEN 5-0513	4.5 - 7 VDC	15 VDC	400 mA
TEN 5-0521		± 5 VDC	± 500 mA
TEN 5-0522		± 12 VDC	± 250 mA
TEN 5-0523		± 15 VDC	± 200 mA
TEN 5-1210		3.3 VDC	1200 mA
TEN 5-1211		5 VDC	1000 mA
TEN 5-1212		12 VDC	500 mA
TEN 5-1213	9 - 18 VDC	15 VDC	400 mA
TEN 5-1221		± 5 VDC	± 500 mA
TEN 5-1222		± 12 VDC	± 250 mA
TEN 5-1223		± 15 VDC	± 200 mA
TEN 5-2410		3.3 VDC	1200 mA
TEN 5-2411		5 VDC	1000 mA
TEN 5-2412		12 VDC	500 mA
TEN 5-2413	18 - 36 VDC	15 VDC	400 mA
TEN 5-2421		± 5 VDC	± 500 mA
TEN 5-2422		± 12 VDC	± 250 mA
TEN 5-2423		± 15 VDC	± 200 mA
TEN 5-4810		3.3 VDC	1200 mA
TEN 5-4811		5 VDC	1000 mA
TEN 5-4812		12 VDC	500 mA
TEN 5-4813	36 - 75 VDC	15 VDC	400 mA
TEN 5-4821		± 5 VDC	± 500 mA
TEN 5-4822		± 12 VDC	± 250 mA
TEN 5-4823		± 15 VDC	± 200 mA

Dimensions



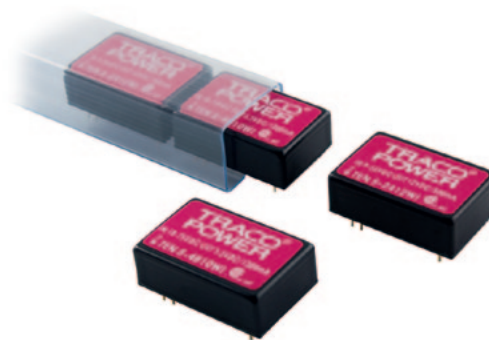
() = Inches

Pin	Single output	Dual output
2	- Vin (GND)	- Vin (GND)
3	- Vin (GND)	- Vin (GND)
9	No pin	Common
11	No con.	- Vout
14	+ Vout	+ Vout
16	- Vout	Common
22	+ Vin (Vcc)	+ Vin (Vcc)
23	+ Vin (Vcc)	+ Vin (Vcc)

TEN-5WI Series ▶ 5-6 W

CB 
Scheme UL 60950-1

- ▶ DIP-24 metal package
- ▶ Ultra wide 4:1 input range
- ▶ Operating temperature range -40 °C to +85 °C
- ▶ I/O isolation 1500VDC
- ▶ Input filter to meet EN 55022, class A
- ▶ Industry standard pinout



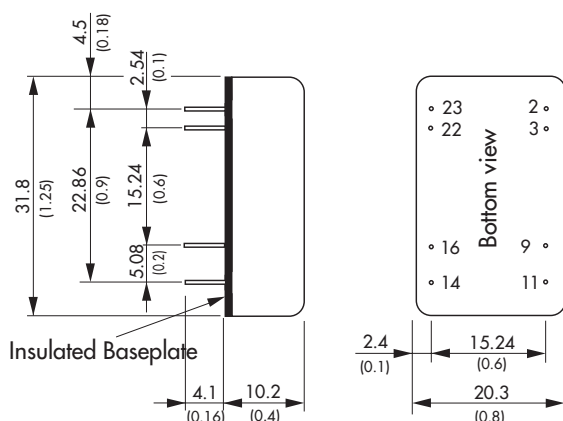
Specifications

Line regulation	0.5% max.
Load regulation	2.0% max.
Ripple & noise	<75 mVpk-pk (20 MHz BW)
Conducted EMI	EN 55022, class A and FCC, level A (internal filter)
Short circuit protection	continuous, automatic recovery
Efficiency	82% typ. 3.3 VDC models 76% typ.
Operating temperature range	-40 °C to +85 °C above 70°C derating 3.3%/K
I/O isolation voltage	1500 VDC (60 sec.)
Safety standards / approvals	cUL/UL 60950-1, IEC/EN 60950-1, CB-report
Casing	metal, with insulated baseplate
Full datasheet	www.tracopower.com/products/ten5wi.pdf

Models

Order code	Input voltage	Output voltage	Output current max.
TEN 5-2410WI		3.3 VDC	1200 mA
TEN 5-2411WI		5 VDC	1000 mA
TEN 5-2412WI		12 VDC	500 mA
TEN 5-2413WI	9-36 VDC	15 VDC	400 mA
TEN 5-2421WI		± 5 VDC	± 500 mA
TEN 5-2422WI		± 12 VDC	± 250 mA
TEN 5-2423WI		± 15 VDC	± 200 mA
TEN 5-4810WI		3.3 VDC	1200 mA
TEN 5-4811WI		5 VDC	1000 mA
TEN 5-4812WI		12 VDC	500 mA
TEN 5-4813WI	18-75 VDC	15 VDC	400 mA
TEN 5-4821WI		± 5 VDC	± 500 mA
TEN 5-4822WI		± 12 VDC	± 250 mA
TEN 5-4823WI		± 15 VDC	± 200 mA

Dimensions



() = Inches

Pin	Single output	Dual output
2	- Vin (GND)	- Vin (GND)
3	- Vin (GND)	- Vin (GND)
9	No pin	Common
11	No con.	- Vout
14	+ Vout	+ Vout
16	- Vout	Common
22	+ Vin (Vcc)	+ Vin (Vcc)
23	+ Vin (Vcc)	+ Vin (Vcc)