



Power Mate Technology, Inc 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 Options	Application Options	Conformal Coating Options	
				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		R: Conformal Coating	
D: Din rail type				6: 12	x: refer to		4: 7.5	□: CLASS I (⊗NRND)						
				7: 15	Suffix xx		5: 9	B: CLASS II (⊗NRND)						
				8: 18			6: 12							
				9: 24			7: 15							
				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	+5	6	10	+3.3	6	8	---	---	50	88.5	12000 / 3000
TED65UD32C											
TDD65UD32C											
TAD65UD63C											
TUD65UD63C	+12	3	5.42	+5	6	8	---	---	65	90	2500 / 3000
TED65UD63C											
TDD65UD63C											
TAD65UD62C											
TUD65UD62C	+12	3	5.42	+3.3	6	8	---	---	65	89.5	2500 / 3000
TED65UD62C											
TDD65UD62C											
TAD65UD73C											
TUD65UD73C	+15	2.4	4.34	+5	6	8	---	---	65	90.5	1200 / 3000
TED65UD73C											
TDD65UD73C											
TAD65UD93C											
TUD65UD93C	+24	1.5	2.71	+5	6	8	---	---	65	89	625 / 3000
TED65UD93C											
TDD65UD93C											
TAD65UD03C											
TUD65UD03C	+28	1.25	2.33	+5	6	8	---	---	65	88	390 / 3000
TED65UD03C											
TDD65UD03C											
TAD65UT32M3C											
TUD65UT32M3C	+5	6	10	+3.3	6	8	-5	0.6	50	88	12000 / 3000 / 500
TED65UT32M3C											
TDD65UT32M3C											
TAD65UT326C											
TUD65UT326C	+5	6	10	+3.3	6	8	+12	0.6	50	88	12000 / 3000 / 500
TED65UT326C											
TDD65UT326C											
TAD65UT32M6C											
TUD65UT32M6C	+5	6	10	+3.3	6	8	-12	0.6	50	88	12000 / 3000 / 500
TED65UT32M6C											
TDD65UT32M6C											
TAD65UT63M3C											
TUD65UT63M3C	+12	3	5.42	+5	6	8	-5	0.6	65	89.5	2500 / 3000 / 500
TED65UT63M3C											
TDD65UT63M3C											
TAD65UT63M6C											
TUD65UT63M6C	+12	3	5.42	+5	6	8	-12	0.6	65	89	2500 / 3000 / 500
TED65UT63M6C											
TDD65UT63M6C											

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	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			

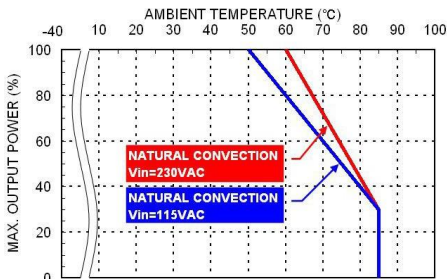
OUTPUT SPECIFICATIONS						
Parameter	Conditions			Min.	Typ.	Max. Unit
Output power	Pout 1+Pout 2+Pout 3	Vout 1	5V Others			50 65 Watts
Initial set voltage accuracy	230VAC and Full Load	Vout 1 Vout 2, Vout 3		-1.0 -2.0		+1.0 +2.0 %
Line regulation	Low Line to High Line at Full Load			-0.2		+0.2 %
Load regulation	No Load to Full Load	Vout 1		-0.5		+0.5 %
		Vout 3		-0.7		+0.7 %
Load regulation	No Load to Full Load	Vout 2		-1.5		+1.5 %
		0.1W Load to Full Load		-0.7		+0.7 %
Cross regulation	Asymmetrical load 25%/100% FL			-1.5		+1.5 %
Voltage adjustability		Vout 1		-10		+10 %
Minimum load	T□D65UD□□				0	W
	T□D65UT□□□□; Vout 3 is full load	Vout 1+Vout 2			0.5	
Ripple and noise	Measured by 20MHz bandwidth					
	With a 10µF/25V 1206 X7R MLCC	Vout 1	5V		100	mVp-p
			12V		120	
			15V		150	
	With a 1µF/50V 1206 X7R MLCC	Vout 1	24V		240	
			28V		280	
All				100		
With a 10µF/25V 1206 X7R MLCC	Vout 2	5V		100		
	Vout 3	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 %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	5V		60	kHz
			Others		115	
			Vout 2		750	
		Vout 3			510	
Safety approvals	IEC/ EN/ UL 62368-1					UL:E193009 CB:UL(Demko)
Weight		TAD				155g (5.47oz)
		TUD				203g (7.16oz)
		TED				221g (7.80oz)
		TDD				243g (8.57oz)
MTBF	MIL-HDBK-217F, Full load					1.059 x 10 ⁶ hrs

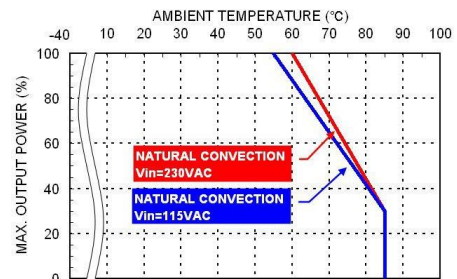
ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions			Min.	Typ.	Max. Unit
Operating ambient temperature	Natural convection	With derating		-40		+85 °C
Storage temperature range				-40		+85 °C
Operating altitude						5000 m
Shock						IEC60068-2-27
Vibration						IEC60068-2-6
Relative humidity	Non-condensing					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 EN61850-3		
ESD	EN61000-4-2		
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		
Damped oscillatory wave	EN61000-4-18	DM ± 1kV and CM ± 2.5kV	Perf. Criteria A

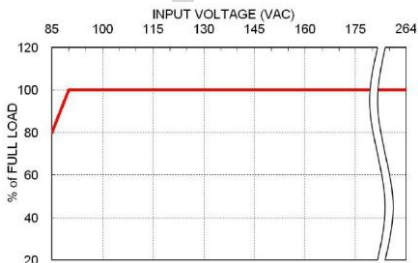
CHARACTERISTIC CURVE



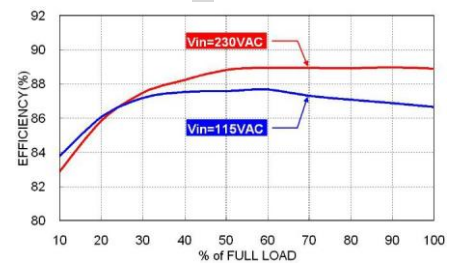
Derating Curve vs. Ambient Temperature
T□D65UD



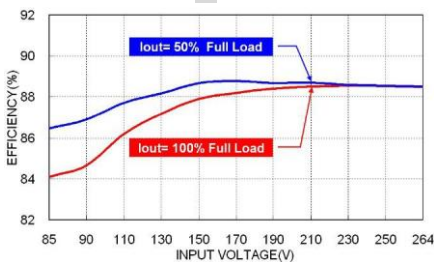
Derating Curve vs. Ambient Temperature
T□D65UT



Derating Curve vs. Input Voltage
T□D65



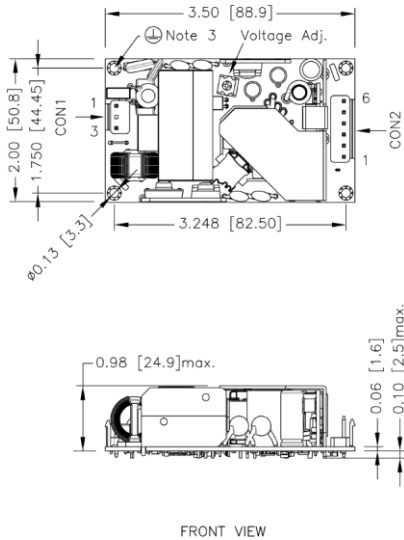
Efficiency vs. Output Load
T□D65UT63M6B



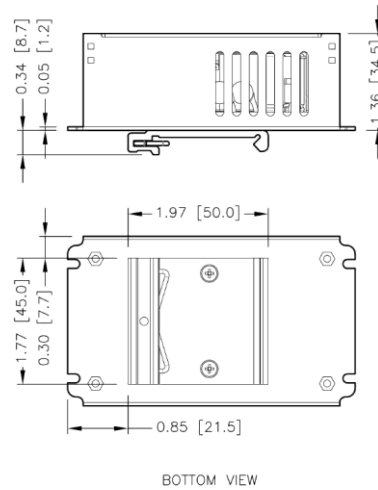
Efficiency vs. Input Voltage
T□D65UT63M6B

MECHANICAL DRAWING

TAD Open type



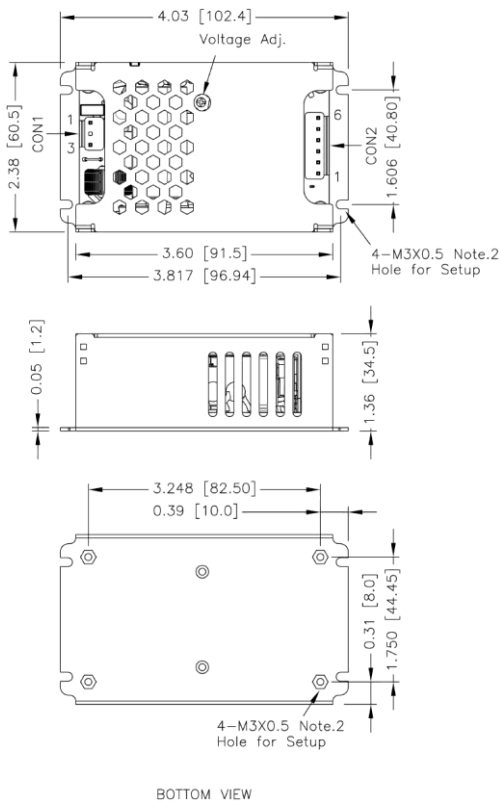
TDD Din rail type



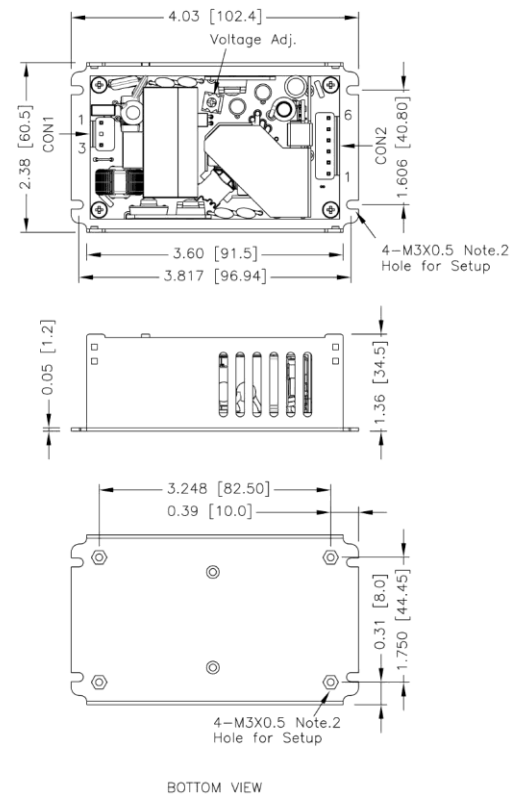
1. All dimensions in inch[mm]
Tolerance: $x.xx \pm 0.02[x.x \pm 0.5]$ $x.xxx \pm 0.010[x.xx \pm 0.25]$
2. The screw locked torque: MAX 5.0kgf-cm/0.49N-m
3. The screws holes can be considered as PE connection for CLASS I application.

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

1. All dimensions in inch[mm]
Tolerance: $x.xx \pm 0.02[x.x \pm 0.5]$ $x.xxx \pm 0.010[x.xx \pm 0.25]$
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