



FEATURES

- APPLICATION OF CHASSIS-MOUNT DC/DC CONVERTERS
- 15 WATTS MAXIMUM OUTPUT POWER
- OUTPUT CURRENT UP TO 4.5A
- 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

APPLICATIONS

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

OPTIONS

Din Rail Mounting For DIN 35 Rail
Remote On/Off Control

DESCRIPTION

The UFEC15W series is a value added item designed to easy application of chassis mount DC-DC converters. The UFEC15W series with 4:1 ultra wide input voltage of 9.5-36VDC 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 25°C otherwise noted

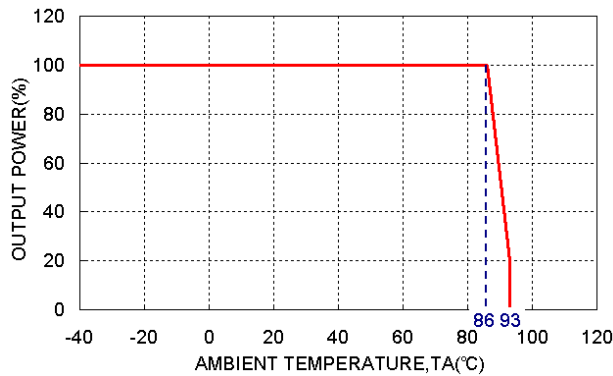
OUTPUT SPECIFICATIONS				INPUT SPECIFICATIONS			
Output power	15 Watts, max.			Input voltage range	24VDC nominal input 48VDC nominal input	9.5 ~ 36VDC 18 ~ 75VDC	
Voltage accuracy	3.3Vout	± 1.5%		Input surge voltage	24VDC input	50VDC 100ms,max	
	Others	± 1%			48VDC input	100VDC 100ms,max	
Minimum load	0%			Input fuse (slow blow)	24VDC input	6A	
Line regulation	LL to HL at Full load	Single	± 0.2%		48VDC input	4A	
		Dual	± 0.5%	In-rush current	15A		
Load regulation	No load to Full load	3.3Vout	± 1.5%		Input reflected ripple current	10mA _{p-p}	
		Others	± 1%	Start up time		Nominal input and constant resistive load	Power up
Load cross regulation (Note 6)	Dual	± 5%			Start-up voltage		
Ripple and noise	20MHz bandwidth	See table		48VDC input		18VDC	
		Temperature coefficient	±0.02% / °C, max.			Shutdown voltage	24VDC input
Transient response recovery time	25% load step change		250µs		48VDC input		15VDC
		Over voltage protection	3.3VDC output	3.9VDC		Remote ON/OFF (Option) (Note 7)	
5VDC output	6.2VDC		(Positive logic)	DC-DC ON	Open or 3 V < Vr < 12V		
Zener diode clamp	12VDC output		15VDC		DC-DC OFF	Short or 0V < Vr < 1.2V	
15VDC output	18VDC		(Negative logic)	DC-DC ON	Short or 0V < Vr < 1.2V		
Output indicator	Green LED			DC-DC OFF	Open or 3 V < Vr < 12V		
	Over load protection	% of FL at nominal input	150%		Input current of Remote control pin	Nominal input	-0.5mA ~ + 0.5mA
Short circuit protection			Continuous, automatics recovery		Remote off state input current	Nominal input	2.5mA
	GENERAL SPECIFICATIONS				ENVIRONMENTAL SPECIFICATIONS		
Efficiency	See table			Operating ambient temperature	-40°C ~ +83°C (without derating) +83°C ~ +93°C (with derating)		
Isolation voltage	Input to Output	1600VDC, min. 1minute		Storage temperature range	-40°C ~ +105°C		
	Input(Output) to chassis	1600VDC, min. 1minute		Thermal shock	MIL-STD-810F		
Isolation resistance	500VDC	10 ⁹ ohms, min.		Vibration	MIL-STD-810F		
Isolation capacitance	4000pF, max.			Relative humidity	5% to 95% RH		
Switching frequency	400kHz±10%			EMC CHARACTERISTICS			
Design meets safety standard	IEC60950-1, UL60950-1, EN60950-1			EMI	EN55022		Class B
Chassis material	Aluminum			ESD	EN61000-4-2	Air	± 8kV
Dimensions	4.00 X 2.25 X 0.75 Inch (101.6 X 57.15 X 19.05 mm)					Contact	± 6kV
	Weight	89g (3.13oz)			Radiated immunity	EN61000-4-3	10 V/m
MTBF (Note 1)	MIL-HDBK-217F	2.544 x 10 ⁶ hrs		Fast transient	EN61000-4-4	± 2kV	Perf. Criteria A
				Surge	EN61000-4-5	± 0.5kV	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				
UFEC15-24S3P3W	9.5 ~ 36 VDC	3.3 VDC	0mA	4500mA	50mVp-p	51mA	85	14700μF
UFEC15-24S05W	9.5 ~ 36 VDC	5 VDC	0mA	3000mA	50mVp-p	66mA	86	7200μF
UFEC15-24S5P1W	9.5 ~ 36 VDC	5.1 VDC	0mA	3000mA	50mVp-p	66mA	86	7200μF
UFEC15-24S12W	9.5 ~ 36 VDC	12 VDC	0mA	1250mA	75mVp-p	25mA	86	1250μF
UFEC15-24S15W	9.5 ~ 36 VDC	15 VDC	0mA	1000mA	75mVp-p	26mA	86	800μF
UFEC15-24D05W	9.5 ~ 36 VDC	± 5 VDC	0mA	± 1500mA	75mVp-p	56mA	86	± 3600μF
UFEC15-24D12W	9.5 ~ 36 VDC	± 12 VDC	0mA	± 625mA	75mVp-p	33mA	87	± 625μF
UFEC15-24D15W	9.5 ~ 36 VDC	± 15 VDC	0mA	± 500mA	75mVp-p	34mA	87	± 400μF
UFEC15-48S3P3W	18 ~ 75 VDC	3.3 VDC	0mA	4500mA	50mVp-p	36mA	85	14700μF
UFEC15-48S05W	18 ~ 75 VDC	5 VDC	0mA	3000mA	50mVp-p	36mA	87	7200μF
UFEC15-48S5P1W	18 ~ 75 VDC	5.1 VDC	0mA	3000mA	50mVp-p	36mA	87	7200μF
UFEC15-48S12W	18 ~ 75 VDC	12 VDC	0mA	1250mA	75mVp-p	17mA	86	1250μF
UFEC15-48S15W	18 ~ 75 VDC	15 VDC	0mA	1000mA	75mVp-p	17mA	86	800μF
UFEC15-48D05W	18 ~ 75 VDC	± 5 VDC	0mA	± 1500mA	75mVp-p	36mA	87	± 3600μF
UFEC15-48D12W	18 ~ 75 VDC	± 12 VDC	0mA	± 625mA	75mVp-p	19mA	87	± 625μF
UFEC15-48D15W	18 ~ 75 VDC	± 15 VDC	0mA	± 500mA	75mVp-p	19mA	87	± 400μF

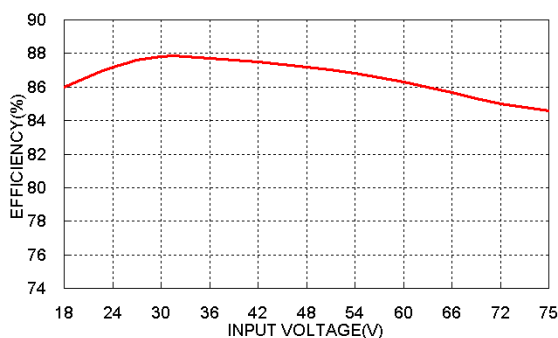
Note:

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. Cross regulation for dual output : asymmetrical load 25% / 100% FL
7. The ON/OFF control pin voltage is referenced to -INPUT .
To order positive logic ON/OFF control add the suffix-P (Ex:UFEC15-48S05W-P)
To order negative logic ON/OFF control add the suffix-N (Ex:UFEC15-48S05W-N)

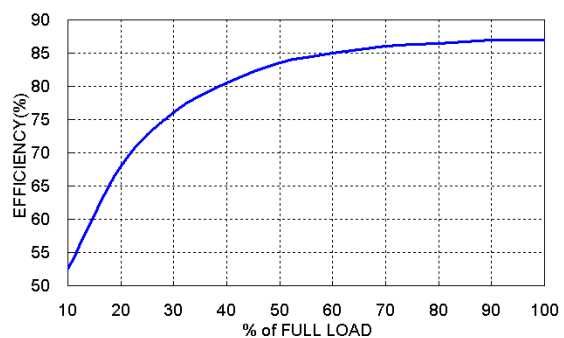
UFEC15-48S05W Derating Curve



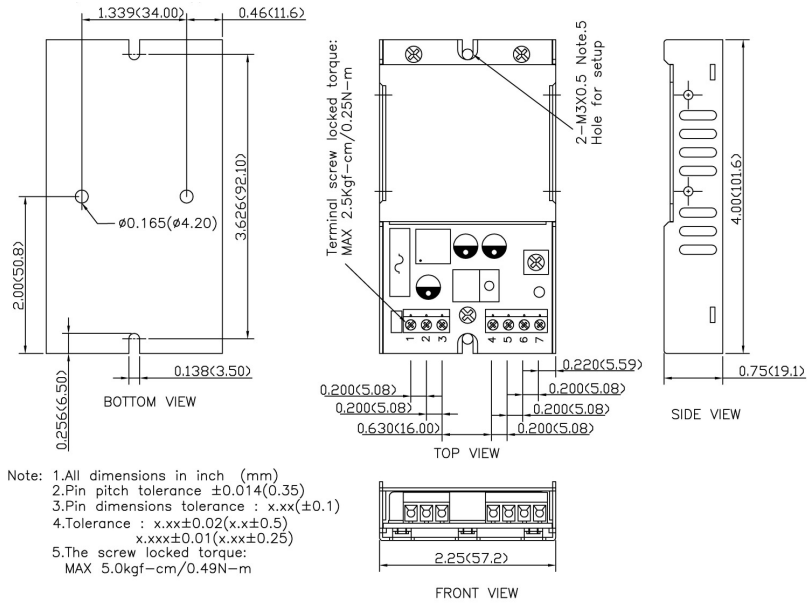
UFEC15-48S05W Efficiency VS Input Voltage



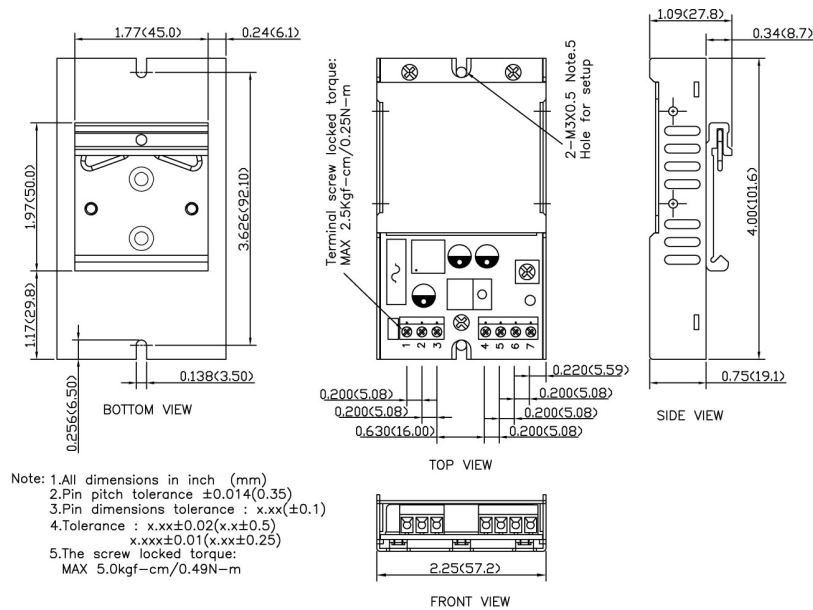
UFEC15-48S05W Efficiency VS Output Current



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

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

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