TRUMPower

TEM15 Series

15 Watts AC/DC Medical Power Modules

FEATURES

- PCB Mount Switching Power Modules
- Fully Encapsulated Plastic Case
- 90-264 VAC, 47-440Hz Universal Input
- Regulated Output
- Low Ripple and Noise
- Class II Construction



MODELS LIST

SINGLE OUTPUT							
Product No.	**TEM15-S3.3**	**TEM15-S5**	**TEM15-S7.35**	**TEM15-S9**	**TEM15-S12**	**TEM15-S15**	**TEM15-S24**
Output Voltage (VDC)	3.3 VDC	5 VDC	7.35 VDC	9 VDC	12 VDC	15 VDC	24 VDC
Max. Output Current (mA)	3000mA	3000mA	2040mA	1666mA	1250mA	1000mA	625mA
Load Regulation (10-100%)	1%	1%	1%	1%	1%	1%	1%
Max Capacitive Load	40000µF	10000µF	4700µF	3000µF	1100µF	1000µF	820µF

DUAL OUTPUTS						
Product No.	**TEM15-D0505**		**TEM15-D1212**		**TEM15-D1515**	
	Output 1	Output 2	Output 1	Output 2	Output 1	Output 2
Output Voltage (VDC)	+5 VDC	-5 VDC	+12 VDC	-12 VDC	+15 VDC	-15 VDC
Max. Output Current (mA)	1500mA	1500mA	625mA	625mA	500mA	500mA
Load Regulation (10-100%)	1% (symmetric load)	1% (symmetric load)	1% (symmetric load)	1% (symmetric load)	1% (symmetric load)	1% (symmetric load)
Cross Regulation	5%	5%	3%	3%	3%	3%
Max Capacitive Load	+4700µF	-4700µF	+560µF	-560µF	+500µF	-500µF

TRIPLE OUTPUTS						
Product No.	**TEM15-T0512**			**TEM15-T0515**		
	Output 1	Output 2	Output 3	Output 1	Output 2	Output 3
Output Voltage (VDC)	5 VDC	+12 VDC	-12 VDC	5 VDC	+15 VDC	-15 VDC
Max. Output Current (mA)	2000mA	200mA	200mA	2000mA	150mA	150mA
Load Regulation (10-100%)	1%	5% (symmetric)	5% (symmetric)	1%	5% (symmetric)	5% (symmetric)
Cross Regulation	1%	5%	5%	1%	5%	5%
Max. Capacitive Load	10000µF	+470µF	-470µF	10000µF	+600µF	-600µF

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INPUT SPECIFICATIONS

Input Voltage Range	90~264 VAC or 100~375 VDC
Input Frequency	47~440Hz
Input Current.	220mA max. @ 115 VAC 118mA max. @ 230 VAC
Inrush Current	10A max. @ 115 VAC 20A max. @ 230 VAC
Leakage Current	0.1mA max. @ 115 VAC 0.2mA max. @ 230 VAC
Recommended External Fuse	2.0A slow blow type

OUTPUT SPECIFICATIONS

Output Wattage	15W max.
Output Voltage	See tables
Voltage Accuracy, Single	±2% max.
Dual	±2% max.
Triple	±3% max.
Minimum Load, Single	Not required
Dual	10%
Triple	25%
Line Regulation, Single	0.5% max.
Dual	0.5% max.
Triple	2% max.
Ripple & Noise*	1% of Vout
Hold-up Time	20ms min.
Switching Frequency	132KHz
Overcurrent Protection	Above 105% rated output power
Overvoltage Protection	Zener diode clamp
Short-circuit Protection	Hiccup mode, indefinite (automatic-recover)
Over Temperature Protection	100°C
Input-Output Isolation	4000 VAC

*Ripple & Noise are measured at 20MHz of bandwidth with 0.1μF & 47μF capacitors in parallel.

GENERAL SPECIFICATIONS

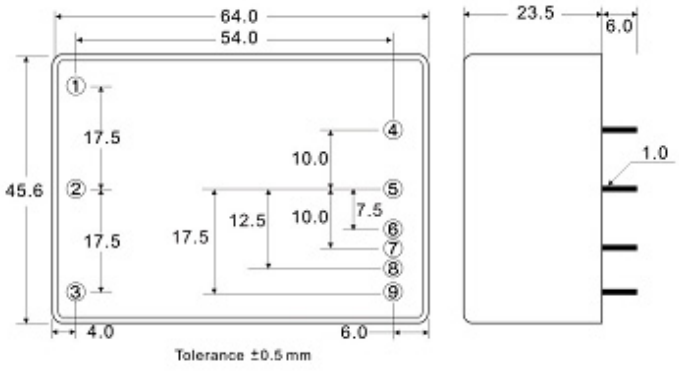
Efficiency	83% max.
Operating Temperature	-25°C to +70°C
Derating	Derate linearly from 100% @ 50°C to 50% @ 70°C
Case Temperature	+95°C max.
Cooling	Free-air convection
Storage Temperature	-40°C to +100°C
Temperature Coefficient	±0.01%/°C
Relative Humidity	95% RH
MTBF	200K to 400K hours at full load, 25°C ambient, calculated per MIL-HDBK-217F
Dimensions (LxWxH)	2.52 x 1.79 x 0.92 inches (64.0 x 45.6 x 23.5 mm)
Case Material	Plastic resin with fiberglass case, UL 94V-0 rated
Weight	120g

EMC & SAFETY STANDARDS

Safety Standards	UL 60601-1, IEC60601-1, EN 60601-1
Safety Approvals	UL, cUL, CB
EMI (PFI Conducted)	EN55011, Class B
EMC Standards	EN60601-1-2
ESD Susceptibility	EN60601-1-2
Radiated Susceptibility	EN60601-1-2
EFT / Burst	EN60601-1-2
Surge	EN60601-1-2
Conducted Susceptibility	EN60601-1-2

All specifications typical at nominal input voltage, full load and +25°C after warm-up time unless otherwise noted.

MECHANICAL DRAWING



PIN CHART

PIN NO.	SINGLE	DUAL	TRIPLE
1	NO PIN	NO PIN	NO PIN
2	AC IN (L)	AC IN (L)	AC IN (L)
3	AC IN (N)	AC IN (N)	AC IN (N)
4	-DC OUT	-DC OUT	+5V RTN
5	NO PIN	COMMON	+5V OUT
6	NO PIN	NO PIN	-DC OUT
7	+DC OUT	+DC OUT	NO PIN
8	NO PIN	NO PIN	COMMON
9	NO PIN	NO PIN	+DC OUT

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