P-DUKE POWER

TAD125 Series

2 X 3 Inch AC-DC POWER SUPPLIES
Up to 125 Watts

3 YEARS WARRANTY

RoHS COMPLIANT

REACH COMPLIANT

+85°C / -40°C AMBIENT TEMP.

Automation | Datacom | IPC

Industry | Measurement | Telecom

Automobile | Boat | Charger

Medical | PV | Railway

PEAK POWER | 3000 VAC Reinforced Insulation | ADJ. Output Voltage | Internal EN55032 Class B Filter | LOW Leakage Current | LOW Standby Power | Protection Class I Class II | Operating Altitude 5000 meter | OCP | OVP | SCP

PART NUMBER STRUCTURE

T	A	D	125	U	S	12	B	-	□	□	□
Application	**Package Code**	**Dimension Code**	**Output Power (W)**	**Input Voltage (VAC)**	**Output Quantity**	**Output Voltage (VDC)**	**Protection Type**		**Connector Options**	**Application Options**	**Conformal Coating Options**
Industry Application	**A:**Open type **U:**U chassis type **E:**Enclosed type **D:**Din rail type			**U:** Universal 85 ~ 264VAC	**S:** Single	**12:**12V **15:**15V **18:**18V **24:**24V **28:**28V **36:**36V **48:**48V	**B:**CLASS II **□:**CLASS I		**□:** JST **M:** Molex **T:** Terminal Block	**□:** None **C:** OVC III□	**□:** None **R:** Conformal Coating

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

Model Number	Input Range	Output Voltage	Output Current		Input Power No Load	Efficiency	Maximum Capacitor Load
			Natural Convection	Forced Air Cooling With 400LFM			
	VAC	VDC	A	A	W	%	μF
TAD125US12B TUD125US12B TED125US12B TDD125US12B	85 ~ 264	12	8.34	10.42	0.3	91	8700
TAD125US15B TUD125US15B TED125US15B TDD125US15B	85 ~ 264	15	6.67	8.34	0.3	92	5600
TAD125US18B TUD125US18B TED125US18B TDD125US18B	85 ~ 264	18	5.56	6.95	0.3	92	3900
TAD125US24B TUD125US24B TED125US24B TDD125US24B	85 ~ 264	24	4.17	5.21	0.3	92	2200
TAD125US28B TUD125US28B TED125US28B TDD125US28B	85 ~ 264	28	3.58	4.47	0.3	92	1600
TAD125US36B TUD125US36B TED125US36B TDD125US36B	85 ~ 264	36	2.78	3.48	0.3	91	1000
TAD125US48B TUD125US48B TED125US48B TDD125US48B	85 ~ 264	48	2.09	2.61	0.3	91	550

INPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating input voltage range	AC input DC input	85 120		264 370	VAC VDC
Input frequency	AC input	47		63	Hz
Input current	100VAC and Full Load 240VAC and Full Load			1.8 0.7	A
No load input power	230VAC			0.3	Watts
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	18			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 400LFM Natural convection				125 100	Watts
Output peak power	Peak power Peak power (130~264Vac) Peak power time Peak power duty Average operation power (% of Full Load)			 10 20 55	140 150	Watts Watts s % %
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 10% Load to 90% Load		-0.5 -0.4		+0.5 +0.4	%
Voltage adjustability	Trim down over than -10% with 0.25W dummy load		-20		+10	%
Minimum load				0		%
Ripple and noise	Measured by 20MHz bandwidth With a 10μF/25V 1206 X7R MLCC With a 1μF/50V 1206 X7R MLCC With a 0.1μF/100V 1206 X7R MLCC	 12Vout 15Vout 24Vout 28Vout 36Vout 48Vout		 140 150 160 180 190 340		 mVp-p
Temperature coefficient			-0.02		+0.02	%/℃
Transient response	Load step from 50 ~ 75% change at 2.5A/μs	Peak deviation Recovery time		 500	3	% Vout μs
Over voltage protection	% of Vout(nom); Latch mode		115		135	%
Over load protection	% of Iout rated; Hiccup mode		120		160	%
Short circuit protection			Continuous, automatics recovery			

GENERAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute (Reinforced insulation)	Input to Output Input (Output) to F.G.	4000 1500			VAC
Isolation resistance	500VDC		0.1			GΩ
Switching frequency				60		kHz
Safety approvals	IEC/ EN/ UL 62368-1 (OVC III)				UL:E193009 CB:UL(Demko)	
Weight		TAD TUD TED TDD			156g (5.50oz) 194g (6.84oz) 210g (7.41oz) 232g (8.18oz)	
MTBF	MIL-HDBK-217F Ta=25℃, Full load				7.903 x 10^5 hrs	

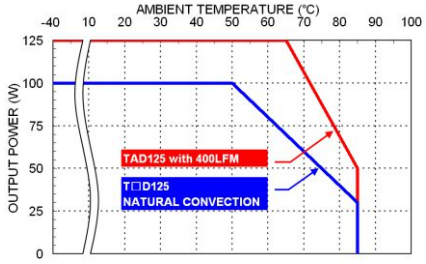
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating case temperature	Natural convection and Full load (with derating) -40℃ start up : 80% Load,max. @ Vin > 100VAC -40℃ start up : 100% Load,max. @ Vin > 200VAC	-40		+85	℃
Storage temperature range		-40		+85	℃
Operating altitude				5000	m
Shock					IEC60068-2-27
Vibration					IEC60068-2-6
Relative humidity	Non-condensing				5% to 95% RH

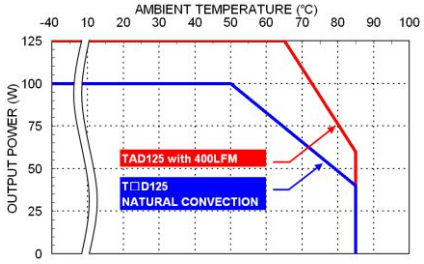
EMC SPECIFICATIONS

Parameter	Conditions		Level
EMI	EN55032 and FCC Part 15 External components may be required for class I application.		Conducted ClassB Radiated ClassA
Harmonic currents	EN61000-3-2	Full Load	Class A and D
Voltage flicker	EN61000-3-3		
EMS	EN55035		
ESD	EN61000-4-2		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		

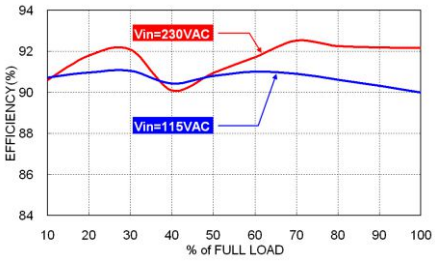
CHARACTERISTIC CURVE



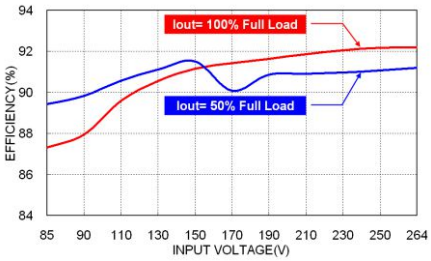
Derating Curve vs. Ambient Temperature
Vin=115VAC



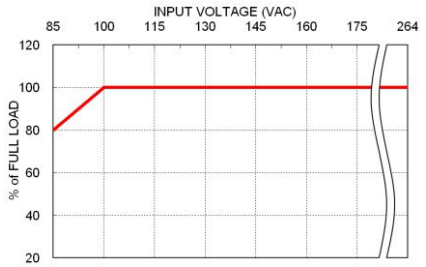
Derating Curve vs. Ambient Temperature
Vin=230VAC



T□D125US24B Efficiency vs. Output Load



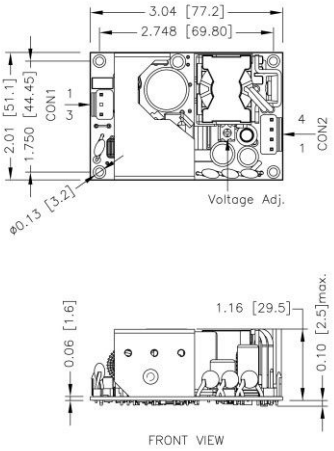
T□D125US24B Efficiency vs. Input Voltage



TAD125 Derating Curve vs. Input Voltage
Forced air cooling with 400LFM

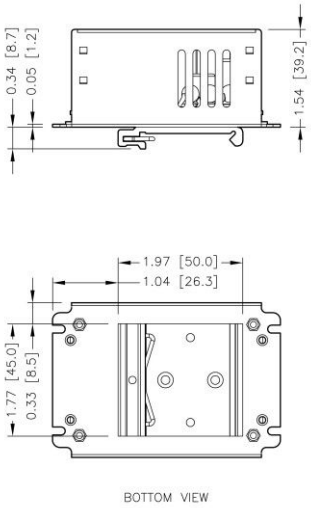
MECHANICAL DRAWING

TAD Open type



1.All dimensions in inch [mm]
2.Tolerance : x.xx±0.02 [x.x±0.5] x.xxx±0.010 [x.xx±0.25]
3.The screw locked torque: MAX 5.0Kgf-cm/0.49N-m

TDD Din rail type



1.All dimensions in inch [mm]
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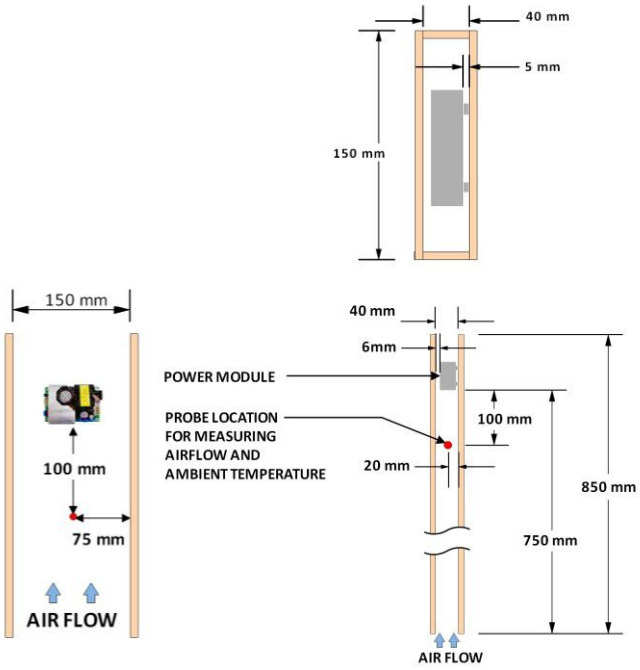


CONNECTORS CONNECTIONS

CON1 – Input Connector

Pin 1	Line
Pin 3	Neutral

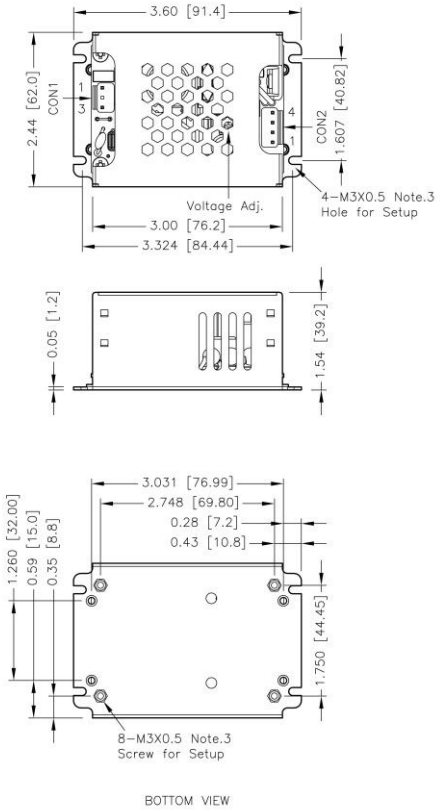
CON2 – Output Connector

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

*Either one of four screws holes of Open / Chassis type can be considered as PE connection for CLASS I application.

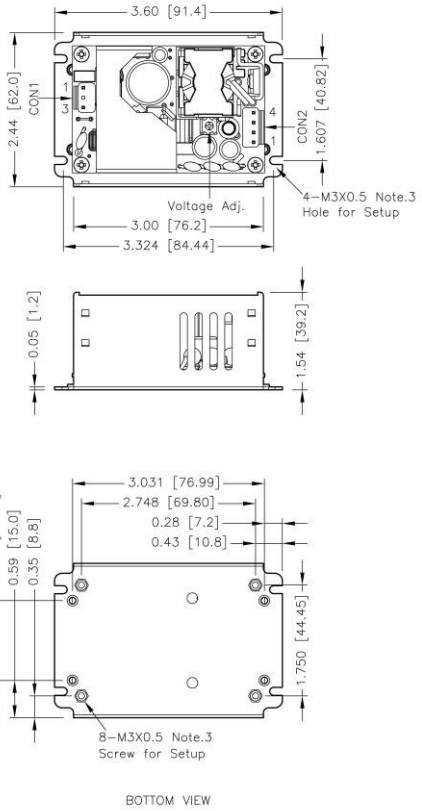
MECHANICAL DRAWING

TED Enclosed type



1.All dimensions in inch [mm]
2.Tolerance : x.xx±0.02 [x.x±0.5] x.xxx±0.010 [x.xx±0.25]
3.The screw locked torque: MAX 5.0Kgf-cm/0.49N-m

TUD U chassis type



1.All dimensions in inch [mm]
2.Tolerance : x.xx±0.02 [x.x±0.5] x.xxx±0.010 [x.xx±0.25]
3.The screw locked torque: MAX 5.0Kgf-cm/0.49N-m

CONNECTORS CONNECTIONS

CON1 – Input Connector

Pin 1	Line
Pin 3	Neutral

CON2 – Output Connector

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

*Either one of four screws holes of Open / Chassis type can be considered as PE connection for CLASS I application.

CONNECTOR OPTIONS

Blank: JST Type

Mates with housing
CON1: **VHR-3N**
CON2: **VHR-4N**

Crimp terminals
CON1: **SVH-21T-P1.1**
CON2: **SVH-21T-P1.1**

-M Molex Type

Mates with housing
CON1: **09-50-8031**
CON2: **09-50-8041**

Crimp terminals
CON1: **SD-2478**
CON2: **SD-2478**

-T Terminal Block

Screw locked torque
MAX 2Kgf.cm/0.2N.m

Wire dimension range
26 ~ 16AWG

P-DUKE

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