



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

CE CB

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 Option	Assembly Option	
	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) 24Vin(nom) 48Vin(nom)	9.5 18 36	12 24 48	18 36 75	VDC
Input fuse	slow blow 12Vin(nom) 24Vin(nom) 48Vin(nom)		6 6 4		A
In-rush current			15		A
Start up voltage	12Vin(nom) 24Vin(nom) 48Vin(nom)			9.5 18 36	VDC
Shutdown voltage	12Vin(nom) 24Vin(nom) 48Vin(nom)	7.5 15.5 32.5	8 16 33	9 17.5 35.5	VDC
Start up time	Constant resistive load Power up Remote ON/OFF		100 25		ms
Input surge voltage	100ms, max. 12Vin(nom) 24Vin(nom) 48Vin(nom)			36 50 100	VDC
Remote ON/OFF	Referred to –Vin pin Positive logic DC-DC ON DC-DC OFF Input current of Ctrl pin Remote off input current	-0.5	Open or 3 ~ 12VDC Short or 0 ~ 1.2VDC 2.5	0.5	mA 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			-0.5		+0.5	%
Load regulation	No Load to Full Load			-1.5 -1.0		+1.5 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL			-5.0		+5.0	%
Voltage adjustability	Single output			-3 -10		+17 +10	%
Ripple and noise	Measured by 20MHz bandwidth	Single	3.3Vout, 5Vout 12Vout, 15Vout 24Vout, 28Vout		50 75 100		mVp-p
		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				3.9 6.2 15 18 30 36		VDC
Output indicator				Green LED			
Over load 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	1600			VDC
		Input (Output) to Chassis	1600			
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4000	pF
Switching frequency			270	300	330	kHz
Safety meets	IEC/ UL/ EN60950-1				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	

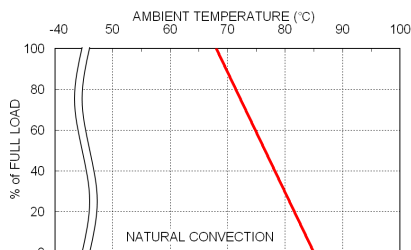
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature		Without derating	-40		+61	°C
		With derating	+61		+93	
Over temperature protection	Case of DC/DC module			+110		°C
Storage temperature range			-40		+105	°C
Thermal shock						MIL-STD-810F
Vibration		□□S□□				MIL-STD-810F
		□□S□□ -EC				MIL-STD-810F
		□□S□□ -DR				IEC60068-2-6
		□□S□□ -ED				IEC60068-2-6
Relative humidity						5% to 95% RH

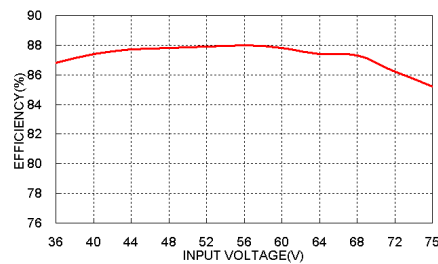
EMC SPECIFICATIONS

Parameter	Conditions		Level
EMI	EN55032		Class B
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	$\pm 1\text{kV}$	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

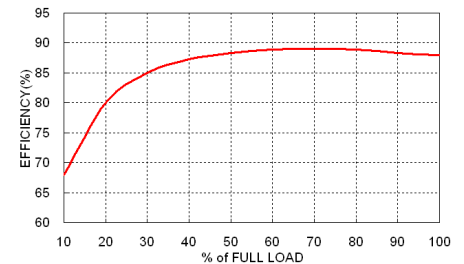
CHARACTERISTIC CURVE



UFEC30-48S05 Derating Curve



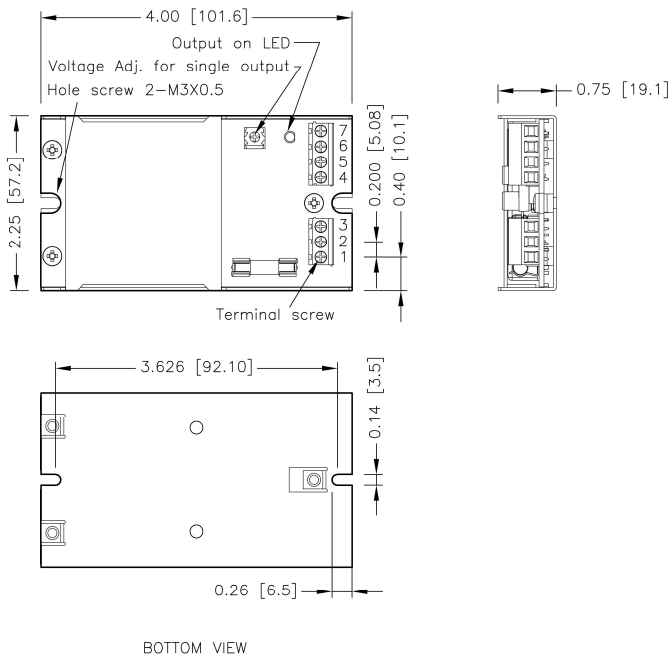
UFEC30-48S05 Efficiency vs. Input Voltage



UFEC30-48S05 Efficiency vs. Output Load

MECHANICAL DRAWING

CHASSIS MOUNTING TYPE



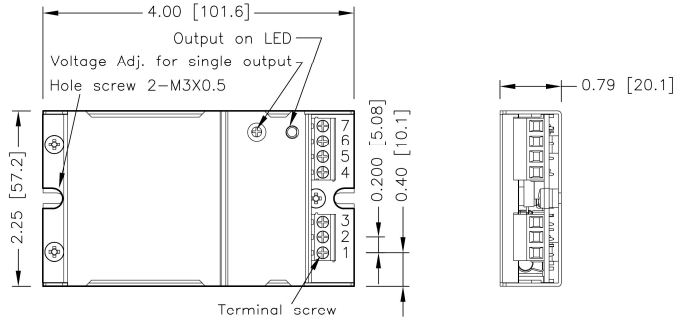
TERMINAL CONNECTION

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

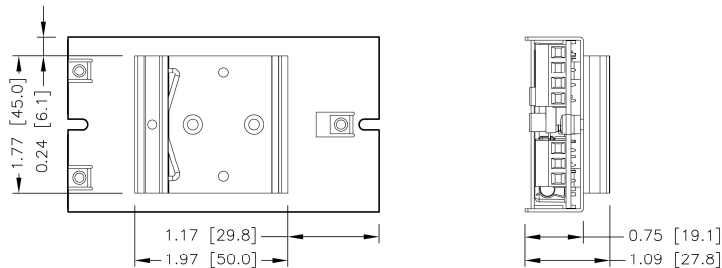
MECHANICAL DRAWING(CONTINUED)

ENCLOSED MOUNTING TYPE



TOP VIEW

DIN RAIL MOUNTING TYPE



BOTTOM VIEW

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