P-DUKE POWER

TAD40 Multi Series

2 X 3.5 Inch AC-DC POWER SUPPLIES
Up to 40 Watts

3 YEARS WARRANTY

RoHS COMPLIANT

REACH COMPLIANT

Automation | Datacom | IPC

Industry | Measurement | Telecom

Automobile | Boat | Charger

Medical | PV | Railway

c UL us | CB | CE | FC

POWER SAVE

3000 VAC Isolation Voltage | ADJ. Output Voltage | Internal EN55032 Class B Filter | LOW Cross Reg. | LOW Leakage Current | LOW Standby Power | Operating Altitude 5000 meter | Protection Class I Class II | OPP | OVP | SCP

PART NUMBER STRUCTURE

TAD	40	U	□	□	□	□	□	B	-	xx	yy	-	□
Series Name	**Output Power (W)**	**Input Voltage (VAC)**	**Output Quantity**	**Output Voltage 1 (VDC)** Vo1	**Output Voltage 2 (VDC)** Vo2	**Output Voltage 3** polarity Vo3 (Triple only)	**Output Voltage 3 (VDC)**	**Protection Type**		**Vo2 Voltage Code**	**Vo3 Voltage Code**		**Connector Option**
TAD: Open type **TUD:** U chassis type **TED:** Enclosed type **TDD:** Din rail type		**U:**Universal 85 ~ 264VAC	**D:**Dual **T:**Triple	**3:** 5V **4:** 7.5V **5:** 9V **6:** 12V **7:** 15V **8:** 18V **9:** 24V **0:** 28V	**1:** 2.5V **2:** 3.3V **3:** 5V **x:** refer to Suffix xx	**M:** Minus **__:** Positive	**1:** 2.5V **2:** 3.3V **3:** 5V **4:** 7.5V **5:** 9V **6:** 12V **7:** 15V **8:** 18V **9:** 24V **y:** refer to Suffix yy	**B:** CLASS II **No:** CLASS I					**Blank:** JST **M:** Molex **T:** Terminal Block

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

Model Number	Output 1			Output 2			Output 3		Max. Output Power	Efficiency
	Voltage	Current (Normal)	Current (MAX)	Voltage	Current (Normal)	Current (MAX)	Voltage	Current (MAX)		
	VDC	A	A	VDC	A	A	VDC	A	W	%
TAD40UD32B TUD40UD32B TED40UD32B TDD40UD32B	+5	5	8	+3.3	4	6			40	89.5
TAD40UD63B TUD40UD63B TED40UD63B TDD40UD63B	+12	2.1	3.34	+5	4	6			40	89
TAD40UD62B TUD40UD62B TED40UD62B TDD40UD62B	+12	2.1	3.34	+3.3	4	6			40	90
TAD40UD73B TUD40UD73B TED40UD73B TDD40UD73B	+15	1.7	2.67	+5	4	6			40	88.5
TAD40UD93B TUD40UD93B TED40UD93B TDD40UD93B	+24	1.05	1.67	+5	4	6			40	86
TAD40UD03B TUD40UD03B TED40UD03B TDD40UD03B	+28	0.72	1.43	+5	4	6			40	85.5
TAD40UT32M3B TUD40UT32M3B TED40UT32M3B TDD40UT32M3B	+5	5	8	+3.3	4	6	-5	0.5	40	89
TAD40UT326B TUD40UT326B TED40UT326B TDD40UT326B	+5	5	8	+3.3	4	6	+12	0.5	40	89
TAD40UT32M6B TUD40UT32M6B TED40UT32M6B TDD40UT32M6B	+5	5	8	+3.3	4	6	-12	0.5	40	89
TAD40UT63M3B TUD40UT63M3B TED40UT63M3B TDD40UT63M3B	+12	2.1	3.34	+5	4	6	-5	0.5	40	88.5
TAD40UT63M6B TUD40UT63M6B TED40UT63M6B TDD40UT63M6B	+12	2.1	3.34	+5	4	6	-12	0.5	40	88

Model Number	Output 1			Output 2			Output 3		Max. Output Power	Efficiency
	Voltage VDC	Current (Normal) A	Current (MAX) A	Voltage VDC	Current (Normal) A	Current (MAX) A	Voltage VDC	Current (MAX) A	W	%
TAD40UT623B TUD40UT623B TED40UT623B TDD40UT623B	+12	2.1	3.34	+3.3	4	6	+5	0.5	40	88.5
TAD40UT62M6B TUD40UT62M6B TED40UT62M6B TDD40UT62M6B	+12	2.1	3.34	+3.3	4	6	-12	0.5	40	88
TAD40UT73M7B TUD40UT73M7B TED40UT73M7B TDD40UT73M7B	+15	1.7	2.67	+5	4	6	-15	0.5	40	88
TAD40UT936B TUD40UT936B TED40UT936B TDD40UT936B	+24	1.05	1.67	+5	4	6	+12	0.5	40	86
TAD40UT93M6B TUD40UT93M6B TED40UT93M6B TDD40UT93M6B	+24	1.05	1.67	+5	4	6	-12	0.5	40	86

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 240VAC			1.05 0.55	A
No load input power	230VAC			0.15	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	Pout1+Pout2+Pout3					40	Watts
Initial set voltage accuracy	230VAC and Full Load	Vout 1 Vout 2、Vout 3		-1.0 -2.0		+1.0 +2.0	%
Line regulation	Low Line to High Line at Full Load			-0.2		+0.2	%
Load regulation	No Load to Full Load	Vout 1 Vout 3		-0.5 -0.7		+0.5 +0.7	%
	No Load to Full Load 0.1W Load to Full Load	Vout 2		-1.5 -0.7		+1.5 +0.7	%
Cross regulation	Asymmetrical load 25%/100% FL			-1.5		+1.5	%
Voltage adjustability		Vout 1		-10		+10	%
Minimum load	T□D40UD□□ T□D40UT□□□; Vout 3 is full load	Vout 1 + Vout 2			0 0.5		W
Ripple and noise	Measured by 20MHz bandwidth With a 10μF/25V 1206 X7R MLCC With a 1μF/50V 1206 X7R MLCC With a 10μF/25V 1206 X7R MLCC With a 10μF/25V 1206 X7R MLCC 	 Vout 1 Vout 1 Vout 2 Vout 3 	 5V 12V 15V 24V 28V All 5V 12V 15V		 100 120 150 240 280 100 100 120 150		mVp-p
Temperature coefficient				-0.02		+0.02	%/℃
Transient response	Load step form 50 ~ 75% change at 2.5A/μs	Vout 1	Peak deviation Recovery time		 600	3	%Vout μs
Over voltage protection	% of Vout(nom); Latch mode	Vout 1		125		140	%
Over power protection	% of nominal output power; Hiccup mode	Pout 1 + Pout 2			145		%
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.		3000 2500			VAC
Isolation resistance	500VDC			0.1			GΩ
Switching frequency	230VAC	Vout 1 Vout 2 Vout 3	5V Others		70 115 750 510		kHz
Safety approvals	IEC/ EN/ UL 60950-1					UL:E193009 CB:UL(Demko)	
Weight		TAD TUD TED TDD				150 (5.29oz) 198 (6.98oz) 216 (7.62oz) 238 (8.40oz)	
MTBF	MIL-HDBK-217F, Full load					1.716 x 10^6 hrs	

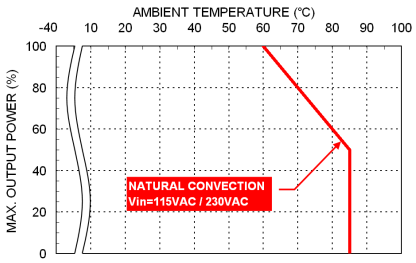
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature	Natural convection	With derating	-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	

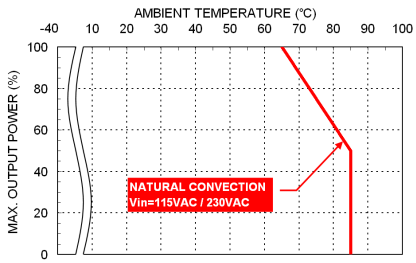
EMC SPECIFICATIONS

Parameter	Conditions			Level
EMI	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			
ESD	EN61000-4-2	Air ± 15kV and Contact ± 6kV		Perf. Criteria A
Radiated immunity	EN61000-4-3	20 V/m		Perf. Criteria A
Fast transient	EN61000-4-4	± 4kV		Perf. Criteria A
Surge	EN61000-4-5	DM ± 2kV and CM ± 4kV		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	30% 20mS	Perf. Criteria A
		50Hz	30% 500mS	Perf. Criteria A
			60% 1000mS	Perf. Criteria A
			>95% 10mS	Perf. Criteria A
			>95% 5000mS	Perf. Criteria B
Damped Oscillatory Wave	EN 61000-4-18	DM ± 1kV and CM ± 2.5kV		Perf. Criteria A

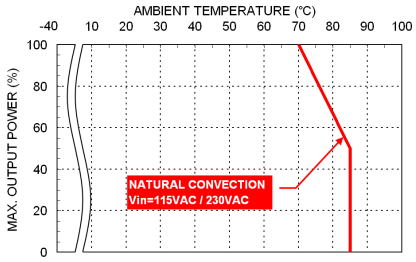
CHARACTERISTIC CURVE



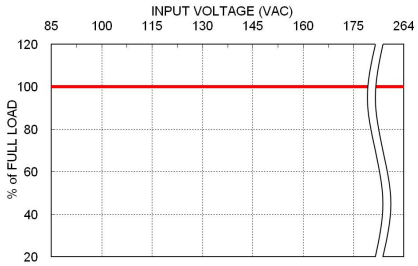
T□D40UDxxB xx=03/93
T□D40UTxxxB xxx=32M3/326/32M6/936/93M6



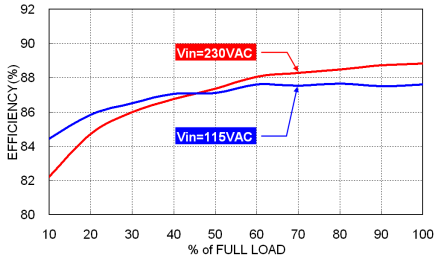
T□D40UDxxB xx=32/62
T□D40UTxxxB xxx=623/62M6



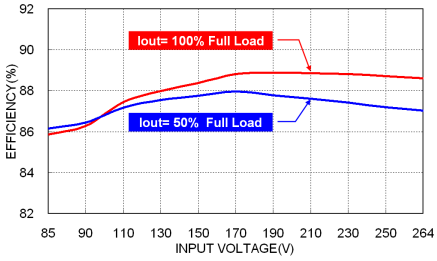
T□D40UDxxB xx=63/73
T□D40UTxxxB xxx=63M3/63M6/73M7



T□D40 Derating Curve vs. Input Voltage



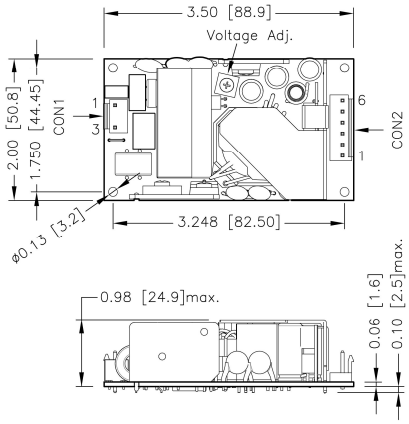
T□D40UT63M6B Efficiency VS Output Load



T□D40UT63M6B Efficiency VS Input Voltage

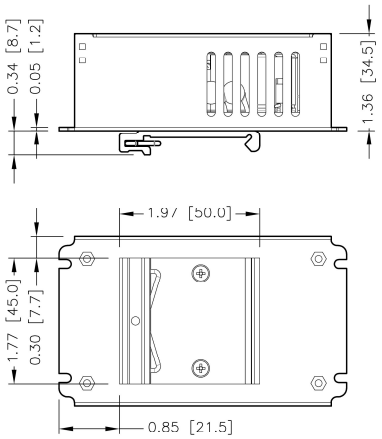
MECHANICAL DRAWING

TAD Open type



FRONT VIEW

TDD Din rail type



BOTTOM VIEW

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

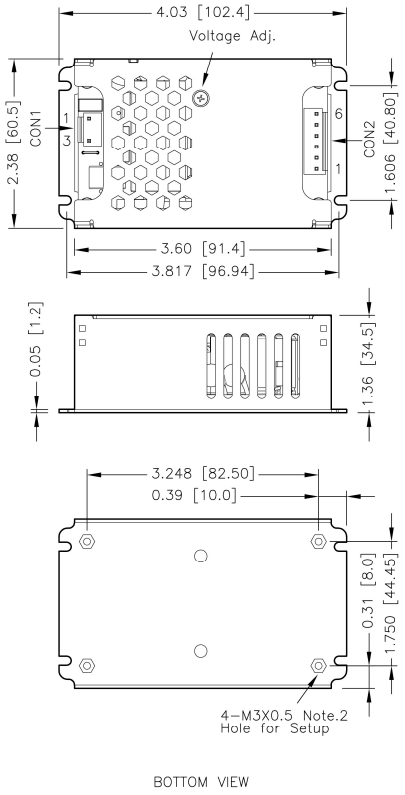
CON2 – Output Connector

Pin 1	Vout3
Pin 2,3	Com
Pin 4,5	Vout2
Pin 6	Vout1

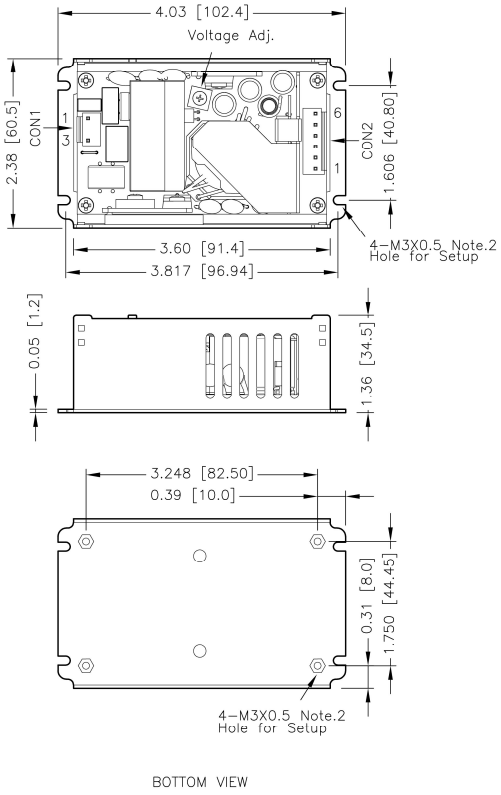
*Either one of four screws holes of Open / Chassis type can be considered as PE connection for CLASS I application.

MECHANICAL DRAWING (CONTINUED)

TED Enclosed type



TUD U chassis type



1. All dimensions in inch [mm]
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Pin 1	Vout3
Pin 2,3	Com
Pin 4,5	Vout2
Pin 6	Vout1

*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-6N**

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

-M Molex Type

Mates with housing
CON1: **09-50-8031**
CON2: **09-50-8061**

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 Technology Co., Ltd.
Tel +886-4-2359-0668
Fax +886-4-2359-1337
Email sale@pduke.com
Web www.pduke.com
Add No. 36, 22nd Rd., Taichung Industrial Park, Taichung, Taiwan, R.O.C.