



P-DUKE POWER

TAD40 Single Series

2 X 3 Inch AC-DC POWER SUPPLIES
Up to 40 Watts

3

YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT

+85°C
-40°C
AMBIENT TEMP.



Automation



Datacom



IPC



Industry



Measurement



Telecom



Medical



Automobile



Boat



Charger



PV



Railway

UL US

CB

CE

FC

POWER
SAVE

PFC
Integrated

3000
VAC
Reinforced
Insulation

ADJ.
Output
Voltage

Internal
EN55032
Class
Filter **B**

LOW
Leakage
Current

LOW
Standby
Power

Operating
Altitude
5000
meter

Protection
Class I
Class II

OCP

OVP

SCP

PART NUMBER STRUCTURE

T	A	D	40	U	S	12	B	-	□
Application	Package Code	Dimension Code	Output Power (W)	Input Voltage (VAC)	Output Quantity	Output Voltage (VDC)	Protection Type		Connector Option
Industry Application	A: Open type U: U chassis type E: Enclosed type D: Din rail type			U: Universal 85 ~ 264	S: Single	05: 5 7P5: 7.5 09: 9 12: 12 121: 12 15: 15 151: 15 18: 18 24: 24 28: 28 36: 36 48: 48 53: 53	B: CLASS II Blank: CLASS I		Blank: JST M: Molex T: Terminal Block

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

Model Number	Input Range	Output Voltage	Output Current Natural convection	Max. Output Power	Input Power @ No Load	Efficiency
	VAC	VDC	A	W	W	%
TAD40US05B	85 ~ 264	5	8	40	0.11	90
TUD40US05B						
TED40US05B						
TDD40US05B						
TAD40US7P5B	85 ~ 264	7.5	5.34	40	0.11	90
TUD40US7P5B						
TED40US7P5B						
TDD40US7P5B						
TAD40US09B	85 ~ 264	9	4.45	40	0.11	91
TUD40US09B						
TED40US09B						
TDD40US09B						
TAD40US12B	85 ~ 264	12	3.34	40	0.11	92
TUD40US12B						
TED40US12B						
TDD40US12B						
TAD40US121B	85 ~ 264	12	3.34	40	0.11	90
TUD40US121B						
TED40US121B						
TDD40US121B						
TAD40US15B	85 ~ 264	15	2.67	40	0.11	92
TUD40US15B						
TED40US15B						
TDD40US15B						
TAD40US151B	85 ~ 264	15	2.67	40	0.11	90
TUD40US151B						
TED40US151B						
TDD40US151B						
TAD40US18B	85 ~ 264	18	2.23	40	0.11	91
TUD40US18B						
TED40US18B						
TDD40US18B						
TAD40US24B	85 ~ 264	24	1.67	40	0.11	92
TUD40US24B						
TED40US24B						
TDD40US24B						
TAD40US28B	85 ~ 264	28	1.43	40	0.11	91
TUD40US28B						
TED40US28B						
TDD40US28B						
TAD40US36B	85 ~ 264	36	1.12	40	0.11	92
TUD40US36B						
TED40US36B						
TDD40US36B						
TAD40US48B	85 ~ 264	48	0.84	40	0.11	93
TUD40US48B						
TED40US48B						
TDD40US48B						
TAD40US53B	85 ~ 264	53	0.77	40	0.11	92.5
TUD40US53B						
TED40US53B						
TDD40US53B						

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	100VAC and Full Load				1.0	A
	240VAC and Full Load				0.5	A
No load input power	230VAC			0.11		Watts
Leakage current	264VAC				75	μA
Start up time					1000	ms
Rise time				20		ms
Hold up time	115VAC and Full Load			25		ms
Input inrush current	230VAC				60	A
Input protection	Internal fuse				T3.15A/250VAC	

OUTPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Output power					40	Watts
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	5Vout	-0.7		+0.7	%
		Others	-0.5		+0.5	
	10% Load to 90% Load	5Vout	-0.6		+0.6	
		Others	-0.4		+0.4	
Voltage adjustability	Single output	53Vout	-20		+10	%
		Others	-10		+10	
Minimum load				0		%
Ripple and noise	Measured by 20MHz bandwidth					mVp-p
	With a 10μF/25V 1206 X7R MLCC			75		
	With a 1μF/50V 1206 X7R MLCC			75		
	With a 0.1μF/100V 1206 X7R MLCC			150		
Temperature coefficient			-0.02		+0.02	%/°C
Transient response	Load step from 50 ~ 75% change at 2.5A/μs	Peak deviation			3	%Vout
		Recovery time		600		μs
Over voltage protection	% of Vout(nom); Latch mode		125		140	%
Over load protection	% of Iout rated; Hiccup mode			145		%
Short circuit protection						Continuous, automatic recovery

GENERAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute (Reinforced insulation)	Input to Output	3000			VAC
		Input (Output) to F.G.	2500			
Isolation resistance	500VDC		0.1			GΩ
Switching frequency	230VAC	5Vout		70		kHz
		Others		120		
Safety approvals	IEC/ EN/ UL60950-1				UL:E193009 CB:UL(Demko)	
Weight		TAD			114g (4.02oz)	
		TUD			154g (5.43oz)	
		TED			169g (5.96oz)	
		TDD			190g (6.70oz)	
MTBF	MIL-HDBK-217F, Full load				3.010 x 10 ⁶	hrs

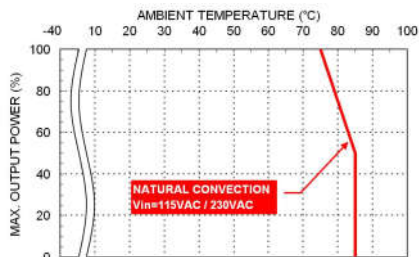
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	Natural convection With derating	-40		+85	°C
Storage temperature range		-40		+85	°C
Operating altitude				5000	m
Shock				IEC60068-2-27	
Vibration				IEC60068-2-6	
Relative humidity	Non-condensing			5% to 95% RH	

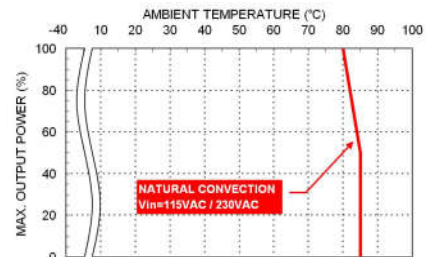
EMC SPECIFICATIONS

Parameter	Conditions	Level
EMI	EN55011, EN55032 and FCC Part 15 External components may be required for class I application.	Conducted Class B Radiated Class B
Harmonic currents	EN61000-3-2 Full Load	Class A
Voltage flicker	EN61000-3-3	
EMS	EN55024 and Complies with EN 61850-3	
ESD	EN61000-4-2 Air $\pm 15\text{kV}$ and Contact $\pm 6\text{kV}$	Perf. Criteria A
Radiated immunity	EN61000-4-3 20 V/m	Perf. Criteria A
Fast transient	EN61000-4-4 $\pm 4\text{kV}$	Perf. Criteria A
Surge	EN61000-4-5 DM $\pm 2\text{kV}$ and CM $\pm 4\text{kV}$	Perf. Criteria A
Conducted immunity	EN61000-4-6 20 Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8 100 A/m	Perf. Criteria A
Dip and interruptions	EN61000-4-11 230VAC 50Hz 30% 20mS 30% 500mS 60% 1000mS >95% 10mS >95% 5000mS	Perf. Criteria A Perf. Criteria A Perf. Criteria A Perf. Criteria A Perf. Criteria B
Damped Oscillatory Wave	EN 61000-4-18 DM $\pm 1\text{kV}$ and CM $\pm 2.5\text{kV}$	Perf. Criteria A

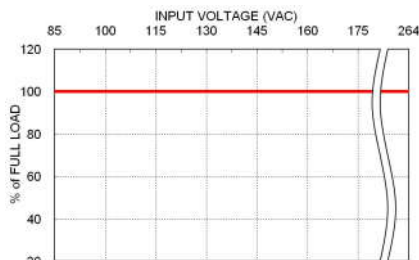
CHARACTERISTIC CURVE



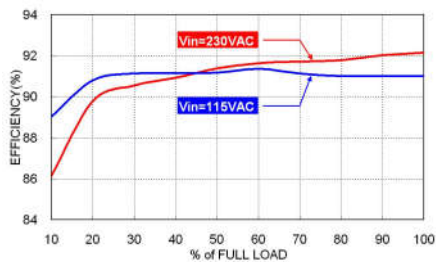
Derating Curve vs. Ambient Temperature
T□D40USxxB xx=5/7P5/9/121/151/28



Derating Curve vs. Ambient Temperature
T□D40USxxB xx=12/15/24/36/48/53



T□D40 Derating Curve vs. Input Voltage



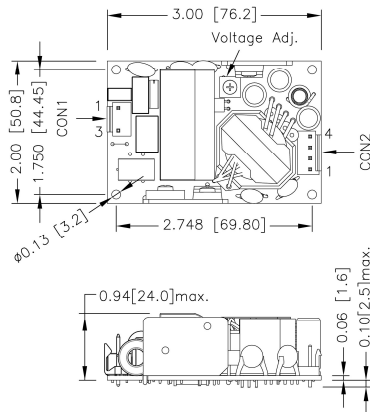
T□D40US24B Efficiency vs. Output Load



T□D40US24B Efficiency vs. Input Voltage

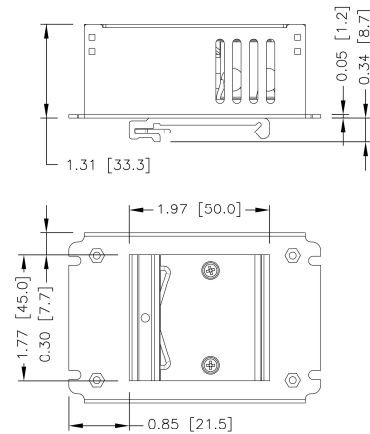
MECHANICAL DRAWING

TAD Open type



FRONT VIEW

TDD Din rail type



BOTTOM VIEW

1. All dimensions in inch [mm]
2. Tolerance : $x.xx \pm 0.02$ [$x.xx \pm 0.5$] $x.xxx \pm 0.01$ [$x.xx \pm 0.25$]
3. M3×0.5 screw locked torque MAX 5Kgf.cm/0.49N.m

CONNECTORS CONNECTIONS

CON1 – Input Connector

Pin 1	Line
Pin 3	Neutral

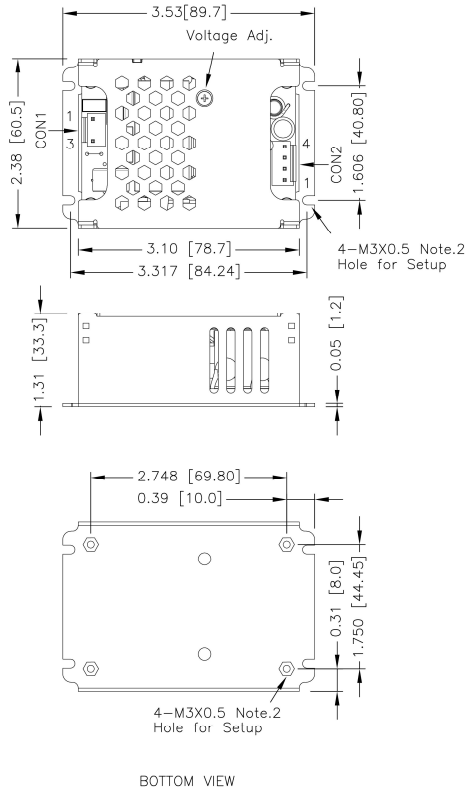
CON2 – Output Connector

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

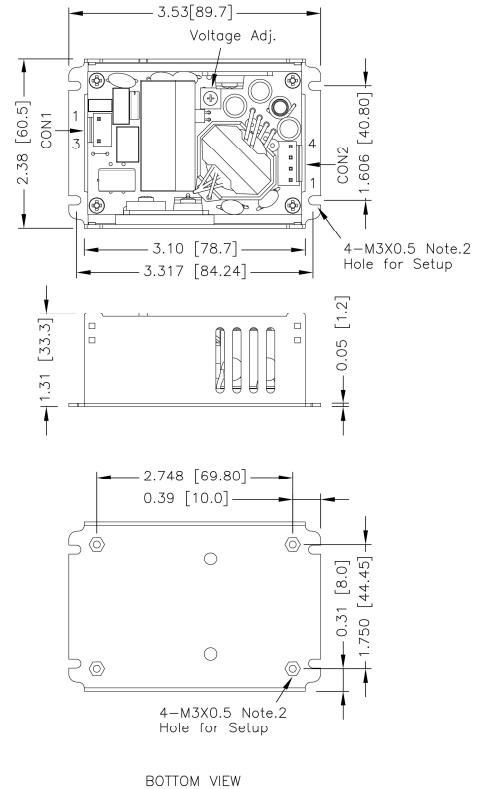
*Either one of four screws holes of Open / Chassis type can be considered as PE connection for CLASS I application.

MECHANICAL DRAWING(CONTINUED)

TED Enclosed type



TUD U chassis type



1. All dimensions in inch [mm]
2. Tolerance : x.xxx±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

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**

