



P-DUKE POWER

UFEC30 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

2 : 1
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	-	R	EC
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)		Conformal Coating Options	Assembly Options
	12:9.5~18 24:18~36 48:36~75	S:Single	3P3:3.3 05:5 12:12 15:15 24:24 28:28		□: 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			

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
UFEC30-12S3P3	9.5 ~ 18	3.3	6	117	83	19500
UFEC30-12S05	9.5 ~ 18	5	6	98	85	10200
UFEC30-12S12	9.5 ~ 18	12	2.5	176	86	3240
UFEC30-12S15	9.5 ~ 18	15	2	218	86	1100
UFEC30-12S24	9.5 ~ 18	24	1.25	72	85	510
UFEC30-12S28	9.5 ~ 18	28	1	54	85	340
UFEC30-12D12	9.5 ~ 18	±12	±1.25	66	85	±1020
UFEC30-12D15	9.5 ~ 18	±15	±1	48	85	±675
UFEC30-24S3P3	18 ~ 36	3.3	6	51	85	19500
UFEC30-24S05	18 ~ 36	5	6	51	87	10200
UFEC30-24S12	18 ~ 36	12	2.5	83	88	3300
UFEC30-24S15	18 ~ 36	15	2	94	88	1100
UFEC30-24S24	18 ~ 36	24	1.25	37	87	510
UFEC30-24S28	18 ~ 36	28	1	38	87	340
UFEC30-24D12	18 ~ 36	±12	±1.25	33	87	±1020
UFEC30-24D15	18 ~ 36	±15	±1	34	87	±675
UFEC30-48S3P3	36 ~ 75	3.3	6	31	86	19500
UFEC30-48S05	36 ~ 75	5	6	36	88	10200
UFEC30-48S12	36 ~ 75	12	2.5	37	89	3300
UFEC30-48S15	36 ~ 75	15	2	57	89	1100
UFEC30-48S24	36 ~ 75	24	1.25	28	87	510
UFEC30-48S28	36 ~ 75	28	1	28	87	340
UFEC30-48D12	36 ~ 75	±12	±1.25	22	87	±1020
UFEC30-48D15	36 ~ 75	±15	±1	22	87	±675

INPUT SPECIFICATIONS							
Parameter	Conditions			Min.	Typ.	Max.	Unit
Operating input voltage range	12Vin(nom)			9.5	12	18	VDC
	24Vin(nom)			18	24	36	
	48Vin(nom)			36	48	75	
Input fuse	slow blow	12Vin(nom)			6		A
		24Vin(nom)			6		
		48Vin(nom)			4		
In-rush current				15		A	
Start up voltage	12Vin(nom)					9.5	VDC
	24Vin(nom)					18	
	48Vin(nom)					36	
Shutdown voltage	12Vin(nom)			7	8	9	VDC
	24Vin(nom)			15	16	17.5	
	48Vin(nom)			32.5	34.5	35.5	
Start up time	Constant resistive load	Power up		100		ms	
		Remote ON/OFF		25			
Input surge voltage	100ms, max.	12Vin(nom)					VDC
		24Vin(nom)					
		48Vin(nom)					
Remote ON/OFF	Referred to -Vin pin	Positive logic	DC-DC ON	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		2.5		mA	

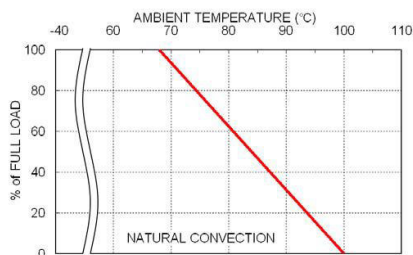
OUTPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Voltage accuracy	3.3Vout		-1.5		+1.5	%
	Others		-1.0		+1.0	
Line regulation	Low Line to High Line at Full Load		-0.5		+0.5	%
Load regulation	No Load to Full Load		3.3Vout		+1.5	%
			Others		-1.0	
Cross regulation	Asymmetrical load 25%/100% FL		-5.0		+5.0	%
Voltage adjustability	Single output		28Vout		+17	%
			Others		-3	
Ripple and noise	Measured by 20MHz bandwidth	Single	3.3Vout, 5Vout		50	mVp-p
			12Vout, 15Vout		75	
		24Vout, 28Vout		100		
		Dual	All		100	
Temperature coefficient			-0.02		+0.02	%/°C
Transient response recovery time	25% load step change			300		µs
Over voltage protection	Zener diode clamp		3.3Vout		3.9	VDC
			5Vout		6.2	
			12Vout		15	
			15Vout		18	
			24Vout		30	
			28Vout		36	
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	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				1.259 x 10 ⁶ hrs	

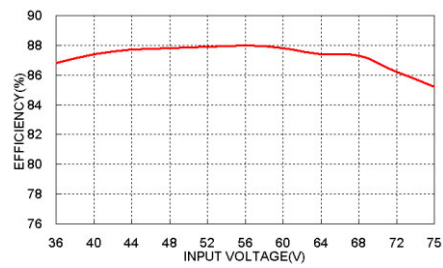
ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature	With derating		-40		+100	°C
Maximum case temperature					100	°C
Over temperature protection	Case of DC/DC module		110			°C
Storage temperature range			-40		+105	°C
Thermal shock					MIL-STD-810F	
Vibration					MIL-STD-810F	
					MIL-STD-810F -EC	
					MIL-STD-810F -DR	
					IEC60068-2-6	
					IEC60068-2-6	
Relative humidity					5% to 95% RH	

EMC SPECIFICATIONS

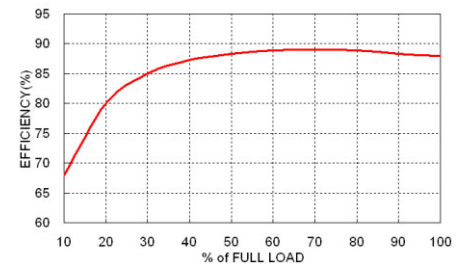
Parameter	Conditions		Level
EMI	EN55032		Class B
EMS	EN55035		
ESD	EN61000-4-2	Air \pm 8kV and Contact \pm 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast transient	EN61000-4-4	\pm 2kV	Perf. Criteria A
Surge	EN61000-4-5	\pm 1kV	Perf. Criteria A
Conducted immunity	EN61000-4-6	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


UFEC30-48S05 Derating Curve



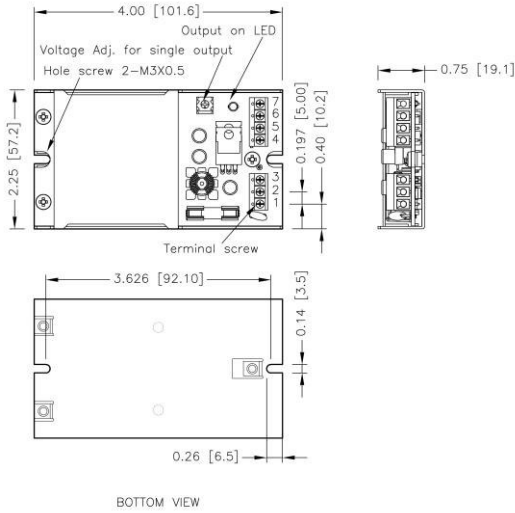
UFEC30-48S05 Efficiency vs. Input Voltage



UFEC30-48S05 Efficiency vs. Output Load

MECHANICAL DRAWING

CHASSIS MOUNTING TYPE



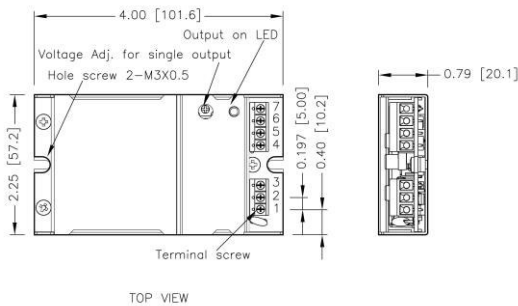
TERMINAL CONNECTION

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

