



# P-DUKE POWER

## 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	<input type="checkbox"/> :NC <input type="checkbox"/> :Positive logic <input type="checkbox"/> :Negative logic	<input type="checkbox"/> : None <input type="checkbox"/> : Conformal Coating	<input type="checkbox"/> : None <input type="checkbox"/> : Enclosed Mounting Type <input type="checkbox"/> : Din Rail Mounting Type <input type="checkbox"/> : 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	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

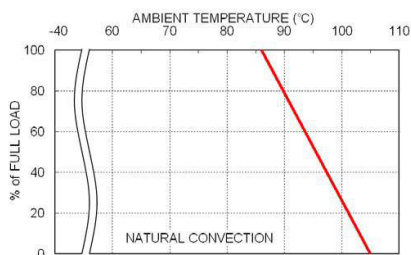
OUTPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Voltage accuracy		3.3Vout Others	-1.5 -1.0		+1.5 +1.0	%
Line regulation	Low Line to High Line at Full Load	Single Dual	-0.2 -0.5		+0.2 +0.5	%
Load regulation	No Load to Full Load	3.3Vout Others	-1.5 -1.0		+1.5 +1.0	%
Cross regulation	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 <sup>6</sup> hrs	

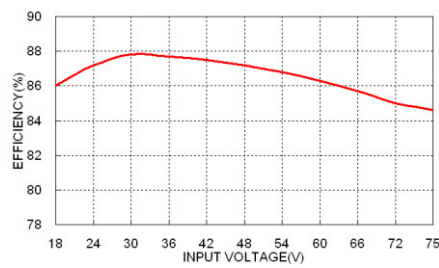
ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature		With derating	-40		+105	°C
Storage temperature range			-40		+105	°C
Thermal shock						MIL-STD-810F
Vibration		□□S□□W -□ □□S□□W -□EC □□S□□W -□DR □□S□□W -□ED				MIL-STD-810F MIL-STD-810F IEC60068-2-6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

**EMC SPECIFICATIONS**

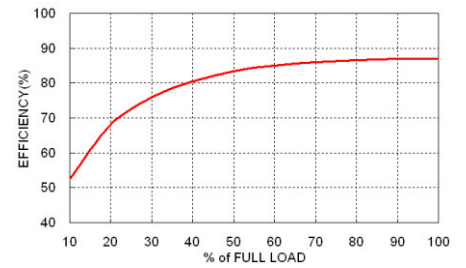
Parameter	Conditions		Level
EMI	EN55032		Class B
EMS	EN55035		
ESD	EN61000-4-2	Air $\pm 8kV$ and Contact $\pm 6kV$	Perf. Criteria A
Radiated immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast transient	EN61000-4-4	$\pm 2kV$	Perf. Criteria A
Surge	EN61000-4-5	$\pm 0.5kV$	Perf. Criteria A
Conducted immunity	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**


UFEC15-48S05W Derating Curve



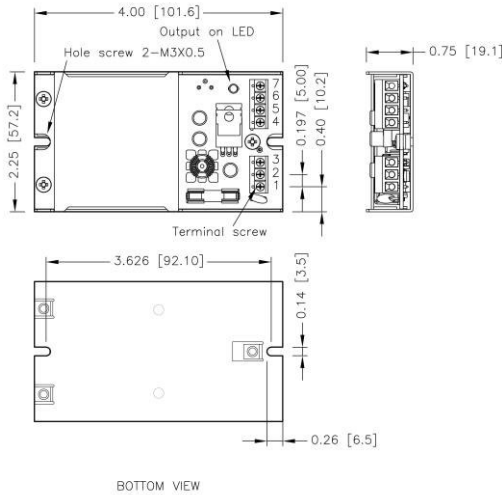
UFEC15-48S05W Efficiency vs. Input Voltage



UFEC15-48S05W Efficiency vs. Output Load

**MECHANICAL DRAWING**

**CHASSIS MOUNTING TYPE**



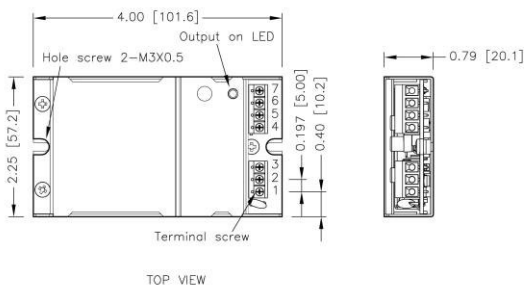
**TERMINAL CONNECTION**

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±0.02 [X.X±0.5]  
X.XXX±0.010 [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**

