

AC-DC PCB & Chassis Mount

6-25 Watts TSU Series



THE XPERTS IN POWER

85-264 V AC Universal Input

Screw Terminal Option

Ultra Miniature Format

Single & Dual Outputs

Low Output Noise

PCB & Chassis Mount

DIN Rail Mounting Option

Specification

Input

- Input Voltage • 85-264 VAC (110-370 VDC)
- Input Frequency • 47-63 Hz
- Earth Leakage Current • 0.3 mA typical at 230 VAC 50 Hz
- Input Protection • None fitted (external 1 A slow blow type recommended)

Output

- Output Voltage • See Tables
- Minimum Load • 10% V1, dual output models only
- Hold Up Time • 20/100 ms typ at 115/230 VAC input
- Initial Set Accuracy • $\pm 2\%$
- Line Regulation • $\pm 0.4\%$
- Load Regulation (10-90%) • $\pm 1.0\%$ max single output models, $\pm 2.0\%$ max dual output models (symmetric load)
- Ripple & Noise • 100 mV pk-pk typical at 20 MHz bandwidth
- Overload Protection • 130% of full load
- Short Circuit Protection • Long term short circuit not recommended
- Temperature Coefficient • $0.02\%/^{\circ}\text{C}$

General

- Efficiency • 78% typical
- Isolation • 3000 VAC Input to Output, 2000 VAC Input to Case, 500 VAC Output to Case
- Switching Frequency • 100 kHz typical
- MTBF • $> 250,000$ hrs at 25°C MIL-HDBK-217E
- Weight • PCB Models: TSU6 45 g, TSU10 75 g, TSU15 95 g, TSU25 135 g
Chassis Mount Models: TSU10 80 g, TSU15 100 g, TSU25 150 g
Screw Terminal Models: TSU15 105 g, TSU25 165 g

Environmental

- Operating Temperature • -25°C to $+60^{\circ}\text{C}$, derate $2.5\%/^{\circ}\text{C}$ above $+40^{\circ}\text{C}$ for 5 V models, $2.5\%/^{\circ}\text{C}$ above $+50^{\circ}\text{C}$ all other models
- Storage Temperature • -25°C to $+105^{\circ}\text{C}$
- Operating Humidity • 85% RH max non-condensing
- Case Temperature • 90°C max

EMC & Safety

- Emissions • EN55022, FCC & CISPR-22 all Level B conducted
- ESD Susceptibility • EN61000-4-2 Level 3 Air Perf Criteria B & Level 3 Contact Perf Criteria B
- Radiated Susceptibility • EN61000-4-3 10 V/m Perf Criteria A
- EFT/Burst • EN61000-4-4 Level 3 Perf Criteria B
- Surge • EN61000-4-5 Level 3 Perf Criteria B
- Safety Approvals • EN60950, UL/cUL1950 & IEC950

OUTPUT VOLTAGE & CURRENT RATINGS - 6 WATT MODELS						TSU
Output Power Max.	Output 1	Output 2	Model Number PCB Mounting with solder pins	Model Number Chassis Mounting with FASTON Tabs	Model Number Chassis Mounting with Screw Terminals	
6 Watts	5 V DC/1200 mA	-	TSU06US05	-	-	
	12 V DC/500 mA	-	TSU06US12	-	-	
	15 V DC/400 mA	-	TSU06US15	-	-	
	24 V DC/250 mA	-	TSU06US24	-	-	
	+12 V DC/250 mA	-12 V DC/250 mA	TSU06UD12	-	-	
	+15 V DC/200 mA	-15 V DC/200 mA	TSU06UD15	-	-	

OUTPUT VOLTAGE & CURRENT RATINGS - 10 WATT MODELS						TSU
Output Power Max.	Output 1	Output 2	Model Number PCB Mounting with solder pins	Model Number Chassis Mounting with FASTON Tabs	Model Number Chassis Mounting with Screw Terminals	
10 Watts	5 V DC/2000 mA	-	TSU10US05	TSU10US05-F	-	
	12 V DC/900 mA	-	TSU10US12	TSU10US12-F	-	
	15 V DC/700 mA	-	TSU10US15	TSU10US15-F	-	
	24 V DC/450 mA	-	TSU10US24	TSU10US24-F	-	
	+12 V DC/450 mA	-12 V DC/450 mA	TSU10UD12	TSU10UD12-F	-	
	+15 V DC/350 mA	-15 V DC/350 mA	TSU10UD15	TSU10UD15-F	-	

OUTPUT VOLTAGE & CURRENT RATINGS - 15 WATT MODELS						TSU
Output Power Max.	Output 1	Output 2	Model Number PCB Mounting with solder pins	Model Number Chassis Mounting with FASTON Tabs	Model Number Chassis Mounting with Screw Terminals	
15 Watts	5 V DC/3000 mA	-	TSU15US05	TSU15US05-F	TSU15US05-C	
	12 V DC/1300 mA	-	TSU15US12	TSU15US12-F	TSU15US12-C	
	15 V DC/1000 mA	-	TSU15US15	TSU15US15-F	TSU15US15-C	
	24 V DC/650 mA	-	TSU15US24	TSU15US24-F	TSU15US24-C	
	+12 V DC/650 mA	-12 V DC/650 mA	TSU15UD12	TSU15UD12-F	TSU15UD12-C	
	+15 V DC/500 mA	-15 V DC/500 mA	TSU15UD15	TSU15UD15-F	TSU15UD15-C	

OUTPUT VOLTAGE & CURRENT RATINGS - 25 WATT MODELS						TSU
Output Power Max.	Output 1	Output 2	Model Number PCB Mounting with solder pins	Model Number Chassis Mounting with FASTON Tabs	Model Number Chassis Mounting with Screw Terminals	
25 Watts ⁽¹⁾	5 V DC/4600 mA	-	TSU25US05	TSU25US05-F	TSU25US05-C	
	12 V DC/2000 mA	-	TSU25US12	TSU25US12-F	TSU25US12-C	
	15 V DC/1600 mA	-	TSU25US15	TSU25US15-F	TSU25US15-C	
	24 V DC/1000 mA	-	TSU25US24	TSU25US24-F	TSU25US24-C	
	+12 V DC/1000 mA	-12 V DC/1000 mA	TSU25UD12	TSU25UD12-F	TSU25UD12-C	
	+15 V DC/800 mA	-15 V DC/800 mA	TSU25UD15	TSU25UD15-F	TSU25UD15-C	

Notes

1. 10% power reduction at 115 V AC operation.

Mechanical Details

PCB Model 6/10/15/25 W

NOTE: Pin \varnothing 1.0 \pm 0.1 mm

Dimensions (mm)				
	TSU06	TSU10	TSU15	TSU25
A	50	55	64	76
B	42	47	54	66
C	40	45	45	51
D	20	24	24	28
E	15.5	17.5	17.5	17.5

Chassis Model 10/15 W

Optional DIN Rail Kit
10 W - TSUDM10
15 W - TSUDM15

Dimensions (mm)		
	TSU10	TSU15
A	75.0	84.0
B	65.0	74.0
C	55.0	64.0
D	47.6	55.1

Chassis Model 25 W

Optional DIN Rail Kit
25 W - TSUDM25

Pin-Out for all models		
Pin No.	Single	Dual
1	+V out	+V out
2	No Pin	Common
3	-V out	-V out
4 & 5	AC in	AC in
6	FG	FG

Screw Terminal Model 15/25 W

Dimensions (mm)		
	TSU15	TSU25
A	84.0	96.0
B	74.0	86.0
C	64.0	76.0
D	45.0	51.0
E	26.5	29.5
F	4.5	7.5