P-DUKE POWER

TAD65 Multi Series

2 X 3.5 Inch AC-DC POWER SUPPLIES
Up to 65 Watts

3 YEARS WARRANTY

RoHS COMPLIANT

REACH COMPLIANT

Automation
Datacom
IPC
Industry
Measurement
Telecom
Automobile
Boat
Charger
Medical
PV
Railway

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	65	U	□	□	□	□	□	B	-	xx	yy	-	□
Series Name	**Output Power (W)**	**Input Voltage (VAC)**	**Output Quantity**	**Output Voltage 1 (VDC)**	**Output Voltage 2 (VDC)**	**Output Voltage 3 polarity**	**Output Voltage 3 (VDC)**	**Protection Type**		**Vo2 Voltage Code**	**Vo3 Voltage Code**		**Connector Option**
				Vo1	Vo2	Vo3 (Triple only)							
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	%
TAD65UD32B TUD65UD32B TED65UD32B TDD65UD32B	+5	6	10	+3.3	6	8			50	88.5
TAD65UD63B TUD65UD63B TED65UD63B TDD65UD63B	+12	3	5.42	+5	6	8			65	90
TAD65UD62B TUD65UD62B TED65UD62B TDD65UD62B	+12	3	5.42	+3.3	6	8			65	89.5
TAD65UD73B TUD65UD73B TED65UD73B TDD65UD73B	+15	2.4	4.34	+5	6	8			65	90.5
TAD65UD93B TUD65UD93B TED65UD93B TDD65UD93B	+24	1.5	2.71	+5	6	8			65	89
TAD65UD03B TUD65UD03B TED65UD03B TDD65UD03B	+28	1.25	2.33	+5	6	8			65	88
TAD65UT32M3B TUD65UT32M3B TED65UT32M3B TDD65UT32M3B	+5	6	10	+3.3	6	8	-5	0.6	50	88
TAD65UT326B TUD65UT326B TED65UT326B TDD65UT326B	+5	6	10	+3.3	6	8	+12	0.6	50	88
TAD65UT32M6B TUD65UT32M6B TED65UT32M6B TDD65UT32M6B	+5	6	10	+3.3	6	8	-12	0.6	50	88
TAD65UT63M3B TUD65UT63M3B TED65UT63M3B TDD65UT63M3B	+12	3	5.42	+5	6	8	-5	0.6	65	89.5
TAD65UT63M6B TUD65UT63M6B TED65UT63M6B TDD65UT63M6B	+12	3	5.42	+5	6	8	-12	0.6	65	89

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	%
TAD65UT623B TUD65UT623B TED65UT623B TDD65UT623B	+12	3	5.42	+3.3	6	8	+5	0.6	65	89
TAD65UT62M6B TUD65UT62M6B TED65UT62M6B TDD65UT62M6B	+12	3	5.42	+3.3	6	8	-12	0.6	65	88.5
TAD65UT73M7B TUD65UT73M7B TED65UT73M7B TDD65UT73M7B	+15	2.4	4.34	+5	6	8	-15	0.6	65	89.5
TAD65UT936B TUD65UT936B TED65UT936B TDD65UT936B	+24	1.5	2.71	+5	6	8	+12	0.6	65	88.5
TAD65UT93M6B TUD65UT93M6B TED65UT93M6B TDD65UT93M6B	+24	1.5	2.71	+5	6	8	-12	0.6	65	88.5

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			1.65 0.95	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		16		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	Vout 1	5V Others			50 65	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□D65UD□□ T□D65UT□□□; 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		60 115 750 510		kHz
Safety approvals	IEC/ EN/ UL 60950-1					UL:E193009 CB:UL(Demko)	
Weight		TAD TUD TED TDD				155g (5.47oz) 203g (7.16oz) 221g (7.80oz) 243g (8.57oz)	
MTBF	MIL-HDBK-217F, Full load					1.059 x 10^6 hrs	

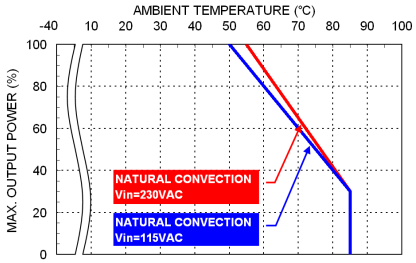
ENVIRONMENTAL SPECIFICATIONS

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	

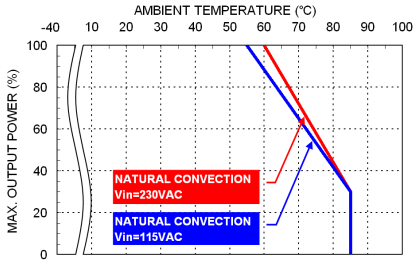
EMC SPECIFICATIONS

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 50Hz	30%	20mS	Perf. Criteria A
			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

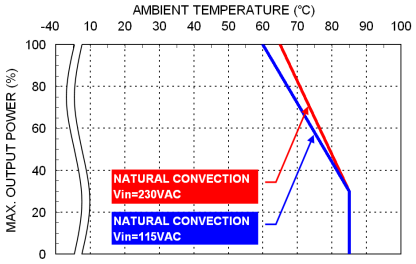
CHARACTERISTIC CURVE



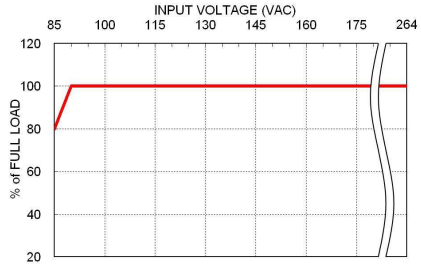
T☐D65UDxxB xx=03
T☐D65UTxxxB xxx=32M3/326/32M6



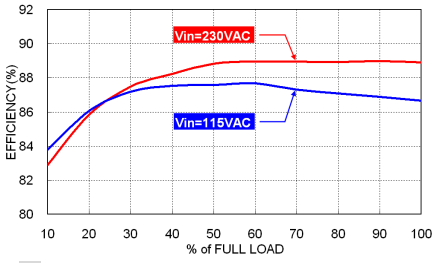
T☐D65UDxxB xx=32/62/93
T☐D65UTxxxB xxx=623/62M6/936/93M6



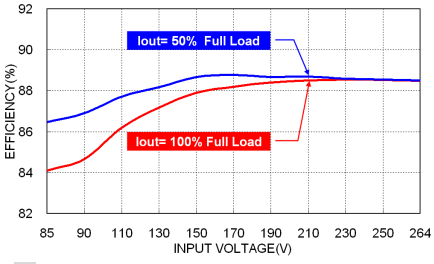
T☐D65UDxxB xx=63/73
T☐D65UTxxxB xxx=63M3/63M6/73M7



T☐D65 Derating Curve vs. Input Voltage



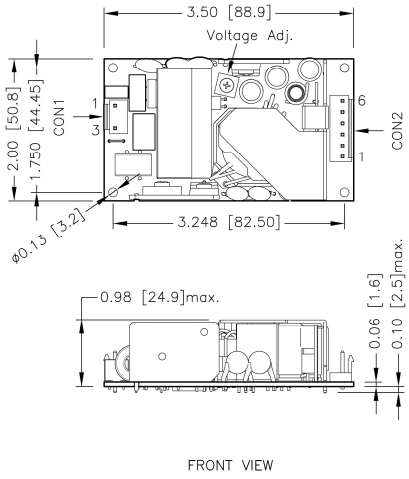
T☐D65UT63M6B Efficiency VS Output Load



T☐D65UT63M6B Efficiency VS Input Voltage

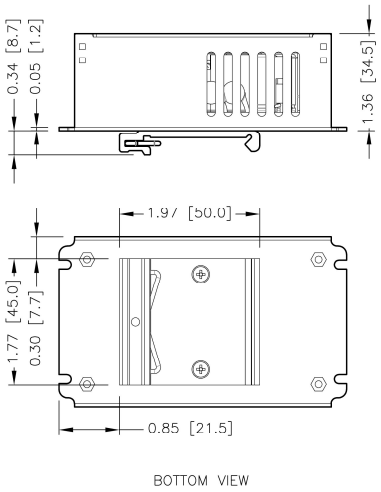
MECHANICAL DRAWING

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

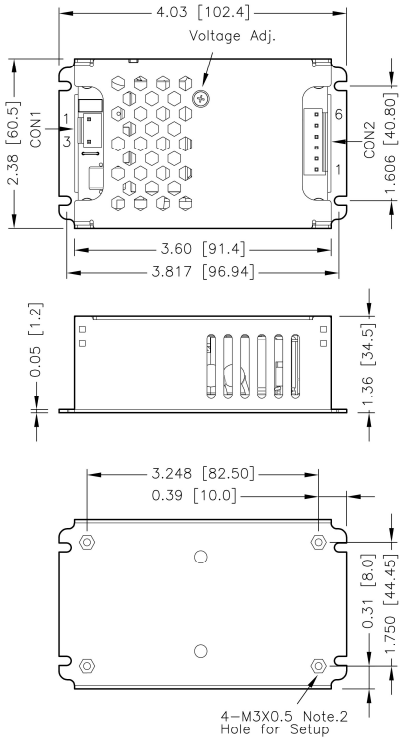
CON2 – Output Connector

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

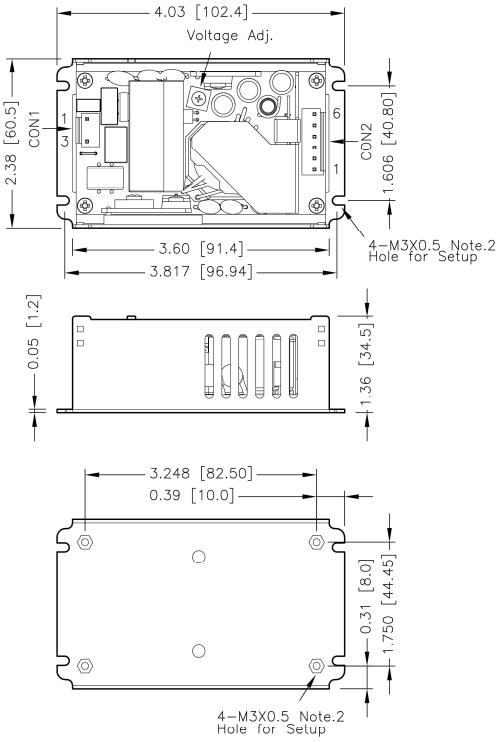
*Either one of four screws holes of Open / Chassis type can be considered as PE connection for CLASS I application.

MECHANICAL DRAWING (CONTINUED)

TED Enclosed type



TUD U chassis type



1. All dimensions in inch [mm]
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.

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.