



Power Mate Technology, Inc UFEC15W Series

Chassis-Mount DC-DC Converter
Up to 15 Watts

3
YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV



Railway

CB CE UK
CA

1600
VDC
Isolation
Voltage

4 : 1
Wide
Input
Range

FUSE
Installed

INRUSH
CURRENT
LIMIT

Internal
EN55032
Class **B**
Filter

NO
Min. Load
Required

REMOTE
ON
OFF

REVERSE
POLARITY
PROTECTION

OCP

OVP

SCP

UVP

PART NUMBER STRUCTURE

UFEC15 -	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
	24:9.5~36 48:18~75	S:Single	3P3:3.3 05:5 5P1:5.1 12:12 15:15	4:1	☐ :NC P: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	05:±5 12:±12 15:±15				

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25°C unless otherwise noted

Model Number	Input Range	Output Voltage	Output Current @Full Load	Input Current @No Load	Efficiency	Maximum Capacitor Load
	VDC	VDC	mA	mA	%	μF
UFEC15-24S3P3W	9.5 ~ 36	3.3	4500	51	85	14700
UFEC15-24S05W	9.5 ~ 36	5	3000	66	86	7200
UFEC15-24S5P1W	9.5 ~ 36	5.1	3000	66	86	7200
UFEC15-24S12W	9.5 ~ 36	12	1250	25	86	1250
UFEC15-24S15W	9.5 ~ 36	15	1000	26	86	800
UFEC15-24D05W	9.5 ~ 36	±5	±1500	56	86	±3600
UFEC15-24D12W	9.5 ~ 36	±12	±625	33	87	±625
UFEC15-24D15W	9.5 ~ 36	±15	±500	34	87	±400
UFEC15-48S3P3W	18 ~ 75	3.3	4500	36	85	14700
UFEC15-48S05W	18 ~ 75	5	3000	36	87	7200
UFEC15-48S5P1W	18 ~ 75	5.1	3000	36	87	7200
UFEC15-48S12W	18 ~ 75	12	1250	17	86	1250
UFEC15-48S15W	18 ~ 75	15	1000	17	86	800
UFEC15-48D05W	18 ~ 75	±5	±1500	36	87	±3600
UFEC15-48D12W	18 ~ 75	±12	±625	19	87	±625
UFEC15-48D15W	18 ~ 75	±15	±500	19	87	±400

INPUT SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range		24Vin(nom)	9.5	24	36	VDC
		48Vin(nom)	18	48	75	
Input fuse	slow blow	24Vin(nom)		6		A
		48Vin(nom)		4		
In-rush current				15		A
Start up voltage		24Vin(nom)			9.5	VDC
		48Vin(nom)			18	
Shutdown voltage		24Vin(nom)	7	7.5	9	VDC
		48Vin(nom)	14.5	16	17.5	
Start up time	Constant resistive load	Power up		100		ms
Input surge voltage	100ms, max.	24Vin(nom)			50	VDC
		48Vin(nom)			100	
Remote ON/OFF (Option)	Referred to –Vin pin	Positive logic			Open or 3 ~ 12VDC	mA
		DC-DC ON			Short or 0 ~ 1.2VDC	
		DC-DC OFF			Short or 0 ~ 1.2VDC	
		Negative logic			Open or 3 ~ 12VDC	
		DC-DC ON				
		DC-DC OFF				
		Input current of Ctrl pin	-0.5		0.5	
		Remote off input current		2.5		

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	%
Ripple and noise	Measured by 20MHz bandwidth	Single Dual		50 75 75		mVp-p
Temperature coefficient			-0.02		+0.02	%/°C
Transient response recovery time	25% load step change			250		µs
Over voltage protection	Zener diode clamp	3.3Vout 5Vout, 5.1Vout 12Vout 15Vout		3.9 6.2 15 18		VDC
Output indicator					Green LED	
Over load protection	% of Iout rated			150		%
Short circuit protection					Continuous, automatic recovery	

GENERAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output Input (Output) to Chassis	1600 1600			VDC
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4000	pF
Switching frequency			360	400	440	kHz
Safety approvals	IEC/ EN/ UL62368-1				UL:E193009 CB:UL(Demko)	
Chassis material					Aluminum	
Conformal coating					Impregnating varnish	
Weight					89g (3.13oz)	
MTBF	MIL-HDBK-217F, Full load				2.544 x 10 ⁶ hrs	

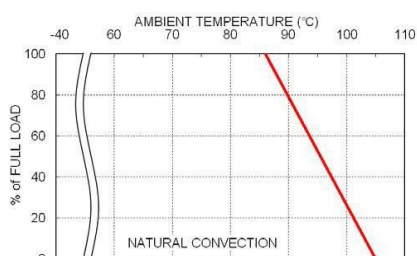
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature		With derating	-40		+105	°C
Storage temperature range			-40		+105	°C
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	

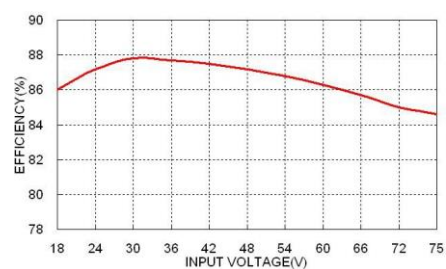
EMC SPECIFICATIONS

Parameter	Conditions		Level
EMI	EN55032		Class B
EMS	EN55024		
ESD	EN61000-4-2	Air $\pm 8\text{kV}$ and Contact $\pm 6\text{kV}$	Perf. Criteria A
Radiated immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast transient	EN61000-4-4	$\pm 2\text{kV}$	Perf. Criteria A
Surge	EN61000-4-5	$\pm 0.5\text{kV}$	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

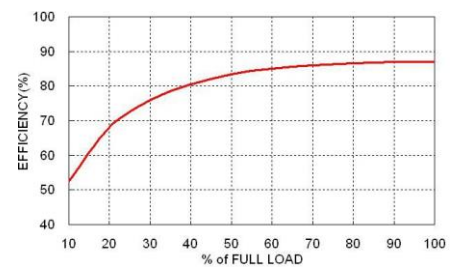
CHARACTERISTIC CURVE



UFEC15-48S05W Derating Curve



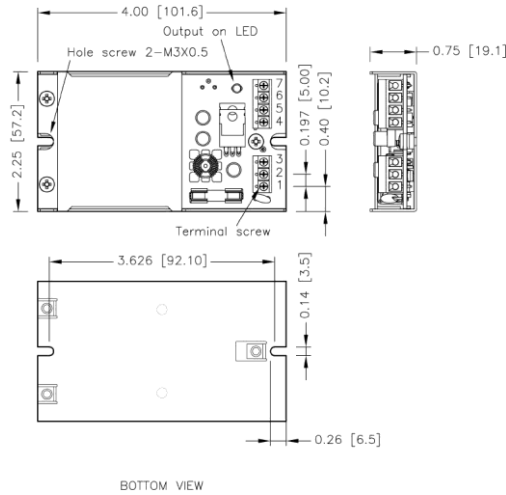
UFEC15-48S05W Efficiency vs. Input Voltage



UFEC15-48S05W Efficiency vs. Output Load

MECHANICAL DRAWING

CHASSIS MOUNTING TYPE



TERMINAL CONNECTION

NO.	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl(Optional)	Ctrl(Optional)
4	NC	NC
5	-Vout	-Vout
6	+Vout	Common
7	NC	+Vout

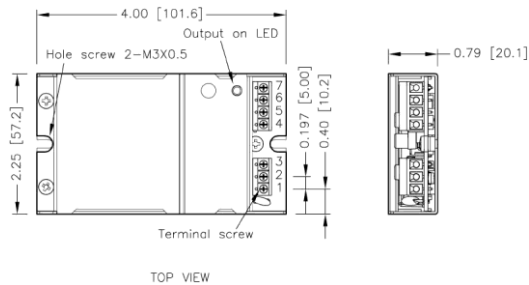
- ※ NC : No Connection
- ※ Screw terminals – wire range from 14 to 18 AWG

1. All dimensions in Inch [mm]
2. Tolerance : $X.XX \pm 0.02$ [$X.X \pm 0.5$]
 $X.XXX \pm 0.010$ [$X.XX \pm 0.25$]

3. Hole screw locked torque :
MAX 5.0kgf - cm/0.49N - m

4. Terminal screw locked torque :
MAX 2.5kgf - cm/0.25N - m

ENCLOSED MOUNTING TYPE



DIN RAIL MOUNTING TYPE

