



Power Mate Technology, Inc UFED40W Series

Chassis-Mount DC-DC Converter
Up to 40 Watts

3
YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



Railway



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV

CE UK
CA

3000
VDC
Isolation
Voltage

1600
VDC
Isolation
Voltage

4 : 1
Wide
Input
Range

FUSE
Installed

INRUSH
CURRENT
LIMIT

LOW
Standby
Power

NO
Min. Load
Required

REMOTE
ON
OFF

REVERSE
POLARITY
PROTECTION

OCP

OTP

OVP

SCP

UVP

PART NUMBER STRUCTURE

UFED40 -	48	S	05	W -	N	R	EC
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Options	Conformal Coating Options	Assembly Options
	24:9.5~36 48:18~75 110:43~160	S:Single	3P3:3.3 05:5 12:12 15:15 24:24	4:1	□:Positive logic N:Negative logic	□: None R: Conformal Coating	□: None EC: Enclosed Mounting Type DR: Din Rail Mounting Type ED: Enclosed & Din Rail Mounting Type
		D:Dual	12:±12 15:±15 24:±24				

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

Model Number	Input Range	Output Voltage	Output Current @Full Load	Input Current @No Load	Efficiency	Maximum Capacitor Load
	VDC	VDC	mA	mA	%	μF
UFED40-24S3P3W	9.5 ~ 36	3.3	10000	19	89	26600
UFED40-24S05W	9.5 ~ 36	5	8000	19	90	20000
UFED40-24S12W	9.5 ~ 36	12	3333	19	91	3900
UFED40-24S15W	9.5 ~ 36	15	2666	19	91	2600
UFED40-24S24W	9.5 ~ 36	24	1666	19	90	1300
UFED40-24D12W	9.5 ~ 36	±12	±1666	19	89	±2600
UFED40-24D15W	9.5 ~ 36	±15	±1333	19	89	±1600
UFED40-24D24W	9.5 ~ 36	±24	±833	19	90	±650
UFED40-48S3P3W	18 ~ 75	3.3	10000	14	89	26600
UFED40-48S05W	18 ~ 75	5	8000	14	90	20000
UFED40-48S12W	18 ~ 75	12	3333	14	91	3900
UFED40-48S15W	18 ~ 75	15	2666	14	91	2600
UFED40-48S24W	18 ~ 75	24	1666	14	90	1300
UFED40-48D12W	18 ~ 75	±12	±1666	14	89	±2600
UFED40-48D15W	18 ~ 75	±15	±1333	14	89	±1600
UFED40-48D24W	18 ~ 75	±24	±833	14	90	±650
UFED40-110S3P3W	43 ~ 160	3.3	10000	10	87	26600
UFED40-110S05W	43 ~ 160	5	8000	10	88	20000
UFED40-110S12W	43 ~ 160	12	3333	10	89.5	3900
UFED40-110S15W	43 ~ 160	15	2666	10	90	2600
UFED40-110S24W	43 ~ 160	24	1666	10	89	1300
UFED40-110D12W	43 ~ 160	±12	±1666	10	88	±2600
UFED40-110D15W	43 ~ 160	±15	±1333	10	88	±1600
UFED40-110D24W	43 ~ 160	±24	±833	10	90	±650

INPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating input voltage range	24Vin(nom) 48Vin(nom) 110Vin(nom)	9.5 18 43	24 48 110	36 75 160	VDC
Input fuse	slow blow 24Vin(nom) 48Vin(nom) 110Vin(nom)		8 4 2		A
In-rush current			15		A
Start up voltage	24Vin(nom) 48Vin(nom) 110Vin(nom)			9.5 18 43	VDC
Shutdown voltage	24Vin(nom) 48Vin(nom) 110Vin(nom)	7 15 37	8 16 40	9 17.5 42	VDC
Start up time	Constant resistive load Power up Remote ON/OFF		100 60		ms
Input surge voltage	1 second, max. 24Vin(nom) 48Vin(nom) 110Vin(nom)			50 100 170	VDC
Remote ON/OFF	Referred to –Vin pin Positive logic (Standard) Negative logic (Option) Input current of Ctrl pin Remote off input current	DC-DC ON DC-DC OFF DC-DC ON DC-DC OFF -0.5	Open or 3 ~ 12VDC Short or 0 ~ 1.2VDC Short or 0 ~ 1.2VDC Open or 3 ~ 12VDC 5		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	-1.5 -1.0		+1.5 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL	-5.0		+5.0	%
Voltage adjustability	Single output	-10 -10		+10 +20	%
Ripple and noise	Measured by 20MHz bandwidth		75 100 150		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		3.9 6.2 15 20 30		VDC
Output indicator			Green LED		
Over load protection	% of Iout rated; Hiccup mode		150		%
Short circuit protection			Continuous, automatic recovery		

GENERAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Isolation voltage	1 minute 110Vin(nom) Input to Output Input (Output) to Chassis Others Input to Output Input (Output) to Chassis	3000 1600			VDC
Isolation resistance	500VDC	1			GΩ
Isolation capacitance			4000		pF
Switching frequency		225	250	275	kHz
Safety meets				IEC/ EN/ UL62368-1	
Standard approvals				EN50155 EN45545-2	
Chassis material				Aluminum	
Conformal coating				Impregnating varnish	
Weight				110g (3.88oz)	
MTBF	MIL-HDBK-217F, Full load			1.944 x 10 ⁶ hrs	

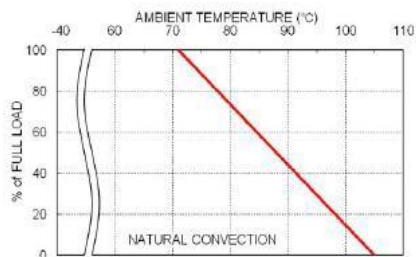
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	with derating	-40		+105	°C
Over temperature protection	Case of DC/DC module		115		°C
Storage temperature range		-40		+105	°C
Thermal shock				MIL-STD-810F	
Shock	□□S□□W -□ □□S□□W -□EC □□S□□W -□DR □□S□□W -□ED			EN61373, MIL-STD-810F EN61373, MIL-STD-810F EN61373, IEC60068-2-27 EN61373, IEC60068-2-27	
Vibration	□□S□□W -□ □□S□□W -□EC □□S□□W -□DR □□S□□W -□ED			EN61373, MIL-STD-810F EN61373, MIL-STD-810F EN61373, IEC60068-2-6 EN61373, IEC60068-2-6	
Relative humidity				5% to 95% RH	

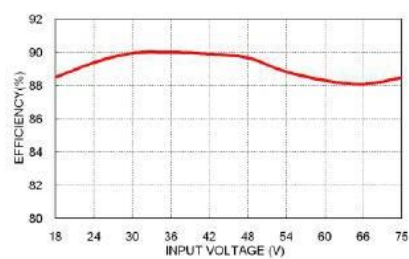
EMC SPECIFICATIONS

Parameter	Conditions		Level
EMI	EN55032, EN50121-3-2		Class B
EMS	EN55024, EN50121-3-2		
ESD	EN61000-4-2	Air $\pm 8\text{kV}$ and Contact $\pm 6\text{kV}$	Perf. Criteria A
Radiated immunity	EN61000-4-3	20V/m	Perf. Criteria A
Fast transient	EN61000-4-4	$\pm 2\text{kV}$	Perf. Criteria A
Surge	EN61000-4-5	EN55024 $\pm 1\text{kV}$ and EN50121-3-2 $\pm 2\text{kV}$	Perf. Criteria A
Conducted immunity	EN61000-4-6	10Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8	100A/m continuous; 1000A/m 1 second	Perf. Criteria A

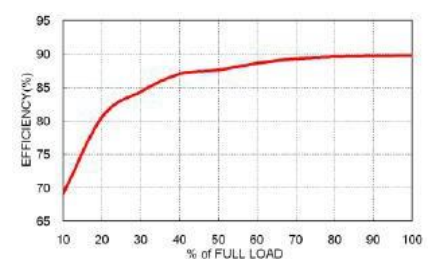
CHARACTERISTIC CURVE



UFED40-48S05W Derating Curve



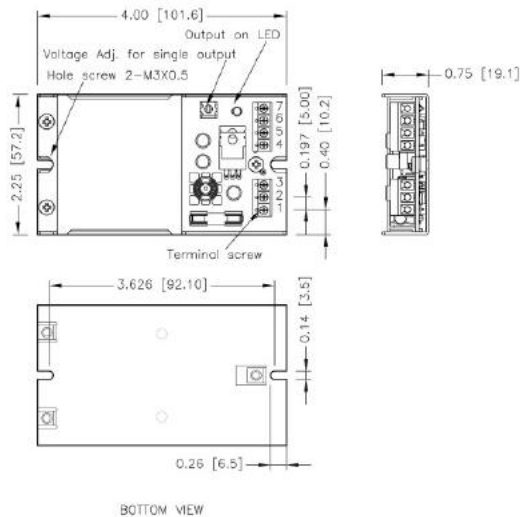
UFED40-48S05W Efficiency vs. Input Voltage



UFED40-48S05W Efficiency vs. Output Load

MECHANICAL DRAWING

CHASSIS MOUNTING TYPE



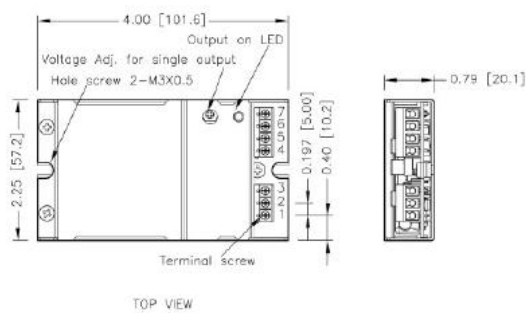
TERMINAL CONNECTION

NO.	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

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

ENCLOSED MOUNTING TYPE



DIN RAIL MOUNTING TYPE

