

UFEC30W SERIES

CHASSIS-MOUNT DC-DC CONVERTER

4:1 ULTRA WIDE INPUT RANGE
UP TO 30 Watts



FEATURES

- NO MINIMUM LOAD REQUIRED
- 1600VDC INPUT TO OUTPUT ISOLATION
- APPLICATION OF CHASSIS-MOUNT DC/DC CONVERTERS
- SCREW TERMINALS FOR INPUT AND OUTPUT CONNECTIONS
- INTERNAL INPUT FUSE PROTECTION
- INTERNAL OUTPUT LED INDICATOR
- MEET EN55022 CLASS B
- SAFETY MEETS UL60950-1, EN60950-1, & IEC60950-1
- CE MARKED
- COMPLIANT TO RoHS II & REACH

APPLICATIONS

- WIRELESS NETWORK
- TELECOM/DATACOM
- INDUSTRY CONTROL SYSTEM
- MEASUREMENT EQUIPMENT
- SEMICONDUCTOR EQUIPMENT

1600VDC ISOLATION	REMOTE CONTROL	UVP	OCP	SCP	OVP	FUSE INCLUDED	INRUSH LIMIT	REVERSE POLARITY PROTECTION
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TECHNICAL SPECIFICATION

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

Model Number	Input Range	Output Voltage	Output Current @Full Load	Input Current @ No Load	Efficiency	Maximum Capacitor Load ⁽¹⁾
	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

PART NUMBER STRUCTURE

UFEC30 -	48	S	05	W	-	N	EC
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Option	Assembly Option	
	24: 10~40 48: 18~75	S: Single	3P3: 3.3 05: 5 12: 12 15: 15 24: 24 28: 28	4:1	☐ : Positive logic N: Negative logic	☐ : No Assembly Option EC: Enclosed Mounting Type DR: Din Rail Mounting Type ED: Enclosed & Din Rail Mounting Type	
		D: Dual	12: ±12 15: ±15				

INPUT SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range		24Vin(nom) 48Vin(nom)	10 18	24 48	40 75	VDC
Input fuse (slow blow)		24Vin(nom) 48Vin(nom)		6 4		A
In-rush current				15		A
Input reflected ripple current	Nominal input and Full load			15		mAp-p
Start up voltage		24Vin(nom) 48Vin(nom)			10 18	VDC
Shutdown voltage		24Vin(nom) 48Vin(nom)		8 16		VDC
Start up time	Constant resistive load	Power up Remote ON/OFF		100 20		ms
Input surge voltage	100ms, max.	24Vin(nom) 48Vin(nom)			50 100	VDC
Remote ON/OFF	Referred to –Vin pin	Positive logic DC-DC ON (Standard) DC-DC OFF Negative logic DC-DC ON (Option) DC-DC OFF Input current of Ctrl pin Remote off input current			Open or 3 ~ 12VDC Short or 0 ~ 1.2VDC Short or 0 ~ 1.2VDC Open or 3 ~ 12VDC -0.5 0.5 3	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	3.3Vout Others	-1.5 -1.0		+1.5 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL	Dual	-5.0		+5.0	%
Voltage adjustability	Single output	28Vout Others	-3 -10		+17 +10	%
Ripple and noise	Measured by 20MHz bandwidth	Single 3.3Vout, 5Vout, 12Vout, 15Vout 24Vout, 28Vout Dual All		50 75 130 100		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 12Vout 15Vout 24Vout 28Vout		3.9 6.2 15 18 30 36		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			270	300	330	kHz
Safety meets					UL60950-1 EN60950-1 IEC60950-1	
Chassis material					Aluminum	
Weight					110g (3.87oz)	
MTBF	MIL-HDBK-217F, Full load				8.277 x 10 ⁵ hrs	

ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	Without derating With derating	-40 +59		+59 +85	°C
Over temperature protection	DC/DC Converter Case		115		°C
Storage temperature range		-40		+105	°C
Thermal shock				MIL-STD-810F	
Vibration				MIL-STD-810F	
Relative humidity				5% to 95% RH	

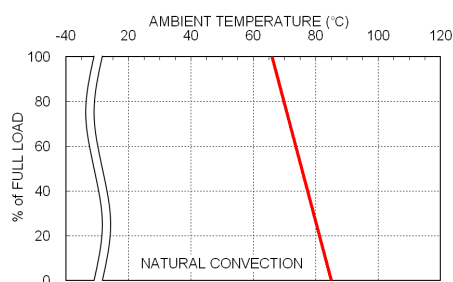
EMC SPECIFICATIONS

Parameter	Conditions	Level
EMI	EN55022	Class B
ESD	EN61000-4-2 Air ± 8 kV and Contact ± 6 kV	Perf. Criteria A
Radiated immunity	EN61000-4-3 10V/m	Perf. Criteria A
Fast transient	EN61000-4-4 ± 2 kV	Perf. Criteria A
Surge	EN61000-4-5 ± 1 kV	Perf. Criteria A
Conducted immunity	EN61000-4-6 10Vr.m.s	Perf. Criteria A

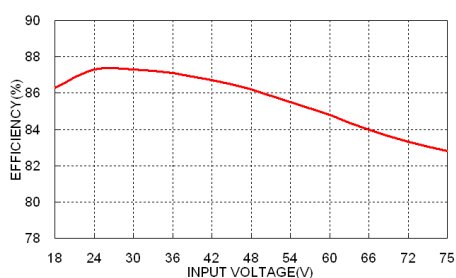
Note:

1. Test by minimum input and constant resistive load.

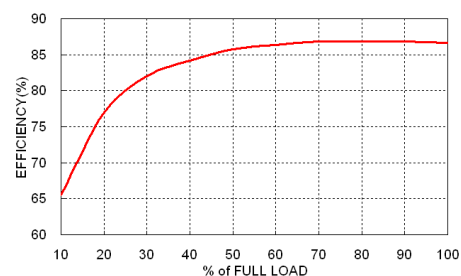
CHARACTERISTIC CURVE



UFEC30-48S05W Derating Curve

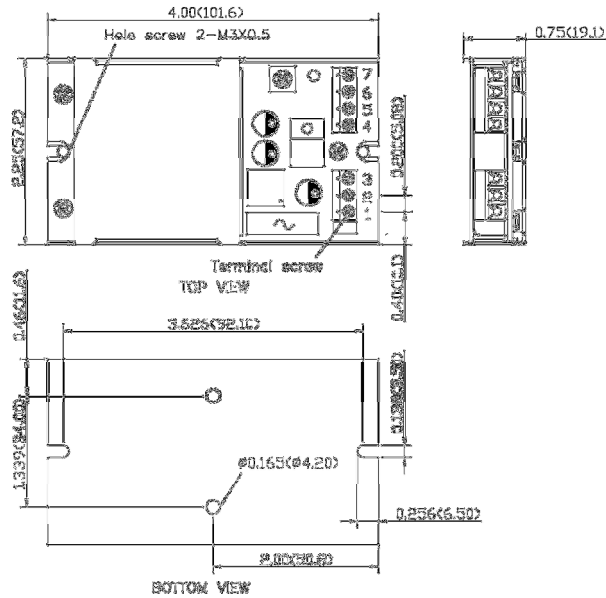


UFEC30-48S05W Efficiency vs. Input Voltage



UFEC30-48S05W Efficiency vs. Output Load

CHASSIS MOUNTING TYPE



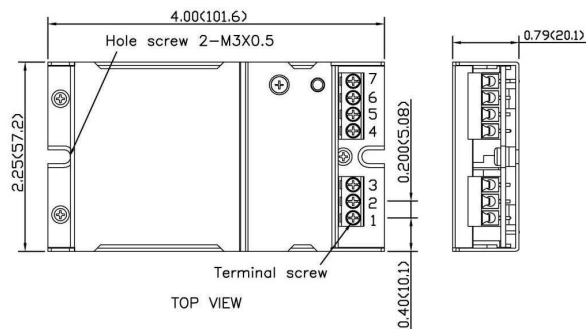
PIN CONNECTION

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	NC	NC
5	-Vout	-Vout
6	+Vout	Common
7	NC	+Vout

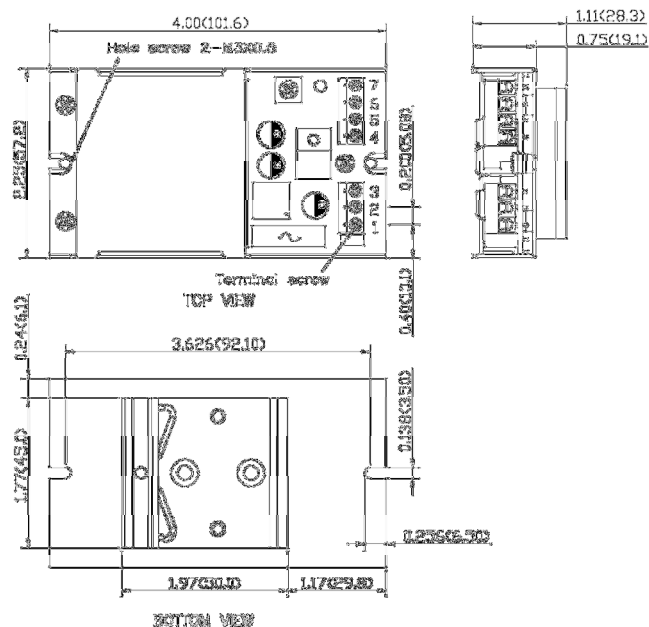
* NC : No Connection

* Screw terminals –
wire range from 14 to 18 AWG

ENCLOSED MOUNTING TYPE



DIN RAIL MOUNTING TYPE



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)