

## Features

- Universal input 85~264VAC or 120~370VDC
- Operating Temperature Range: -40~105°
- Open Frame Power Supply (PSU)
- Approved to cURus, UKCA, CE, FCC, CB
- Safety standards to IEC/EN/UL 62368-1, IEC/ EN/ UL 62368-1
- Efficiency up to 90.5%
- EMC EN60601-1-2, EN55011, EN55032 & FCC Class B Certified
- Single Output 5-53V DC



Ideal Power's 43MxD65Uxy 65W Series DC/DC Converters are certified to cURus, UKCA, CE, FCC, CB, RoHS, REACH & IEC/EN/ANSI/AAMI ES 60601-1, IEC/EN/UL 62368-1 Standards and comply with Efficiency Regulations. These are primarily used in ITE, Video & Audio, Medical Industries and customised solutions are available upon request.

## Models

Model Number	Output 1			Output2			Output3		Max Output Power	Efficiency %	Maximum Capacitor Load $\mu$ F
	Voltage	Current (Normal)	Current (Max)	Voltage	Current (Normal)	Current (Max)	Voltage	Current (Max)			
	VDC	A	A	VDC	A	A	VDC	A			
43MXD65UD32C	+5	6	10	+3.3	6	8	---	---	50	88.5	12000/3000
43MXD65UD63C	+12	3	5.42	+5	6	8	---	---	65	90	2500/3000
43MXD65UD62C	+12	3	5.42	+3.3	6	8	---	---	65	89.5	2500/3000
43MXD65UD73C	+15	2.4	4.34	+5	6	6	---	---	65	90.5	1200/3000
43MXD65UD93C	+24	1.5	2.71	+5	6	8	---	---	65	89	625/3000
43MXD65UD03C	+28	1.25	2.33	+5	6	8	---	---	65	88	390/3000
43MXD65UT32M3C	+5	6	10	+3.3	6	8	-5	0.6	50	88	12000/3000 /500
43MXD65UT326C	+5	6	10	+3.3	6	8	+12	0.6	50	88	12000/3000 /500
43MXD65UT32M6C	+5	6	10	+3.3	6	8	+12	0.6	50	88	12000/3000 /500
43MXD65UT63M3C	+12	3	5.42	+5	6	8	-5	0.6	65	89.5	2500/3000 /500
43MXD65UT63M6C	+12	3	5.42	+5	6	8	-12	0.6	65	89	2500/3000 /500
43MXD65UT623C	+12	3	5.42	+5	6	8	+5	0.6	65	89	2500/3000 /500
MAD65UT62M6C	+12	3	5.42	+3.3	6	8	-12	0.6	65	88.5	2500/3000 /500
MAD65UT73M7C	+15	2.4	4.34	+5	6	8	-15	0.6	65	89.5	1200/3000 /500
MAD65UT936C	+24	1.5	2.71	+5	6	8	+12	0.6	65	88.5	625/3000 /500
MAD65UT93M6C	+24	1.5	2.71	+5	6	8	-12	0.6	65	88.5	625/3000 /500

**NOTE\*** Please use **43MAD** for Open Type, **43MUD** for U Chassis Type, **43MED** for Enclosed Type and **43MDD** for Din Rail Type

Ideal Power Limited

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**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 in line and neutral		T3.15A/250VAC		

**Output Specifications**

Parameter	Conditions	Min	Typ	Max	Unit			
Output power	Pout 1+Pout 2+Pout 3	Vout 1	5V	--	--	50	Watts	
			Others	--	--	65		
Initial set voltage accuracy	230VAC and Full Load	Vout 1		-1.0	--	+1.0	%	
		Vout 2 - Vout 3		-2.0	--	+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		
	No Load to Full Load 0.1W Load to Full Load	Vout 2		-1.5	--	+1.5		
				-0.7	--	+0.7		
Cross regulation	Asymmetrical load 25%/100% FL			-1.5	--	+1.5		
Voltage adjustability		Vout 1		-10	--	+10	%	
Minimum load	43MxD65UD□□			--	0	--	W	
	43MxD65UT□□□; 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	
		Vout 1	12V	--	120	--		
	With a 1μF/50V 1206 X7R MLCC		15V	--	150	--		
			24V	--	240	--		
			28V	--	280	--		
			All	--	100	--		
	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 from 50 ~ 75% change at 2.5A/μs	Vout 1	Peak deviation	--	--	3	% Vout	
			Recovery time	--	600	--	μs	
Over voltage protection	% of Vout(nom); Latch mode	Vout 1		125	--	140	%	
Overload protection	% of nominal output power; Hiccup mode	Pout 1+Pout 2		--	145	--	%	
Short circuit protection	Continuous, automatic recovery							

**General Specifications**

Parameter	Conditions		Min	Typ	Max	Unit
Isolation voltage	1 minute (2MOPP insulation)	Input to Output	4000			VDC
		Input (Output) to F.G.	2500			
Isolation resistance	500VDC		0.1			GΩ
Switching frequency	230VAC	Vout 1		60		kHz
		Others		115		
		Vout 2		750		
		Vout2		510		
Safety approvals	IEC/ EN/ ANSI/AAMI ES 60601-1					UL:E360199
	IEC/ EN/ UL 62368-1					UL:E193009 CB:UL(Demko)
Weight	43MAD					155g (5.47oz)
	43MUD					203g (7.16oz)
	43MED					221g (7.80oz)
	43MDD					243g (8.57oz)
MTBF	MIL-HDBK-217F, Full load					1.059 x 10 <sup>6</sup> hrs

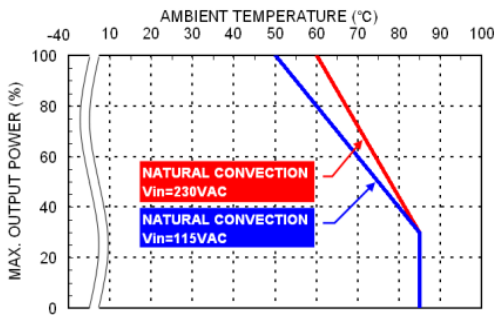
**Environmental Specifications**

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

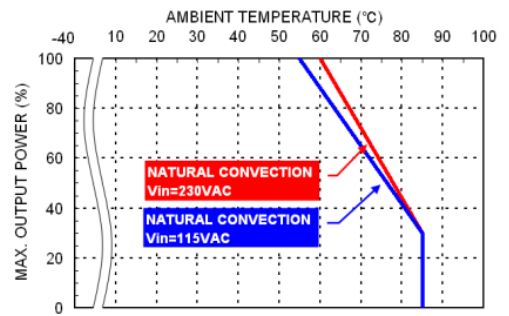
**EMC Specifications**

Parameter	Conditions		Level	
EMI	EN55011, EN55032, EN60601-1-2 and FCC Part 18 / 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 EN60601-1-2			
ESD	EN61000-4-2			Perf. Criteria A
Radiated immunity	EN61000-4-3	20 V/m		Perf. Criteria A
Fast transient	EN61000-4-4	± 2kV		Perf. Criteria A
Surge	EN61000-4-5	DM ± 1kV and CM ± 2kV		Perf. Criteria A
Conducted immunity	EN61000-4-6	20 Vr.m.s		Perf. Criteria A
Power frequency magnetic field	EN61000-4-8	30A/m		Perf. Criteria A
Dip and interruptions	EN61000-4-11			

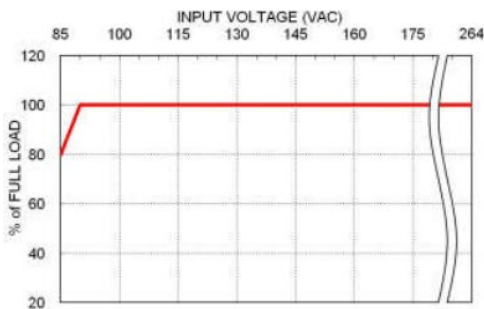
## Characteristic Curve



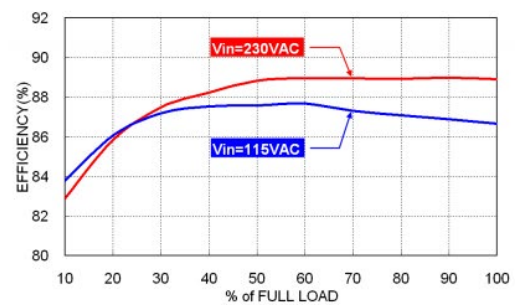
Derating Curve vs. Ambient Temperature  
43MxD65UD



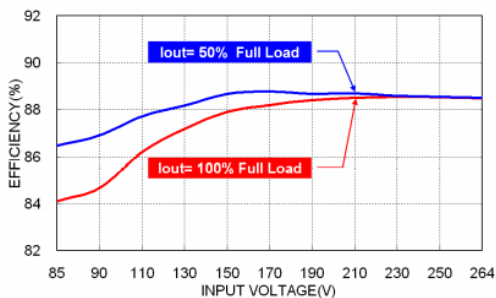
Derating Curve vs. Ambient Temperature  
43MxD65UT



Derating Curve vs. Input Voltage  
43MxD65



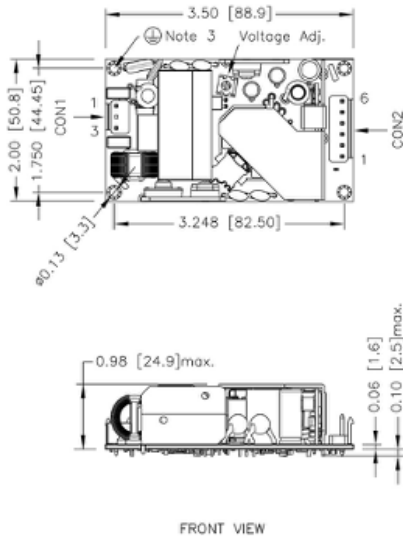
Efficiency vs. Output Load  
43MxD65UT63M6B



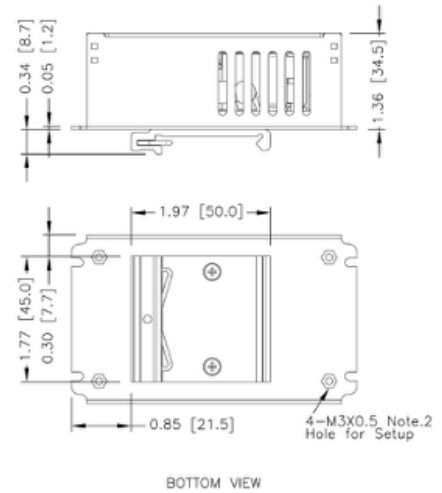
Efficiency vs. Input Voltage  
43MxD65UT63M6B

## Mechanical Drawing

### 43MAD Open type



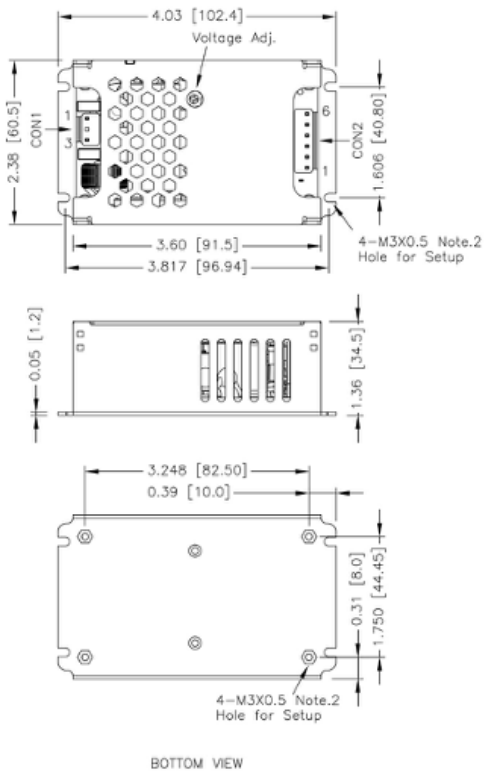
### 43MDD Din Rail type



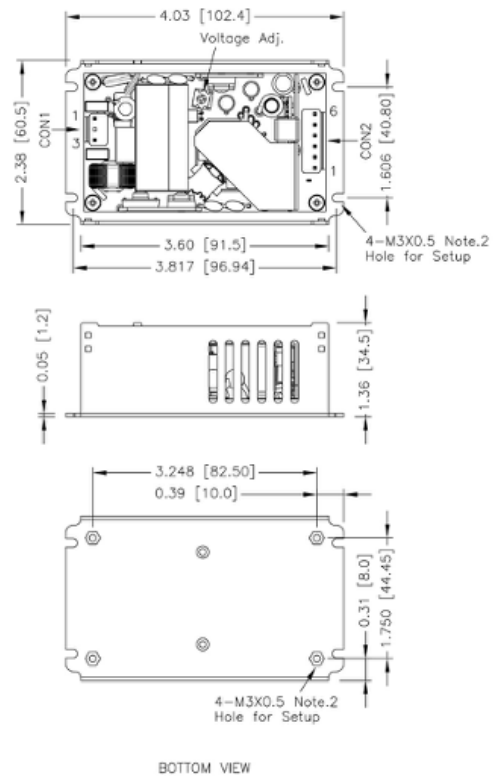
- 1.All dimensions in inch[mm]  
Tolerance: x.xx±0.02[x.x±0.5] x.xxx±0.010[x.xx±0.25]
- 2.The screw locked torque: MAX 5.0kgf-cm/0.49N-m
- 3.The screws holes can be considered as PE connection for CLASS I application.

- 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

### 43MED Enclosed type



### 43MUD 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 43MxD65UDXXC, 43MxD65UDXXD 43MxD65UTXXC, 43MxD65UTXXD
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 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**