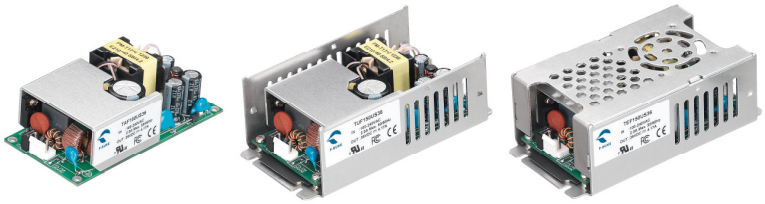
POWER MATE TECHNOLOGY CO., LTD.

P-DUKE

TAF150 SERIES

2 X 4 Inch AC-DC POWER SUPPLIES



UNIVERSAL INPUT RANGE
UP TO 150Watts

FEATURES

- LOW STANDBY POWER CONSUMPTION UNDER 0.3 WATT
- WIDE INPUT VOLTAGE RANGE 85 TO 264VAC, 47 TO 63HZ
- ACTIVE POWER FACTOR CORRECTION
- BUILT-IN EMI FILTER
- OUTPUT VOLTAGE ADJUSTABLE
- OPEN FRAME DIMENSIONS 2.00 X 4.00 X 1.16 INCH
- 3000VAC INPUT TO OUTPUT REINFORCED INSULATION
- PROTECTION TYPE CLASS I AND CLASS II
- LOW LEAKAGE CURRENT UNDER 300μA
- OPERATING ALTITUDE 5000M
- 3 YEAR WARRANTY
- UL60950-1, EN60950-1, & IEC60950-1 SAFETY APPROVALS
- CE MARKED
- COMPLIANT TO RoHS II & REACH

APPLICATIONS

- WIRELESS NETWORK
- TELECOM/DATACOM
- INDUSTRY CONTROL SYSTEM
- MEASUREMENT EQUIPMENT
- SEMICONDUCTOR EQUIPMENT

3000VAC ISOLATION	OCP	SCP	OVP	LOW STANDBY POWER

TECHNICAL SPECIFICATION All specifications are typical at 230VAC input, full load and 25℃ otherwise noted

Model Number	Input Range	Output Voltage	Output Current @ Forced air cooling 50℃ Ta with 10CFM	Output Current @ Natural convection 50℃ Ta	Efficiency
	VAC	VDC	A	A	%
TAF150US12	85 ~ 264	12	12.50	8.33	91
TAF150US15	85 ~ 264	15	10.00	7.33	92
TAF150US24	85 ~ 264	24	6.25	4.58	92
TAF150US28	85 ~ 264	28	5.36	3.92	92
TAF150US36	85 ~ 264	36	4.17	3.05	92
TAF150US48	85 ~ 264	48	3.13	2.08	92

PART NUMBER STRUCTURE

T	A	F	150	U	S	12	□	-	□
Application	**Package Code**	**Dimension Code**	**Output Power (W)**	**Input Voltage (VAC)**	**Output Quantity**	**Output Voltage (VDC)**	**Protection Type**		**Option**
Industry Application	**A:** Open type **U:** U chassis type **E:** Enclosed type **D:** Din rail (E type only)			**U:**Universal 85 ~ 264VAC	**S:**Single	**12:** 12V **15:** 15V **24:** 24V **28:** 28V **36:** 36V **48:** 48V	**No suffix:** CLASS I **B:** CLASS II		**F:** External FAN (E type only)

INPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating input voltage range	AC input	85		264	VAC
	DC input	120		370	VDC
Input frequency	AC input	47		63	Hz
Input current	115VAC and Full Load			1.7	A
	230VAC and Full Load			0.8	
No load input power	230VAC			0.3	Watts
	230VAC TEF -F		0.6		
Leakage current	264VAC			300	μA
Power Factor		0.95			
Start up time				1000	ms
Rise time			20		ms
Hold up time	115VAC and Full Load	16			ms
Input inrush current	230VAC			100	A
Input protection	Internal fuse		T3.15A/250VAC		

OUTPUT SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Output power	Forced air cooling with 10CFM				150	
	Natural convection for 15Vout, 24Vout, 28Vout, 36Vout				110	Watts
	Natural convection for 12Vout, 48Vout				100	
Initial set voltage accuracy	230VAC and Full Load		-1.0		+1.0	%
Line regulation	Low Line to High Line at Full Load		-0.2		+0.2	%
Load regulation	No Load to Full Load		-0.5		+0.5	%
	10% Load to 90% Load		-0.4		+0.4	
Voltage adjustability			-10		+10	%
Minimum load				0		%
Ripple and noise	Measured by 20MHz bandwidth					
	With a 1μF/25V 1206 X7R MLCC	12Vout		120		mVp-p
	With a 1μF/25V 1206 X7R MLCC	15Vout		150		
	With a 1μF/50V 1206 X7R MLCC	24Vout		220		
	With a 1μF/50V 1206 X7R MLCC	28Vout		220		
	With a 1μF/50V 1206 X7R MLCC	36Vout		250		
	With a 0.1μF/100V 1206 X7R MLCC	48Vout		250		
Temperature coefficient			-0.02		+0.02	%/℃
Transient response	Load step form 50 ~ 75% change at 2.5A/μs	Peak deviation			3	% Vout
		Recovery time		500		μs
Over voltage protection	% of Vout(nom); Latch mode		115		135	%
Over load protection	% of Iout rated; Hiccup mode		115		150	%
Short circuit protection				Continuous, automatics recovery		
Fan power supply					12V at 500mA	

GENERAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute (Reinforced insulation)	Input to Output	3000			VAC
		Input (Output) to F.G.	1500			
Isolation resistance	500VDC		0.1			GΩ
Switching frequency				60		kHz
Safety approvals						UL60950-1
						EN60950-1
						IEC60950-1
Weight		TAF				187g (6.60oz)
		TUF				235g (8.29oz)
		TEF				256g (9.03oz)
		TDF				278g (9.81oz)
MTBF	MIL-HDBK-217F Ta=25℃, Full load					7.861 x 10^5 hrs

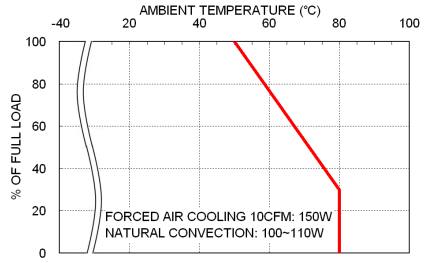
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature	Forced air cooling: 150W with 10CFM	With derating	-40		+80	℃
	Natural convection: 100 ~ 110W	With derating	-40		+80	
	-40℃ start up : 80% Load,max. @ Vin > 100VAC					
	-40℃ start up : 100% Load,max. @ Vin > 200VAC					
Storage temperature range			-40		+85	℃
Operating altitude					5000	m
Thermal shock						MIL-STD-810F
Shock						IEC68-2-27
Vibration						IEC68-2-6
Relative humidity	Non-condensing					5% to 95% RH

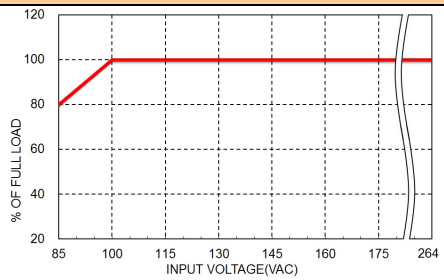
EMC SPECIFICATIONS

Parameter	Conditions		Level
EMI	EN55011, EN55022 and FCC Part 15		Conducted Class B Radiated Class A
Harmonic currents	EN61000-3-2	Full Load	Class A and D
Voltage flicker	EN61000-3-3		
ESD	EN61000-4-2	Air ± 8kV and Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	20 V/m	Perf. Criteria A
Fast transient	EN61000-4-4	± 2kV	Perf. Criteria A
Surge	EN61000-4-5	DM ± 1kV and CM ± 2kV	Perf. Criteria A
Conducted immunity	EN61000-4-6	20 Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8	10 A/m	Perf. Criteria A
Dip and interruptions	EN61000-4-11 and EN55024		

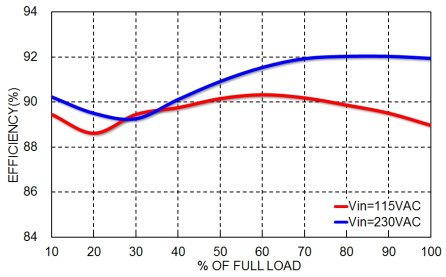
CHARACTERISTIC CURVE



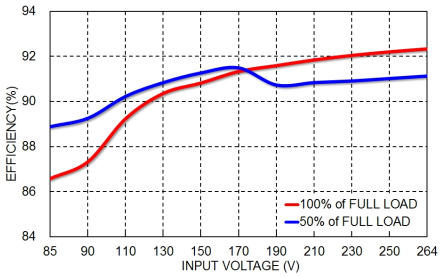
Derating Curve vs. Ambient Temperature
T□F150



Derating Curve vs. Input Voltage
T□F150



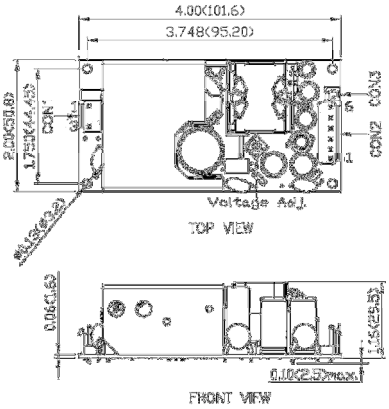
Efficiency vs. Output Load
T□F150US24



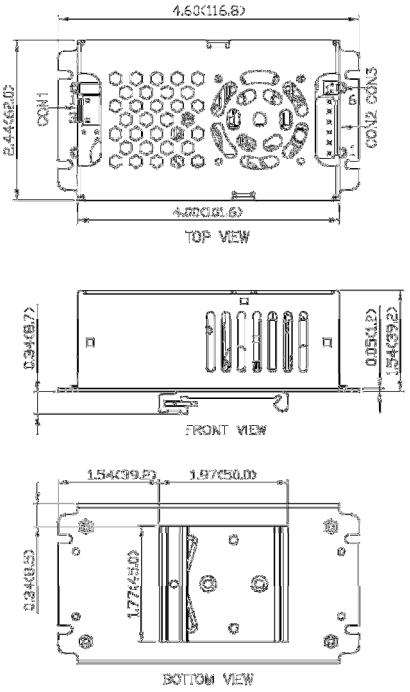
Efficiency vs. Input Voltage
T□F150US24

MECHANICAL DRAWING

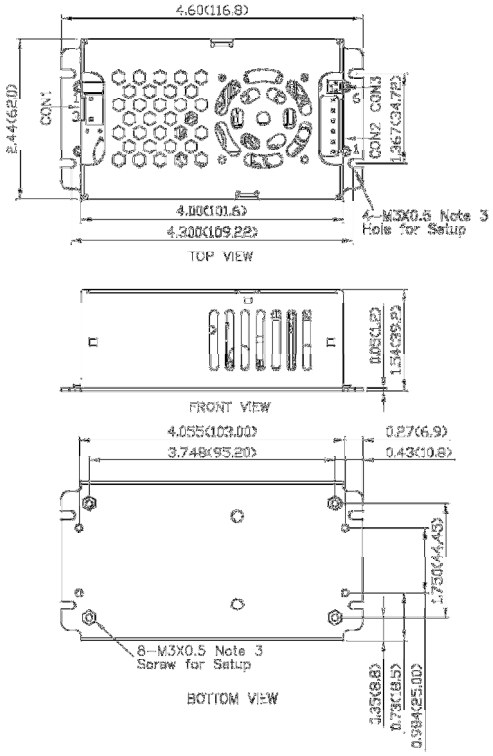
TAF Open type



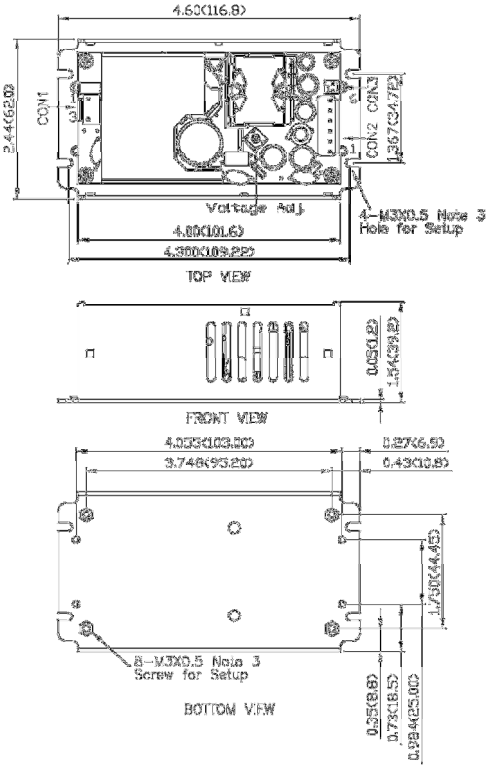
TDF Din rail type



TEF Enclosed type



TUF U chassis type



1. All dimensions in inch (mm)
2. Tolerance : x.xx±0.02 (x.x±0.5) x.xxx±0.01 (x.xx±0.25)
3. M3×0.5 screw locked torque MAX 5Kgf.cm/0.49N.m

CONNECTORS CONNECTIONS

CON1 – Input Connector	
Pin 1	Line
Pin 3	Neutral

Mates with
JST housing : **VHR-3N**
JST crimp terminals : **SVH-21T-P1.1**

CON2 – Output Connector	
Pin 1,2,3	-Vout
Pin 4,5,6	+Vout

Mates with
JST housing : **VHR-6N**
JST crimp terminals : **SVH-21T-P1.1**

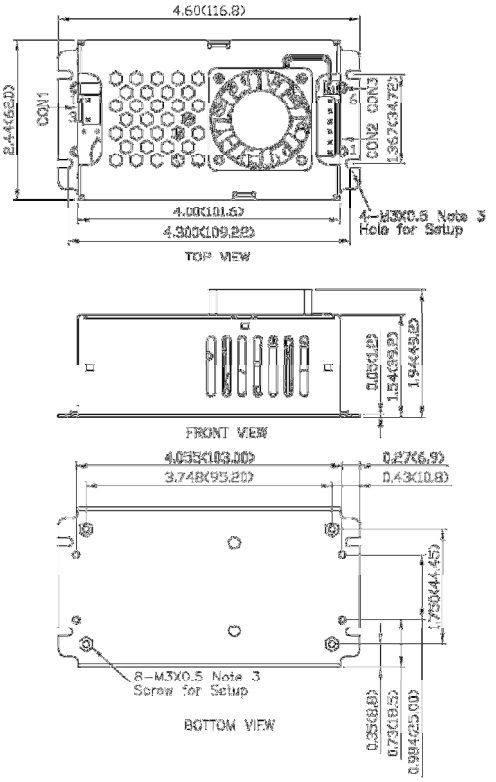
CON3 – Fan Connector	
Pin 1	-Fan
Pin 2	+Fan

Mates with
Molex housing : **22-01-1022**
Molex crimp terminals : **2759**

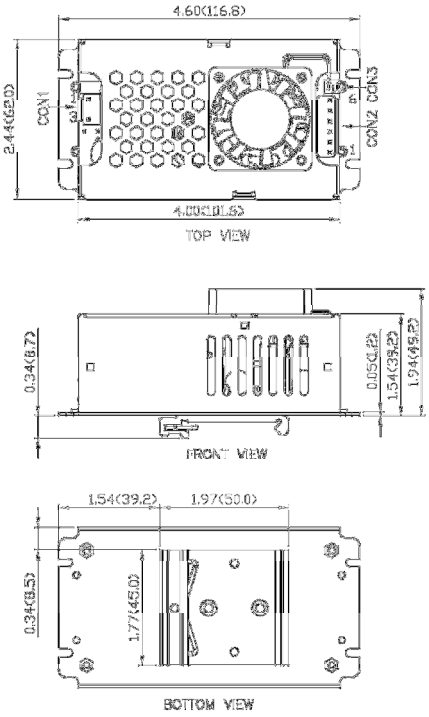
Mounting holes marked with ⏚
must be connected to safety earth for CLASS I application

MECHANICAL DRAWING

TEF -F Enclosed type with FAN



TDF -F Din rail type with FAN



1. All dimensions in inch (mm)
2. Tolerance : x.xx±0.02 (x.x±0.5) x.xxx±0.01 (x.xx±0.25)
3. M3×0.5 screw locked torque MAX 5Kgf.cm/0.49N.m

CONNECTORS CONNECTIONS

CON1 – Input Connector

Pin 1	Line
Pin 3	Neutral

Mates with
JST housing : **VHR-3N**
JST crimp terminals : **SVH-21T-P1.1**

CON2 – Output Connector

Pin 1,2,3	-Vout
Pin 4,5,6	+Vout

Mates with
JST housing : **VHR-6N**
JST crimp terminals : **SVH-21T-P1.1**

CON3 – Fan Connector

Pin 1	-Fan
Pin 2	+Fan

Mates with
Molex housing : **22-01-1022**
Molex crimp terminals : **2759**

Mounting holes marked with ⏚
must be connected to safety earth for CLASS I application