POWER MATE TECHNOLOGY CO., LTD.

UFEC30W SERIES

30WATTS DC-DC CONVERTER

FEATURES

- APPLICATION OF CHASSIS-MOUNT DC/DC CONVERTERS
- 30 WATTS MAXIMUM OUTPUT POWER
- OUTPUT CURRENT UP TO 6A
- 4:1 ULTRA WIDE INPUT VOLTAGE RANGE
- SCREW TERMINALS FOR INPUT AND OUTPUT CONNECTIONS
- INTERNAL INPUT FUSE
- INTERNAL INPUT REVERSAL PROTECTION
- INTERNAL INPUT IN-RUSH CURRENT LIMIT CIRCUIT
- INTERNAL OUTPUT LED INDICATOR
- MEET EN55022 CLASS B
- COMPLIANT TO RoHS EU DIRECTIVE 2011/65/EU

OPTIONS

Din Rail Mounting For DIN 35 Rail
Negative logic Remote ON/OFF

APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement Equipment
Semiconductor Equipment

DESCRIPTION

The UFEC30W series is a value added item designed to easy application of chassis mount DC-DC converters. The UFEC30W series with 4:1 wide input voltage of 10~40VDC and 18~75VDC and features 1600VDC of isolation, short-circuit and over-voltage protection.

TECHNICAL SPECIFICATION

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

OUTPUT SPECIFICATIONS

Output power			30 Watts, max.
Voltage accuracy		3.3Vout Others	± 1.5% ± 1%
Minimum load			0%
Voltage adjustability (Note 6)		Single 28Vout Single Others	-3% ~ +17% ± 10%
Line regulation	LL to HL at Full Load		± 0.5%
Load regulation	No Load to Full Load	3.3Vout Others	± 1.5% ± 1%
Load cross regulation (Note 7)		Dual	± 5%
Ripple and noise	20MHz bandwidth		See table
Temperature coefficient			± 0.02% / ºC, max.
Transient response recovery time		25% load step change	250µs
Over voltage protection Zener diode clamp		3.3VDC output 5VDC output 12VDC output 15VDC output 24VDC output 28VDC output	3.9VDC 6.2VDC 15VDC 18VDC 30VDC 36VDC
Output indicator			Green LED
Over load protection	% of FL at nominal input		150%, max.
Short circuit protection			Continuous, automatics recovery

GENERAL SPECIFICATIONS

Efficiency		See table
Isolation voltage	Input to Output Input (Output) to Chassis	1600VDC, min. 1minute 1600VDC, min. 1minute
Isolation resistance	500VDC	10^9 ohms, min.
Isolation capacitance		4000pF, max.
Switching frequency		300kHz±10%
Design meets safety standard		IEC60950-1, UL60950-1, EN60950-1
Chassis material		Aluminum
Dimensions		4.00 X 2.25 X 0.75 Inch (101.6 X 57.15 X 19.05 mm)
Weight		110g (3.87oz)
MTBF (Note 1)	BELLCORE TR-NWT-000332 MIL-HDBK-217F	1.124×10^6 hrs 3.455×10^5 hrs

INPUT SPECIFICATIONS

Input voltage range	24VDC nominal input 48VDC nominal input		10 ~ 40VDC 18 ~ 75VDC
Input surge voltage	24VDC input 48VDC input		50VDC 100ms,max. 100VDC 100ms,max.
Input fuse (slow blow)	24VDC input 48VDC input		6A 4A
In-rush current			15A
Input reflected ripple current			15mAp-p
Start up time	Nominal input and constant resistive load	Power up Remote ON/OFF	100ms 10ms
Start-up voltage	24VDC input 48VDC input		10VDC 18VDC
Shutdown voltage	24VDC input 48VDC input		8VDC 16VDC
Remote ON/OFF (Note 8)			
(Positive logic)(Standard)	DC-DC ON DC-DC OFF		Open or 3V < Vr < 12V Short or 0V < Vr < 1.2V
(Negative logic)(Option)	DC-DC ON DC-DC OFF		Short or 0V < Vr < 1.2V Open or 3V < Vr < 12V
Input current of remote control pin	Nominal input		-0.5mA ~ +0.5mA
Remote off state input current	Nominal input		3mA

ENVIRONMENTAL SPECIFICATIONS

Operating ambient temperature		-40ºC ~ +59ºC (without derating) +59ºC ~ +85ºC (with derating)
Storage temperature range		-40ºC ~ +105ºC.
Over temperature protection (DC/DC Converter Case)		115ºC
Thermal shock		MIL-STD-810F
Vibration		MIL-STD-810F
Relative humidity		5% to 95% RH

EMC CHARACTERISTICS

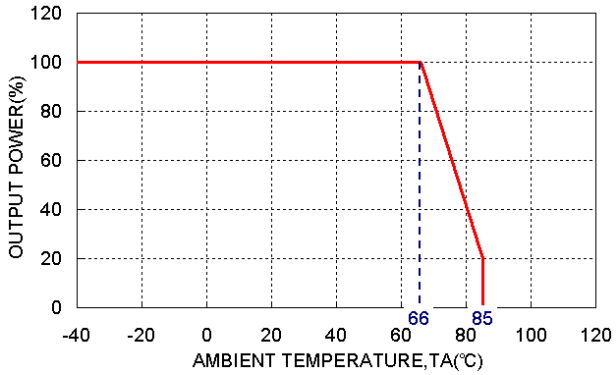
EMI	EN55022		Class B
ESD	EN61000-4-2	Air ± 8kV Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient	EN61000-4-4	± 2kV	Perf. Criteria A
Surge	EN61000-4-5	± 1kV	Perf. Criteria A
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

Model Number	Input Range	Output Voltage	Output Current		Output [2] Ripple & Noise	No load [3] Input Current	Eff [4] (%)	Capacitor [5] Load max
			Min. load	Full load				
UFEC30-24S3P3W	10 ~ 40 VDC	3.3 VDC	0mA	6000mA	50mVp-p	51mA	86	19500μF
UFEC30-24S05W	10 ~ 40 VDC	5 VDC	0mA	6000mA	50mVp-p	66mA	86	10200μF
UFEC30-24S12W	10 ~ 40 VDC	12 VDC	0mA	2500mA	75mVp-p	68mA	86	3300μF
UFEC30-24S15W	10 ~ 40 VDC	15 VDC	0mA	2000mA	75mVp-p	74mA	87	1100μF
UFEC30-24S24W	10 ~ 40 VDC	24 VDC	0mA	1250mA	130mVp-p	38mA	83	500μF
UFEC30-24S28W	10 ~ 40 VDC	28 VDC	0mA	1000mA	130mVp-p	44mA	84	340μF
UFEC30-24D12W	10 ~ 40 VDC	±12VDC	0mA	±1250mA	100mVp-p	33mA	83	±1000μF
UFEC30-24D15W	10 ~ 40 VDC	±15VDC	0mA	±1000mA	100mVp-p	39mA	84	±680μF
UFEC30-48S3P3W	18 ~ 75 VDC	3.3 VDC	0mA	6000mA	50mVp-p	31mA	86	19500μF
UFEC30-48S05W	18 ~ 75 VDC	5 VDC	0mA	6000mA	50mVp-p	31mA	87	10200μF
UFEC30-48S12W	18 ~ 75 VDC	12 VDC	0mA	2500mA	75mVp-p	37mA	86	3300μF
UFEC30-48S15W	18 ~ 75 VDC	15 VDC	0mA	2000mA	75mVp-p	47mA	87	1100μF
UFEC30-48S24W	18 ~ 75 VDC	24 VDC	0mA	1250mA	130mVp-p	29mA	84	500μF
UFEC30-48S28W	18 ~ 75 VDC	28 VDC	0mA	1000mA	130mVp-p	29mA	85	340μF
UFEC30-48D12W	18 ~ 75 VDC	±12VDC	0mA	±1250mA	100mVp-p	27mA	84	±1000μF
UFEC30-48D15W	18 ~ 75 VDC	±15VDC	0mA	±1000mA	100mVp-p	27mA	85	±680μF

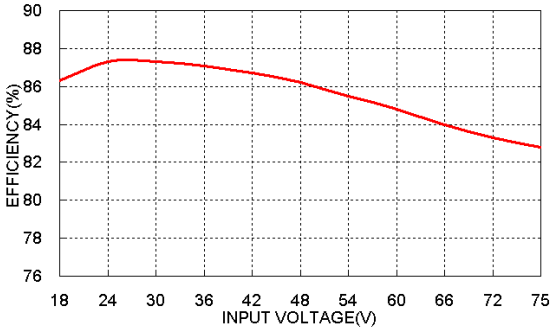
Note

1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40ºC.
   MIL-HDBK-217F Notice2 @Ta=25 ºC, Full load(Ground, Benign, controlled environment).
2. Typical value at nominal input and full load. (20MHz BW.)
3. Typical value at nominal input and no load.
4. Typical value at nominal input and full load.
5. Test by minimum input and constant resistive load.
6. Single output installs a potentiometer to adjust the output voltage.
7. Cross regulation for dual output : asymmetrical load 25% / 100% FL
8. The ON/OFF control pin voltage is referenced to –INPUT
   To order negative logic ON/OFF control add the suffix-N (Ex:UFEC30-48S05W-N)

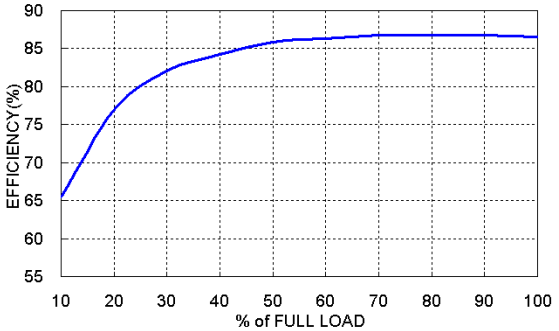
UFEC30-48S05W Derating Curve



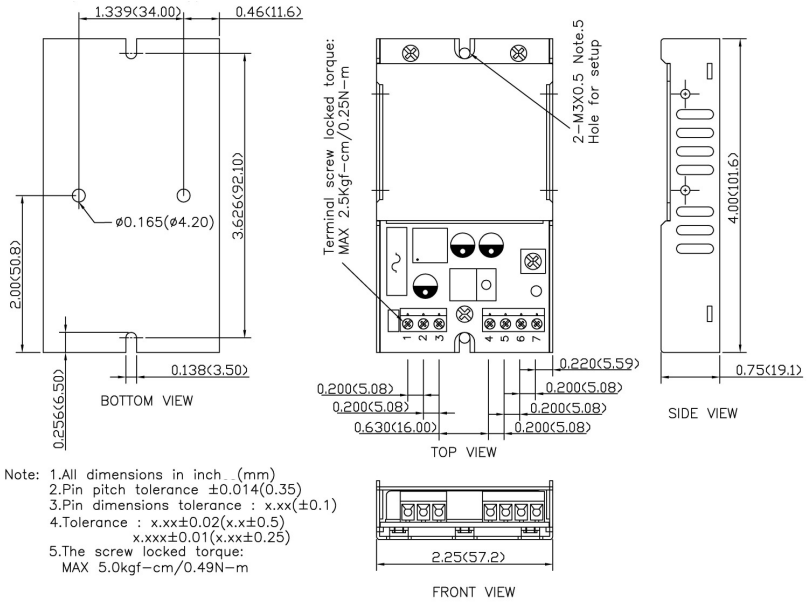
UFEC30-48S05W Efficiency VS Input Voltage



UFEC30-48S05W Efficiency VS Output Current

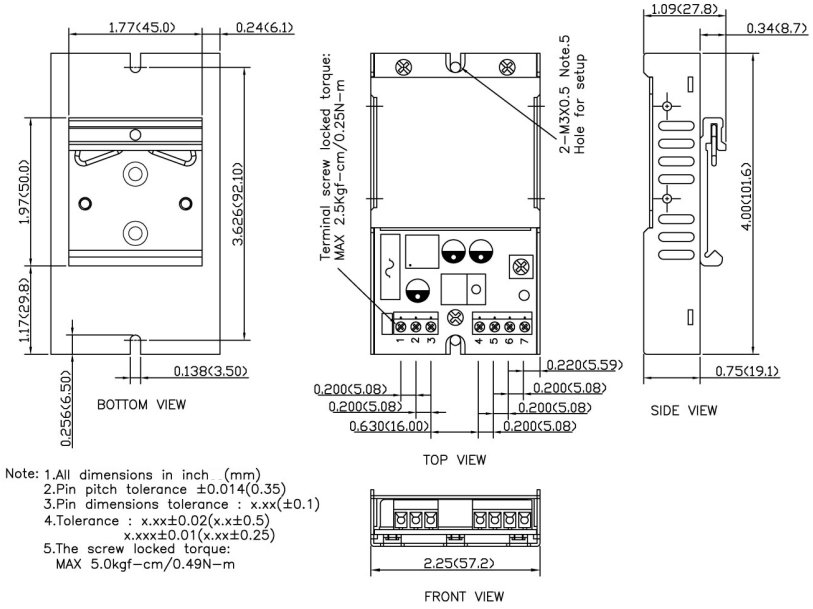


MECHANICAL DRAWING :



Note: 1.All dimensions in inch (mm)
2.Pin pitch tolerance ±0.014(0.35)
3.Pin dimensions tolerance : x.xx(±0.1)
4.Tolerance : x.xx±0.02(x.x±0.5)
x.xxx±0.01(x.xx±0.25)
5.The screw locked torque:
MAX 5.0kgf-cm/0.49N-m

DIN RAIL MOUNTING TYPE OPTION



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2.Pin pitch tolerance ±0.014(0.35)
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4.Tolerance : x.xx±0.02(x.x±0.5)
x.xxx±0.01(x.xx±0.25)
5.The screw locked torque:
MAX 5.0kgf-cm/0.49N-m

PIN CONNECTION		
PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
3	CTRL	CTRL
4	NC	NC
5	-OUTPUT	-OUTPUT
6	+OUTPUT	COMMON
7	NC	+OUTPUT

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

PRODUCT OPTIONS TABLE	
Option	Suffix
Din Rail Mounting Type	-DR
Negative logic Remote ON/OFF	-N