43UFED20-xyW-DR DC-DC Converter Series

Up to 20 Watt

Features

- 2:1 Wide Input Range
- Operating Temperature Range: -40~100°c
- Approved to UKCA, CE, RoHS & REACH
- Approved to IEC/UL/EN62368-1
- Efficiency up to 88%
- EMC Class A
- Single & Dual 20W Output Models

Ideal Power's 43UFED20-xyW-DR 15W Series Terminal Block DC/DC Converters are certified to UKCA, CE, RoHS, REACH & IEC/UL/EN 62368-1 Standards and comply with the relevant Efficiency Regulations. These are primarily used in ITE, Video & Audio Industries and customised solutions are available upon request.

Part Number Structure

UFED20	-	48	S	05	W	-	P	R	EC
Series Name		Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range		Remote Control Options	Conformal Coating Options	Assembly Options
		12: 9.5 ~ 18 **24:** 9.5 ~ 36 **48:** 18 ~ 75	**S:** Single	**3P3:** 3.3 **05:**5 **12:**12 **15:**15	2 : 1		□**:** Positive logic **N:** Negative logic	□: None **R:** Conformal coating	□**:** None **EC:** Enclosed Mounting type **DR:** Din Rail Mounting type **ED:** Enclosed & Din Rail Mounting type
			D: Dual	**12:**±12 **15:**±15					

Models

Model Number	Input Range V DC	Output Voltage V DC	Output current @Full Load A	Input Current @ No Load A	Efficiency %	Maximum Capacitor Load µF
43UFED20-12S3P3	9.5 ~ 18	3.3	5000	117	84	13000
43UFED20-12S05	9.5 ~ 18	5	4000	78	86	6800
43UFED20-12S12	9.5 ~ 18	12	1670	96	85	2200
43UFED20-12S15	9.5 ~ 18	15	1330	43	85	755
43UFED20-12D12	9.5 ~ 18	±12	±833	51	85	±680
43UFED20-12D15	9.5 ~ 18	±15	±667	58	85	±450
43UFED20-24S3P3	18 ~ 36	3.3	5000	31	85	13000
43UFED20-24S05	18 ~ 36	5	4000	36	88	6800
43UFED20-24S12	18 ~ 36	12	1670	58	86	2200
43UFED20-24S15	18 ~ 36	15	1330	44	86	755
43UFED20-24D12	18 ~ 36	±12	±833	33	86	±680
43UFED20-24D15	18 ~ 36	±15	±667	34	87	±450
43UFED20-48S3P3	36 ~ 75	3.3	5000	16	86	13000
43UFED20-48S05	36 ~ 75	5	4000	21	88	6800
43UFED20-48S12	36 ~ 75	12	1670	37	87	2200
43UFED20-48S15	36 ~ 75	15	1330	52	86	755
43UFED20-48D12	36 ~ 75	±12	±833	22	87	±680
43UFED20-48D15	36 ~ 75	±15	±667	22	87	±450

Input Specifications

Parameter		Conditions		Min	Typ	Max	Unit
Operating input voltage range		12Vin(nom)		9.5	12	18	V DC
		24Vin(nom)		18	24	36	
		48Vin(nom)		36	48	75	
Input fuse	slow blow	12Vin(nom)		--	6	--	
		24Vin(nom)		--	6	--	
		48Vin(nom)		--	4	--	
Inrush current				--	15	--	
Start-up time	Constant resistive load	Power up		--	100	--	ms
Input surge voltage	100ms, max	12Vin(nom)		--	--	36	V DC
		24Vin(nom)		--	--	50	
		48Vin(nom)		--	--	100	
Remote ON/OFF	Referred to -Vin pin	Positive logic	DC-DC ON		Open or 3 ~ 12VDC		
			DC-DC OFF		Short or 0 ~ 1.2VDC		
		Negative logic	DC-DC ON		Short or 0 ~ 1.2VDC		
			DC-DC OFF		Open or 3 ~ 12VDC		
		Input current of Ctrl pin		0.5		0.5	mA
		Remote off input current			2.5		mA

DC – DC

Output Specifications

Parameter	Conditions			Min	Typ	Max	Unit
Voltage accuracy			3.3Vout Others	-1.5 -1.0		+1.5 -1.0	%
Line regulation	Low Line to High Line at Full Load		Single Dual	-0.2 -0.5		+0.2 -0.5	%
Load regulation	No Load to Full Load		3.3Vout Others	-1.5 -1.0		+1.5 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL		Dual	-5.0		+5.0	%
Voltage adjustability	Single output		-10	-10		+10	%
Ripple and noise	Measured by 20MHz bandwidth	Single Dual	3.3Vout 5Vout, 12Vout, 15Vout All		60 75 100		mVp-p
Temperature coefficient				-0.02		+0.02	%/℃
Transient response recovery time	25% Load step change				250		µs
Over voltage protection			3.3Vout 5Vout 12Vout 15Vout		3.9 6.2 15 18		V DC
Output indicator					Green LED		
Overload protection	% of Iout rated				150		%
Short circuit protection					Continuous, automatics recovery		

General Specifications

Parameter	Conditions		Min	Typ	Max	Unit
Isolation voltage	1 minute	Input to Output Input (Output) to Chassis	1600 1600			V DC
Isolation resistance	500V DC		1			GΩ
Isolation capacitance					4000	pF
Switching frequency			450	500	550	kHz
Safety approvals	IEC/ EN/ UL 62368-1					UL:E193009 CB:UL(Demko)
Chassis material						Aluminum
Conformal coating						Impregnating varnish
Weight						89g (3.13oz)
MTBF	MIL-HDBK-217F, Full load					2.073 x 106 hrs

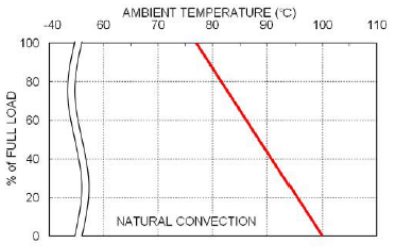
Environmental Specifications

Parameter	Conditions		Min	Typ	Max	Unit
Operating ambient temperature		With derating	-40		+105	℃
Storage temperature range			-40		+105	℃
Thermal Shock						MIL-STD-810F
Vibration	□□S□□W -□ □□S□□W -□EC □□S□□W -□DR □□S□□W -□ED					MIL-STD-810F MIL-STD-810F IEC60068-2-6 IEC60068-2-6
Relative humidity						5% to 95% RH

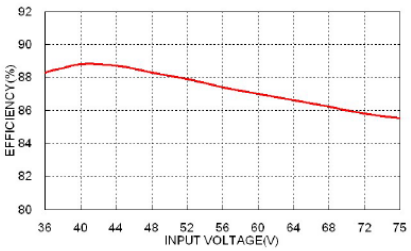
EMC Specifications

Parameter		Conditions	Level
EMI	EN55032		Class B
EMS	EN55024		
ESD	EN61000-4-2	Air ± 8kV and Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast transient	EN61000-4-4	± 2kV	Perf. Criteria A
Surge	EN61000-4-5	± 0.5kV	Perf. Criteria A
Conducted immunity	EN61000-4-6	10Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8	100A/m continuous; 1000A/m 1 second	Perf. Criteria A

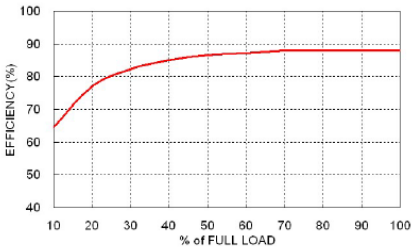
Characteristic Curve



43UFED20-48S05W Derating Curve



43UFED20-48S05W Efficiency vs. Input Voltage

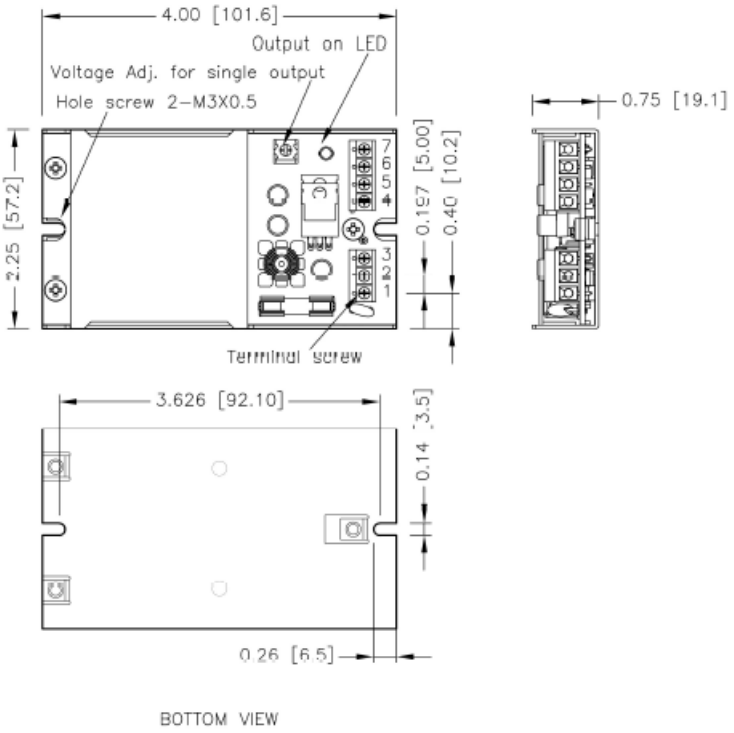


43UFED20-48S05W Efficiency vs. Output Load

DC – DC

Mechanical Drawing

CHASSIS MOUNTING TYPE

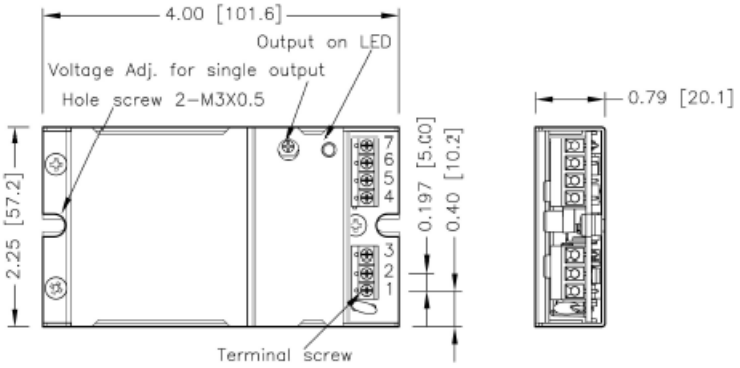


Terminal Connection

No.	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	NC	NC
5	-Vout	-Vout
6	+Vout	Common
7	NC	+Vout

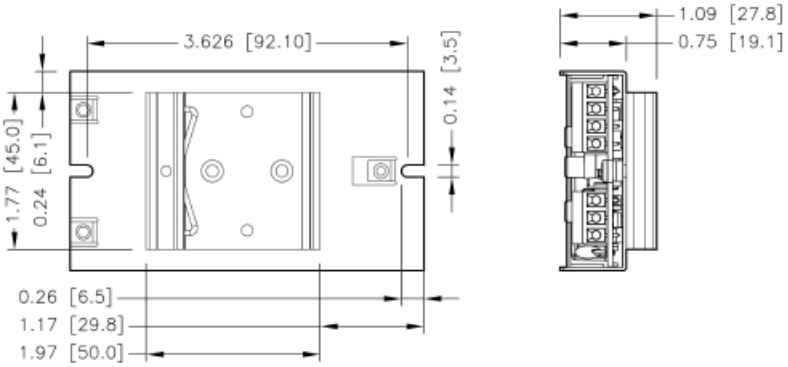
Mechanical Drawing (Continued)

ENCLOSED MOUNTING TYPE



TOP VIEW

DIN RAIL MOUNTING TYPE



BOTTOM VIEW