



FEATURES

- APPLICATION OF CHASSIS-MOUNT DC/DC CONVERTERS
- 30 WATTS MAXIMUM OUTPUT POWER
- OUTPUT CURRENT UP TO 6A
- 2:1 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

APPLICATIONS

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

DESCRIPTION

The UFEC30 series is a value added item designed to easy application of chassis mount DC-DC converters. The UFEC30 series with 2:1 wide input voltage of 9.5~18VDC, 18~36VDC and 36~75VDC and features 1600VDC of isolation, short-circuit and over-voltage protection.

TECHNICAL SPECIFICATION

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

OUTPUT SPECIFICATIONS			
Output power		30 Watts, max.	
Voltage accuracy	3.3Vout	± 1.5%	
	Others	± 1%	
Minimum load		0%	
Voltage adjustability (Note 6)	Single 28Vout	-3% ~ +17%	
	Single Others	± 10%	
Line regulation	LL to HL at Full Load	± 0.5%	
Load regulation	No Load to Full Load	3.3Vout ± 1.5%	
	Others	± 1%	
Load cross regulation (Note 7)	Dual	± 5%	
Ripple and noise	20MHz bandwidth	See table	
Temperature coefficient		±0.02% / °C, max.	
Transient response recovery time	25% load step change	300µs	
Over voltage protection Zener diode clamp	3.3VDC output	3.9VDC	
	5VDC output	6.2VDC	
	12VDC output	15VDC	
	15VDC output	18VDC	
	24VDC output	30VDC	
	28VDC output	36VDC	
Output indicator		Green LED	
Over load protection	% of FL at nominal input	150%, max.	
Short circuit protection		Continuous, automatic recovery	
GENERAL SPECIFICATIONS			
Efficiency		See table	
Isolation voltage	Input to Output	1600VDC, min. 1minute	
	Input (Output) to Chassis	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)	MIL-HDBK-217F	1.259 x 10 ⁶ hrs	

INPUT SPECIFICATIONS			
Input voltage range	12VDC nominal input	9.5 ~ 18VDC	
	24VDC nominal input	18 ~ 36VDC	
	48VDC nominal input	36 ~ 75VDC	
Input surge voltage	12VDC input	36VDC 100ms, max.	
	24VDC input	50VDC 100ms, max.	
	48VDC input	100VDC 100ms, max.	
Input fuse (slow blow)	12VDC input	6A	
	24VDC input	6A	
	48VDC input	4A	
In-rush current		15A	
Input reflected ripple current		15mA p-p	
Start up time	Nominal input and constant resistive load	Power up	100ms
		Remote ON/OFF	25ms
Start-up voltage	12VDC input	9.5VDC	
	24VDC input	18VDC	
	48VDC input	36VDC	
Shutdown voltage	12VDC input	8VDC	
	24VDC input	16VDC	
	48VDC input	33VDC	
Remote ON/OFF (Note 8)			
(Positive logic)	DC-DC ON	Open or 3.0V < Vr < 12V	
	DC-DC OFF	Short or 0V < Vr < 1.2V	
Input current of remote control pin	Nominal input	-0.5mA ~ 0.5mA	
Remote off state input current	Nominal input	2.5mA	

ENVIRONMENTAL SPECIFICATIONS	
Operating ambient temperature	-40°C ~ +61°C (without derating) +61°C ~ +88°C (with derating)
Storage temperature range	-40°C ~ +105°C
Over temperature protection (DC/DC Converter Case)	110°C
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	Perf. Criteria A
		Contact ± 6kV	
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 V.r.m.s	Perf. Criteria A

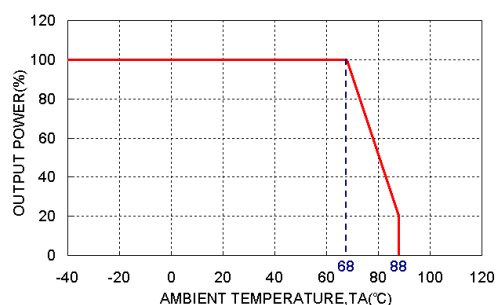


Model Number	Input Range	Output Voltage	Output Current		Output ⁽²⁾ Ripple & Noise	No load ⁽³⁾ Input Current	Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max
			Min. load	Full load				
UFEC30-12S3P3	9.5 ~ 18 VDC	3.3 VDC	0mA	6000mA	50mVp-p	117mA	83	19500μF
UFEC30-12S05	9.5 ~ 18 VDC	5 VDC	0mA	6000mA	50mVp-p	98mA	85	10200μF
UFEC30-12S12	9.5 ~ 18 VDC	12 VDC	0mA	2500mA	75mVp-p	176mA	86	3240μF
UFEC30-12S15	9.5 ~ 18 VDC	15 VDC	0mA	2000mA	75mVp-p	218mA	86	1100μF
UFEC30-12S24	9.5 ~ 18 VDC	24 VDC	0mA	1250mA	100mVp-p	72mA	85	510μF
UFEC30-12S28	9.5 ~ 18 VDC	28 VDC	0mA	1000mA	100mVp-p	54mA	85	340μF
UFEC30-12D12	9.5 ~ 18 VDC	±12 VDC	0mA	±1250mA	100mVp-p	66mA	85	±1020μF
UFEC30-12D15	9.5 ~ 18 VDC	±15 VDC	0mA	±1000mA	100mVp-p	48mA	85	±675μF
UFEC30-24S3P3	18 ~ 36 VDC	3.3 VDC	0mA	6000mA	50mVp-p	51mA	85	19500μF
UFEC30-24S05	18 ~ 36 VDC	5 VDC	0mA	6000mA	50mVp-p	51mA	87	10200μF
UFEC30-24S12	18 ~ 36 VDC	12 VDC	0mA	2500mA	75mVp-p	83mA	88	3300μF
UFEC30-24S15	18 ~ 36 VDC	15 VDC	0mA	2000mA	75mVp-p	94mA	88	1100μF
UFEC30-24S24	18 ~ 36 VDC	24 VDC	0mA	1250mA	75mVp-p	37mA	87	510μF
UFEC30-24S28	18 ~ 36 VDC	28 VDC	0mA	1000mA	75mVp-p	38mA	87	340μF
UFEC30-24D12	18 ~ 36 VDC	±12 VDC	0mA	±1250mA	100mVp-p	33mA	87	±1020μF
UFEC30-24D15	18 ~ 36 VDC	±15 VDC	0mA	±1000mA	100mVp-p	34mA	87	±675μF
UFEC30-48S3P3	36 ~ 75 VDC	3.3 VDC	0mA	6000mA	50mVp-p	31mA	86	19500μF
UFEC30-48S05	36 ~ 75 VDC	5 VDC	0mA	6000mA	50mVp-p	36mA	88	10200μF
UFEC30-48S12	36 ~ 75 VDC	12 VDC	0mA	2500mA	75mVp-p	37mA	89	3300μF
UFEC30-48S15	36 ~ 75 VDC	15 VDC	0mA	2000mA	75mVp-p	57mA	89	1100μF
UFEC30-48S24	36 ~ 75 VDC	24 VDC	0mA	1250mA	75mVp-p	28mA	87	510μF
UFEC30-48S28	36 ~ 75 VDC	28 VDC	0mA	1000mA	75mVp-p	28mA	87	340μF
UFEC30-48D12	36 ~ 75 VDC	±12 VDC	0mA	±1250mA	100mVp-p	22mA	87	±1020μF
UFEC30-48D15	36 ~ 75 VDC	±15 VDC	0mA	±1000mA	100mVp-p	22mA	87	±675μF

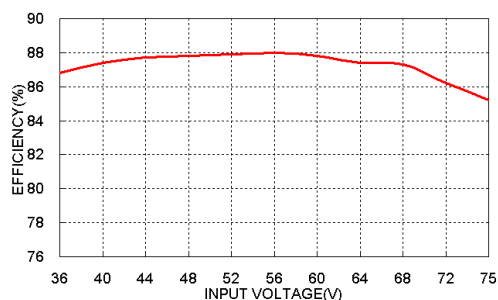
Note

1. MIL-HDBK-217F @Ta=25 °C, Full load.
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

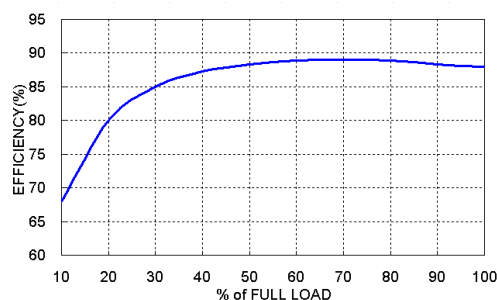
UFEC30-48S05 Derating Curve



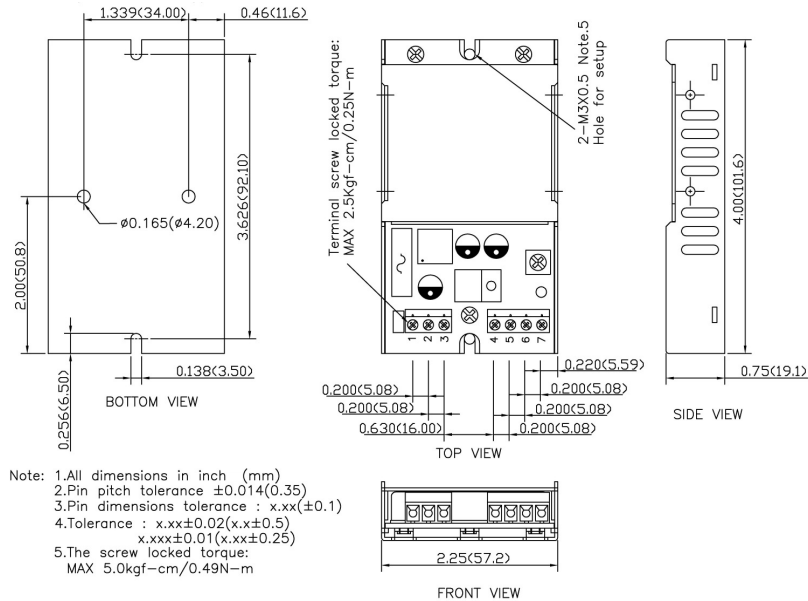
UFEC30-48S05 Efficiency VS Input Voltage



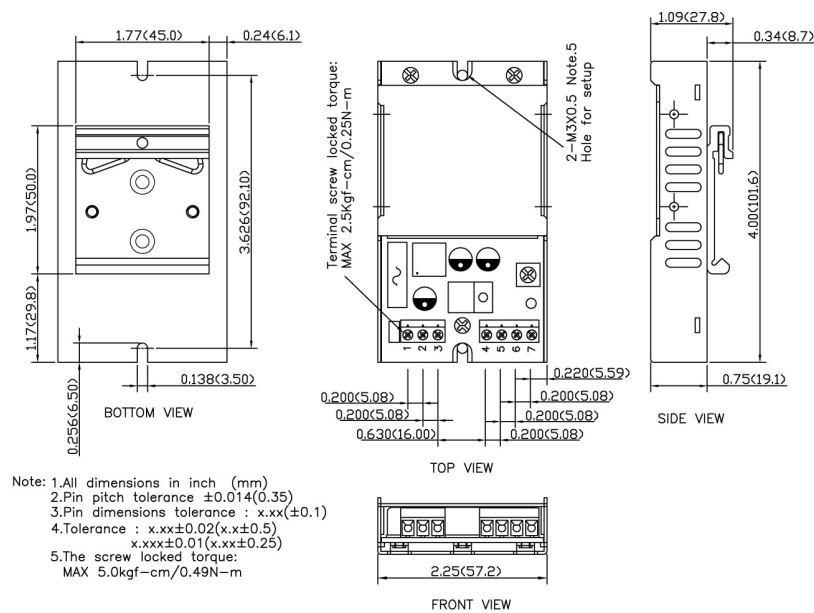
UFEC30-48S05 Efficiency VS Output Current



MECHANICAL DRAWING :



DIN RAIL MOUNTING TYPE OPTION



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