



UFEC40W SERIES

CHASSIS-MOUNT DC-DC CONVERTER

4:1 ULTRA WIDE INPUT RANGE
UP TO 40 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
UFEC40-24S3P3W	9.5 ~ 36	3.3	10	81	86	25750
UFEC40-24S05W	9.5 ~ 36	5	8	101	87	13600
UFEC40-24S12W	9.5 ~ 36	12	3.333	54	86	2360
UFEC40-24S15W	9.5 ~ 36	15	2.666	54	86	1510
UFEC40-24S24W	9.5 ~ 36	24	1.667	74	85	600
UFEC40-24S28W	9.5 ~ 36	28	1.333	80	85	375
UFEC40-24D12W	9.5 ~ 36	±12	±1.667	63	85	±1200
UFEC40-24D15W	9.5 ~ 36	±15	±1.333	74	85	±750
UFEC40-48S3P3W	18 ~ 75	3.3	10	61	86	25750
UFEC40-48S05W	18 ~ 75	5	8	66	88	13600
UFEC40-48S12W	18 ~ 75	12	3.333	32	86	2360
UFEC40-48S15W	18 ~ 75	15	2.666	32	87	1510
UFEC40-48S24W	18 ~ 75	24	1.667	39	85	600
UFEC40-48S28W	18 ~ 75	28	1.333	39	85	375
UFEC40-48D12W	18 ~ 75	±12	±1.667	32	85	±1200
UFEC40-48D15W	18 ~ 75	±15	±1.333	32	85	±750

PART NUMBER STRUCTURE

UFEC40 -	48	S	05	W -	N	EC
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Option	Assembly Option
	24: 9.5~36 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)		9.5	24	36	VDC
	48Vin(nom)		18	48	75	
Input fuse (slow blow)	24Vin(nom)			8		A
	48Vin(nom)			4		
In-rush current				15		A
Input reflected ripple current	Nominal input and Full load			15		mAp-p
Start up voltage	24Vin(nom)				9.5	VDC
	48Vin(nom)				18	
Shutdown voltage	24Vin(nom)			8		VDC
	48Vin(nom)			16		
Start up time	Constant resistive load	Power up		100		ms
		Remote ON/OFF		20		
Input surge voltage	100ms, max.	24Vin(nom)			50	VDC
		48Vin(nom)			100	
Remote ON/OFF	Referred to -Vin pin	Positive logic (Standard)	DC-DC ON	Open or 3 ~ 12VDC		mA
			DC-DC OFF	Short or 0 ~ 1.2VDC		
		Negative logic (Option)	DC-DC ON	Short or 0 ~ 1.2VDC		mA
			DC-DC OFF	Open or 3 ~ 12VDC		
		Input current of Ctrl pin		-0.5	0.5	
	Remote off input current	48Vin(nom)			10	
					5	

OUTPUT SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Voltage accuracy	3.3Vout		-1.5		+1.5	%
	Others		-1.0		+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		+1.5	%
			-1.0		+1.0	
Cross regulation	Asymmetrical load 25%/100% FL		-5.0		+5.0	%
Voltage adjustability	Single output		-3		+17	%
	Others		-10		+10	
Ripple and noise	Measured by 20MHz bandwidth	Single	3.3Vout, 5Vout, 12Vout, 15Vout, 24Vout, 28Vout	50		mVp-p
		Dual	All	75		
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		3.9		VDC
		5Vout		6.2		
		12Vout		15		
		15Vout		18		
		24Vout		30		
		28Vout		36		
Output indicator				Green LED		
Over load protection	% of lout rated				150	%
Short circuit protection				Continuous, automatic 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					4500	pF
Switching frequency			270	300	330	kHz
Safety meets						UL60950-1 EN60950-1 IEC60950-1
Chassis material						Aluminum
Weight						122g (4.29oz)
MTBF	MIL-HDBK-217F, Full load					6.080 x 10 ⁵ hrs

ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	Without derating With derating	-40 +55		+55 +85	°C
Over temperature protection	DC/DC Converter Case		110		°C
Storage temperature range		-40		+105	°C
Thermal shock					MIL-STD-810F
Vibration					MIL-STD-810F
Relative humidity					5% to 95% RH

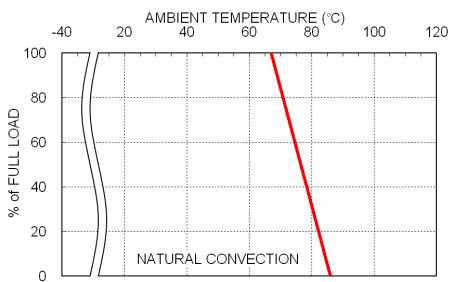
EMC SPECIFICATIONS

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

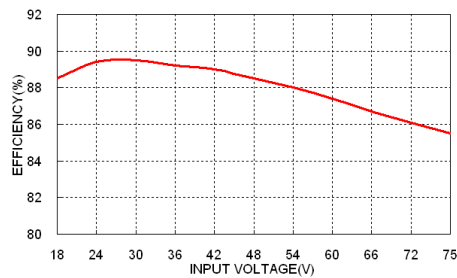
Note:

1. Test by minimum input and constant resistive load.

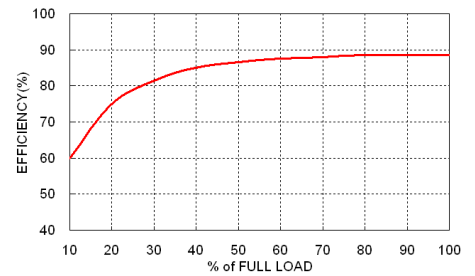
CHARACTERISTIC CURVE



UFEC40-48S05W Derating Curve

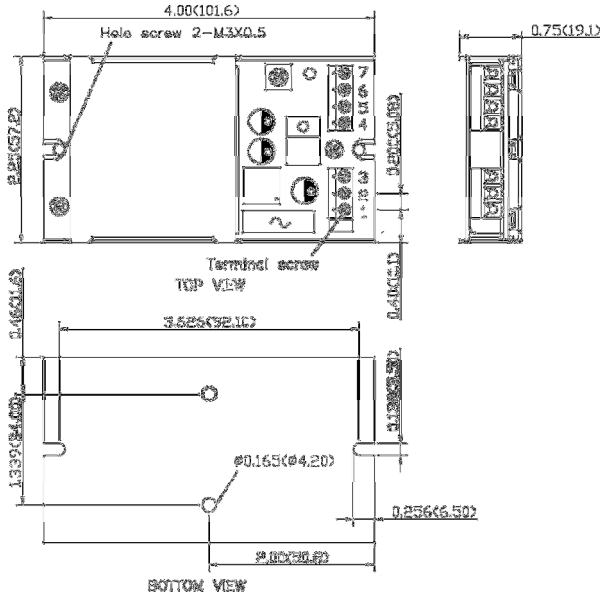


UFEC40-48S05W Efficiency vs. Input Voltage



UFEC40-48S05W Efficiency vs. Output Load

CHASSIS MOUNTING TYPE



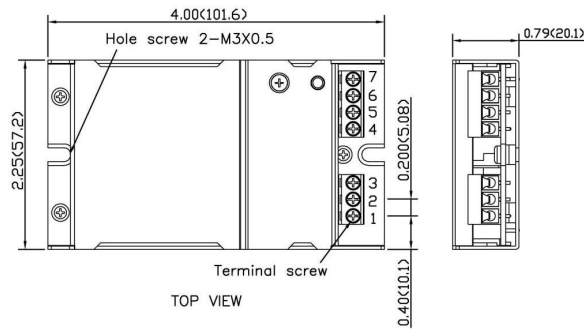
PIN CONNECTION

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

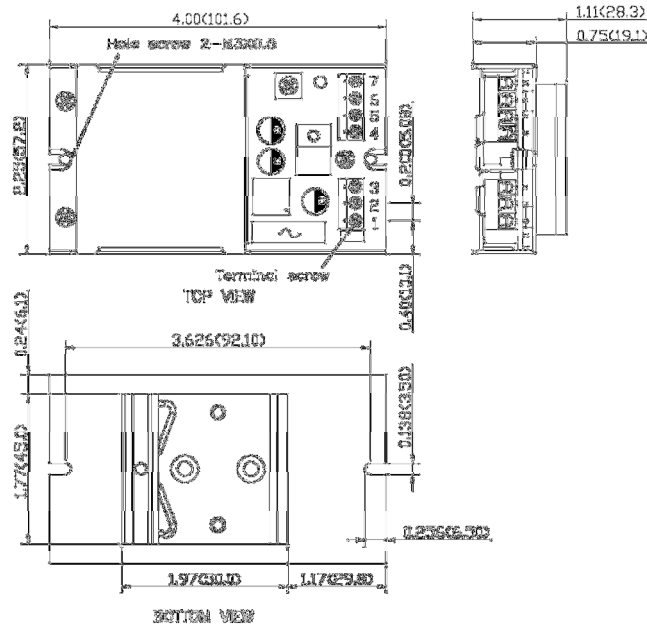
* NC : No Connection

* 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)