



# Power Mate Technology, Inc **UFEC30W** Series

Chassis-Mount DC-DC Converter  
Up to 30 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

UFEC30 -	48	S	05	W -	N	R	EC
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Options	Conformal Coating Options	Assembly Options
	24:10~40 48:18~75	S:Single	3P3:3.3 05:5 12:12 15:15 24:24 28:28	4:1	<input type="checkbox"/> :Positive logic <input type="checkbox"/> :Negative logic	<input type="checkbox"/> : None R: Conformal Coating	<input type="checkbox"/> : None EC: Enclosed Mounting Type DR: Din Rail Mounting Type ED: Enclosed & Din Rail Mounting Type
		D: Dual	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	A	mA	%	µF
UFEC30-24S3P3W	10 ~ 40	3.3	6	51	86	19500
UFEC30-24S05W	10 ~ 40	5	6	66	86	10200
UFEC30-24S12W	10 ~ 40	12	2.5	68	86	3300
UFEC30-24S15W	10 ~ 40	15	2	74	87	1100
UFEC30-24S24W	10 ~ 40	24	1.25	38	83	500
UFEC30-24S28W	10 ~ 40	28	1	44	84	340
UFEC30-24D12W	10 ~ 40	±12	±1.25	33	83	±1000
UFEC30-24D15W	10 ~ 40	±15	±1	39	84	±680
UFEC30-48S3P3W	18 ~ 75	3.3	6	31	86	19500
UFEC30-48S05W	18 ~ 75	5	6	31	87	10200
UFEC30-48S12W	18 ~ 75	12	2.5	37	86	3300
UFEC30-48S15W	18 ~ 75	15	2	47	87	1100
UFEC30-48S24W	18 ~ 75	24	1.25	29	84	500
UFEC30-48S28W	18 ~ 75	28	1	29	85	340
UFEC30-48D12W	18 ~ 75	±12	±1.25	27	84	±1000
UFEC30-48D15W	18 ~ 75	±15	±1	27	85	±680

INPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range	24Vin(nom)		10	24	40	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)					VDC
	48Vin(nom)		10 18			
Shutdown voltage	24Vin(nom)		7	8	9.5	VDC
	48Vin(nom)		15	16	17.5	
Start up time	Constant resistive load	Power up	100			ms
		Remote ON/OFF	20			
Input surge voltage	100ms, max.	24Vin(nom)				VDC
		48Vin(nom)	50 100			
Remote ON/OFF	Referred to -Vin pin	Positive logic DC-DC ON (Standard)	Open or 3 ~ 12VDC			mA
		Negative logic DC-DC ON (Option)	Short or 0 ~ 1.2VDC			
		DC-DC OFF	Open or 3 ~ 12VDC			mA
		DC-DC OFF	Short or 0 ~ 1.2VDC			
		Input current of Ctrl pin	-0.5	0.5		
		Remote off input current	3			

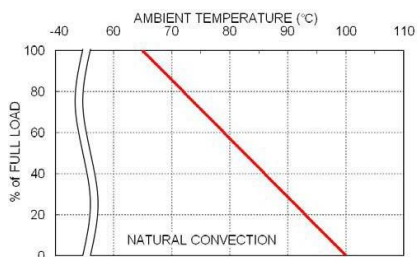
<b>OUTPUT SPECIFICATIONS</b>						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Voltage accuracy	3.3Vout		-1.5		+1.5	%
	Others		-1.0		+1.0	
Line regulation	Low Line to High Line at Full Load		-0.5		+0.5	%
Load regulation	No Load to Full Load		-1.5		+1.5	%
	3.3Vout Others		-1.0		+1.0	
Cross regulation	Asymmetrical load 25%/100% FL		-5.0		+5.0	%
Voltage adjustability	Single output		-3		+17	%
	28Vout Others		-10		+10	
Ripple and noise	Measured by 20MHz bandwidth	Single	3.3Vout, 5Vout, 12Vout, 15Vout 24Vout, 28Vout		50 75 130	mVp-p
		Dual	All		100	
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		3.9		VDC
		5Vout		6.2		
		12Vout		15		
		15Vout		18		
		24Vout 28Vout		30 36		
Output indicator			Green LED			
Over load protection	% of Iout rated			150		%
Short circuit protection			Continuous, automatic recovery			

<b>GENERAL SPECIFICATIONS</b>						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output	1600			VDC
		Input (Output) to Chassis	1600			
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4000	pF
Switching frequency			270	300	330	kHz
Safety approvals	IEC/ EN/ UL62368-1				UL:E193009 CB:UL(Demko)	
Chassis material					Aluminum	
Conformal coating					Impregnating varnish	
Weight					110g (3.88oz)	
MTBF	MIL-HDBK-217F, Full load				8.277 x 10 <sup>5</sup> hrs	

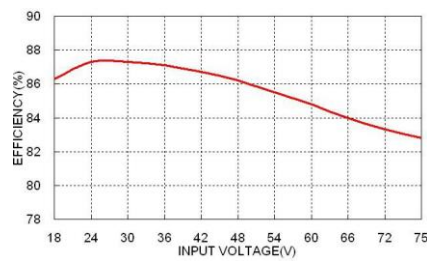
<b>ENVIRONMENTAL SPECIFICATIONS</b>						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature	With derating		-40		+100	°C
Over temperature protection	Case of DC/DC module			115		°C
Storage temperature range			-40		+105	°C
Thermal shock					MIL-STD-810F	
Vibration	□□S□□W -□				MIL-STD-810F	
	□□S□□W -□EC				MIL-STD-810F	
	□□S□□W -□DR				IEC60068-2-6	
	□□S□□W -□ED				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 $\pm 8kV$ and Contact $\pm 6kV$	Perf. Criteria A
Radiated immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast transient	EN61000-4-4	$\pm 2kV$	Perf. Criteria A
Surge	EN61000-4-5	$\pm 1kV$	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

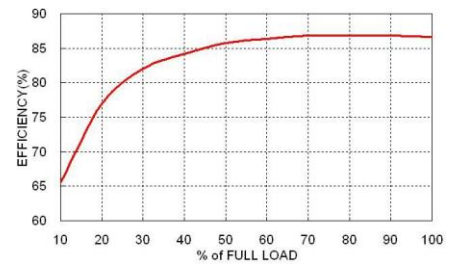
## CHARACTERISTIC CURVE



UFEC30-48S05W Derating Curve



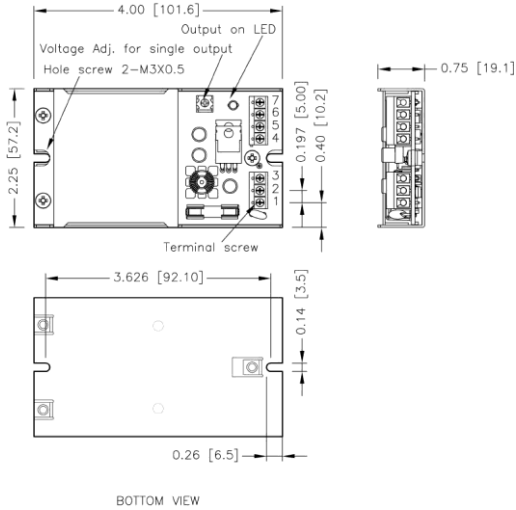
UFEC30-48S05W Efficiency vs. Input Voltage



UFEC30-48S05W Efficiency vs. Output Load

## MECHANICAL DRAWING

### CHASSIS MOUNTING TYPE



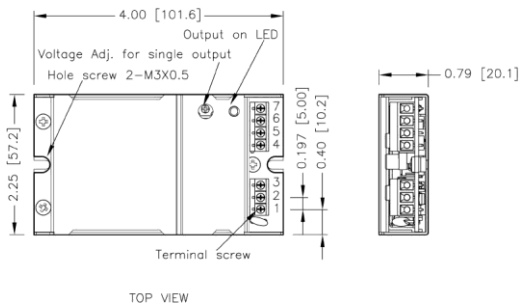
### TERMINAL CONNECTION

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

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

1. All dimensions in Inch [mm]
2. Tolerance : X.XX±0.02 [X.X±0.5]  
X.XXX±0.01 [X.XX±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

