



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



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	□	□	□	□	□	C	- 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	Application Option	Conformal Coating
				Vo1	Vo2	Vo3 (Triple only)							
A: Open type		U: Universal	D: Dual	3: 5	1: 2.5	M: Minus	1: 2.5	C: CLASS I			□: JST	□: None	□: None
U: U chassis type		85 ~ 264	T: Triple	4: 7.5	2: 3.3	□: Positive	2: 3.3	D: CLASS II			M: Molex	C: OVC III	R: Conformal
E: Enclosed type				5: 9	3: 5		3: 5				T: Terminal Block		Coating
D: Din rail type				6: 12	x: refer to		4: 7.5	□: CLASS I					
				7: 15	Suffix xx		5: 9	(※NRND)					
				8: 18			6: 12	B: CLASS II					
				9: 24			7: 15	(※NRND)					
				0: 28			8: 18						
							9: 24	※NRND: Not recommended for new designs					
							y: refer to						
							Suffix yy						



TECHNICAL SPECIFICATION

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

Model Number	Output 1			Output 2			Output 3		Max. Output Power	Efficiency	Maximum Capacitor Load
	Voltage	Current (Normal)	Current (MAX)	Voltage	Current (Normal)	Current (MAX)	Voltage	Current (MAX)			
	VDC	A	A	VDC	A	A	VDC	A			
TAD65UD32C TUD65UD32C TED65UD32C TDD65UD32C	+5	6	10	+3.3	6	8	---	---	50	88.5	12000 / 3000
TAD65UD63C TUD65UD63C TED65UD63C TDD65UD63C	+12	3	5.42	+5	6	8	---	---	65	90	2500 / 3000
TAD65UD62C TUD65UD62C TED65UD62C TDD65UD62C	+12	3	5.42	+3.3	6	8	---	---	65	89.5	2500 / 3000
TAD65UD73C TUD65UD73C TED65UD73C TDD65UD73C	+15	2.4	4.34	+5	6	8	---	---	65	90.5	1200 / 3000
TAD65UD93C TUD65UD93C TED65UD93C TDD65UD93C	+24	1.5	2.71	+5	6	8	---	---	65	89	625 / 3000
TAD65UD03C TUD65UD03C TED65UD03C TDD65UD03C	+28	1.25	2.33	+5	6	8	---	---	65	88	390 / 3000
TAD65UT32M3C TUD65UT32M3C TED65UT32M3C TDD65UT32M3C	+5	6	10	+3.3	6	8	-5	0.6	50	88	12000 / 3000 / 500
TAD65UT326C TUD65UT326C TED65UT326C TDD65UT326C	+5	6	10	+3.3	6	8	+12	0.6	50	88	12000 / 3000 / 500
TAD65UT32M6C TUD65UT32M6C TED65UT32M6C TDD65UT32M6C	+5	6	10	+3.3	6	8	-12	0.6	50	88	12000 / 3000 / 500
TAD65UT63M3C TUD65UT63M3C TED65UT63M3C TDD65UT63M3C	+12	3	5.42	+5	6	8	-5	0.6	65	89.5	2500 / 3000 / 500
TAD65UT63M6C TUD65UT63M6C TED65UT63M6C TDD65UT63M6C	+12	3	5.42	+5	6	8	-12	0.6	65	89	2500 / 3000 / 500



Model Number	Output 1			Output 2			Output 3		Max. Output Power	Efficiency	Maximum Capacitor Load
	Voltage	Current (Normal)	Current (MAX)	Voltage	Current (Normal)	Current (MAX)	Voltage	Current (MAX)			
	VDC	A	A	VDC	A	A	VDC	A			
TAD65UT623C TUD65UT623C TED65UT623C TDD65UT623C	+12	3	5.42	+3.3	6	8	+5	0.6	65	89	2500 / 3000 / 500
TAD65UT62M6C TUD65UT62M6C TED65UT62M6C TDD65UT62M6C	+12	3	5.42	+3.3	6	8	-12	0.6	65	88.5	2500 / 3000 / 500
TAD65UT73M7C TUD65UT73M7C TED65UT73M7C TDD65UT73M7C	+15	2.4	4.34	+5	6	8	-15	0.6	65	89.5	1200 / 3000 / 500
TAD65UT936C TUD65UT936C TED65UT936C TDD65UT936C	+24	1.5	2.71	+5	6	8	+12	0.6	65	88.5	625 / 3000 / 500
TAD65UT93M6C TUD65UT93M6C TED65UT93M6C TDD65UT93M6C	+24	1.5	2.71	+5	6	8	-12	0.6	65	88.5	625 / 3000 / 500

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			1.65	A
	240VAC			0.95	
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	Pout 1+Pout 2+Pout 3	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		-0.5		+0.5 %
		Vout 3		-0.7		+0.7 %
Cross regulation	No Load to Full Load 0.1W Load to Full Load	Vout 2		-1.5		+1.5 %
				-0.7		+0.7 %
Voltage adjustability	Asymmetrical load 25%/100% FL			-1.5		+1.5 %
Minimum load	T□D65UD□□ T□D65UT□□□□; Vout 3 is full load	Vout 1			0 0.5	W
Ripple and noise	Measured by 20MHz bandwidth					
	With a 10μF/25V 1206 X7R MLCC	Vout 1	5V		100	
	With a 1μF/50V 1206 X7R MLCC	Vout 1	12V		120	
			15V		150	
			24V		240	
			28V		280	
With a 10μF/25V 1206 X7R MLCC	Vout 2	All		100		
With a 10μF/25V 1206 X7R MLCC	Vout 3	5V		100		
		12V		120		
		15V		150		
Temperature coefficient				-0.02		+0.02 %/°C
Transient response	Load step form 50~75% change at 2.5A/μs	Vout 1	Peak deviation Recovery time		600	3 μs %Vout
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		

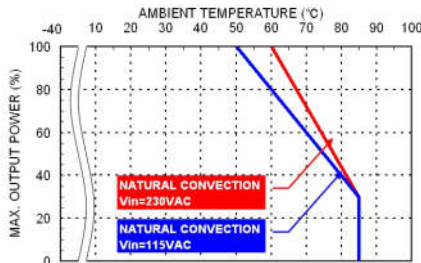
GENERAL SPECIFICATIONS						
Parameter	Conditions			Min.	Typ.	Max. Unit
Isolation voltage	1 minute (Reinforced insulation)	Input to Output Input (Output) to F.G.		3000 2500		VAC
Isolation resistance	500VDC			0.1		GΩ
Switching frequency	230VAC	Vout 1	5V Others		60 115	
		Vout 2 Vout 3			750 510	kHz
Safety approvals	IEC/ EN/ UL 60950-1, 62368-1					UL:E193009 CB:UL(Demko)
Weight						155g (5.47oz)
	TAD					203g (7.16oz)
	TUD					221g (7.80oz)
	TED					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 °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

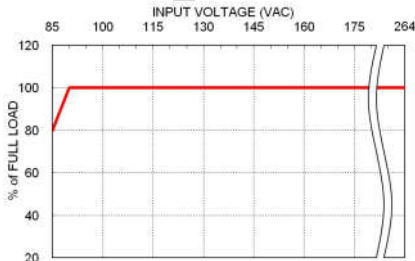
Parameter	Conditions		Level	
EMI	EN55032 and FCC Part 15		Conducted	Class B
	External components may be required for class I application.		Radiated	Class B
Harmonic currents	EN61000-3-2	Full Load		Class A
Voltage flicker	EN61000-3-3			
EMS	EN55024 and Complies with EN 61850-3			
ESD	EN61000-4-2	Air $\pm 15kV$ and Contact $\pm 6kV$		Perf. Criteria A
Radiated immunity	EN61000-4-3	20 V/m		Perf. Criteria A
Fast transient	EN61000-4-4	$\pm 4kV$		Perf. Criteria A
Surge	EN61000-4-5	DM $\pm 2kV$ and CM $\pm 4kV$		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			
Damped oscillatory wave	EN61000-4-18	DM $\pm 1kV$ and CM $\pm 2.5kV$		Perf. Criteria A

CHARACTERISTIC CURVE

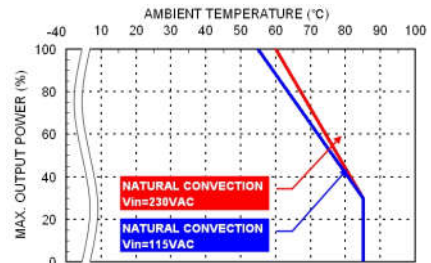


Derating Curve vs. Ambient Temperature

T□D65UD

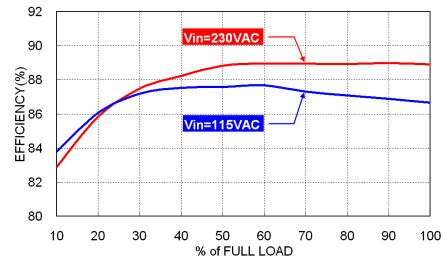


T□D65 Derating Curve vs. Input Voltage

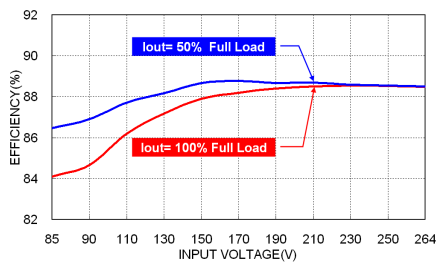


Derating Curve vs. Ambient Temperature

T□D65UT



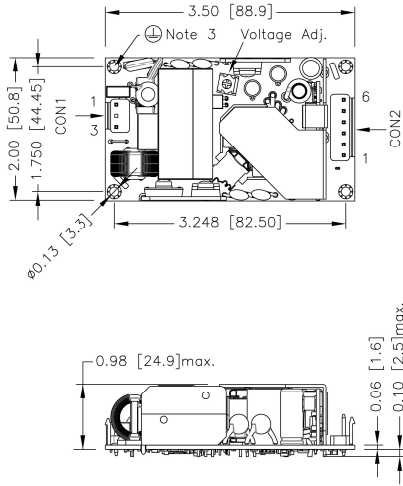
T□D65UT63M6B Efficiency vs. Output Load



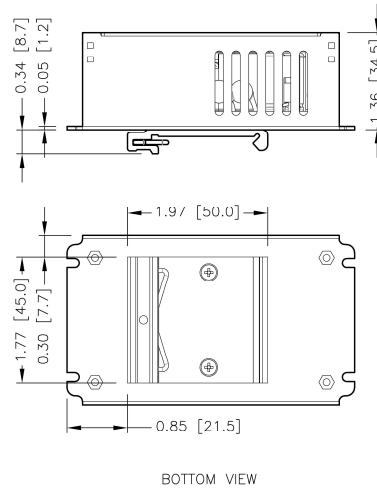
T□D65UT63M6B Efficiency vs. Input Voltage

MECHANICAL DRAWING

TAD Open type



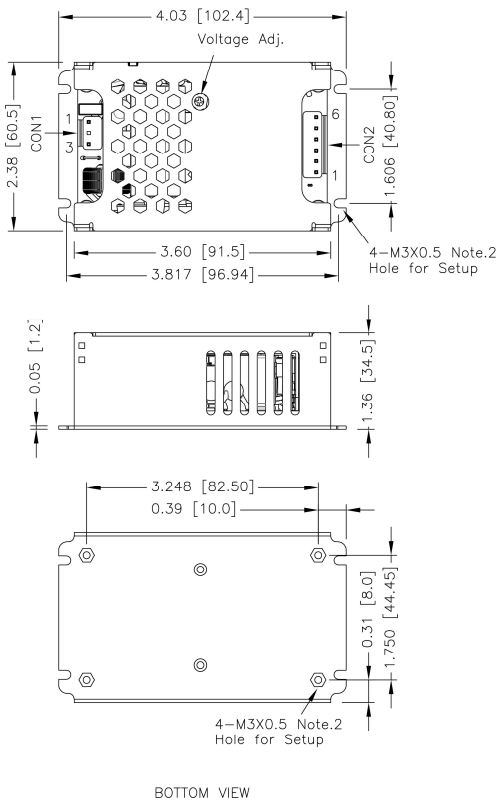
TDD Din rail type



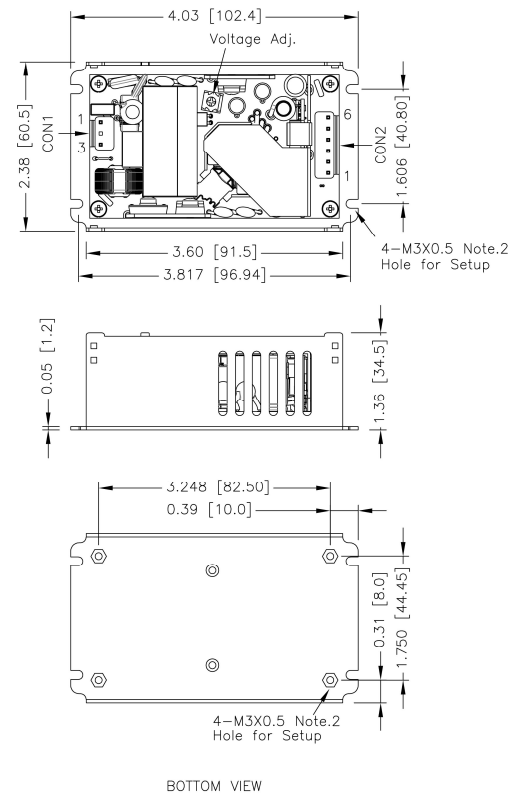
- 1.All dimensions in inch[mm]
Tolerance:x.xx±0.02[x.x±0.5] x.xxx±0.010[x.xx±0.25]
- 2.The screw locked torque: MAX 5.0kgf-cm/0.49N-m
- 3.The screws holes can be considered as PE connection for CLASS I application.

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

TED Enclosed type



TUD U chassis type



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

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

CONNECTOR CONNECTIONS
CON1 – Input Connector

Pin Number	AC Input	DC Input
		T□D65UDXXC · T□D65UDXXD T□D65UTXXC · T□D65UTXXD
Pin 1	Line	DC+
Pin 3	Neutral	DC-

CON2 – Output Connector

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

*Either one of four screws holes of 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