



Power Mate Technology, Inc DFEC40W Series

Din Rail DC-DC Converter
Up to 40 Watts

3
YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV



Railway

CE UK
CA

1600
VDC
Isolation
Voltage

4 : 1
Wide
Input
Range

FUSE
Installed

**INRUSH
CURRENT
LIMIT**

Internal
EN55032
Class **B**
Filter

**REMOTE
ON
OFF**

**REVERSE
POLARITY
PROTECTION**

OCP

OVP

SCP

UVP

PART NUMBER STRUCTURE

DFEC40 -	48	S	05	W -	N
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Options
	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
		D:Dual	12:±12 15:±15		

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	Min. Load mA	Full Load A	mA	%	μF
DFEC40-24S3P3W	9.5 ~ 36	3.3	0	10	83	85	25750
DFEC40-24S05W	9.5 ~ 36	5	0	8	103	86	13600
DFEC40-24S12W	9.5 ~ 36	12	0	3.33	56	85	2360
DFEC40-24S15W	9.5 ~ 36	15	0	2.67	56	85	1510
DFEC40-24S24W	9.5 ~ 36	24	0	1.67	76	84	600
DFEC40-24S28W	9.5 ~ 36	28	0	1.33	82	84	375
DFEC40-24D12W	9.5 ~ 36	±12	±65	±1.67	65	84	±1200
DFEC40-24D15W	9.5 ~ 36	±15	±50	±1.33	76	84	±750
DFEC40-48S3P3W	18 ~ 75	3.3	0	10	63	85	25750
DFEC40-48S05W	18 ~ 75	5	0	8	68	87	13600
DFEC40-48S12W	18 ~ 75	12	0	3.33	34	85	2360
DFEC40-48S15W	18 ~ 75	15	0	2.67	34	86	1510
DFEC40-48S24W	18 ~ 75	24	0	1.67	41	85	600
DFEC40-48S28W	18 ~ 75	28	0	1.33	41	84	375
DFEC40-48D12W	18 ~ 75	±12	±65	±1.67	34	85	±1200
DFEC40-48D15W	18 ~ 75	±15	±60	±1.33	34	84	±750

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		4	A
		48Vin(nom)				
In-rush current			15		A	
Start up voltage	24Vin(nom)				9.5	VDC
	48Vin(nom)				18	
Shutdown voltage	24Vin(nom)		7	8	9	VDC
	48Vin(nom)		15	16	17.5	
Start up time	Constant resistive load	Power up Remote ON/OFF	100 20		ms	
Input surge voltage	100ms, max.	24Vin(nom)			50	VDC
		48Vin(nom)			100	
Remote ON/OFF	Referred to –Vin pin	Positive logic DC-DC ON (Standard) DC-DC OFF Negative logic DC-DC ON (Option) DC-DC OFF			Open or 3 ~ 12VDC Short or 0 ~ 1.2VDC Short or 0 ~ 1.2VDC Open or 3 ~ 12VDC	mA
		Input current of Ctrl pin	-0.5	0.5		
Remote off input current		24Vin(nom)	10		mA	
		48Vin(nom)	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	Min. Load to Full Load			-2.0		+2.0	%
	Others			-1.5		+1.5	
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,		50	mVp-p	
			12Vout, 15Vout		75		
		Dual	24Vout, 28Vout		100		
			All		100		
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 Iout rated				150		%
Short circuit protection				Continuous, automatics recovery			

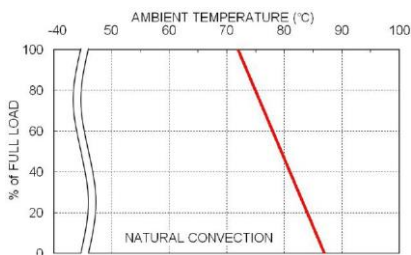
GENERAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output	1600			VDC
		Input (Output) to Chassis	1600			
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4500	pF
Switching frequency			270	300	330	kHz
Safety meets			IEC/ EN/ UL62368-1			
Chassis material			Aluminum			
Weight			182g (6.40oz)			
MTBF	MIL-HDBK-217F, Full load		7.632 x 10 ⁵ hrs			

ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions			Min.	Typ.	Max. Unit
Operating ambient temperature	Without derating			-40		+63 °C
	With derating			+63		+95 °C
Storage temperature range				-40		+105 °C
Thermal shock				MIL-STD-810F		
Vibration				IEC60068-2-6		
Relative humidity				5% to 95% RH		

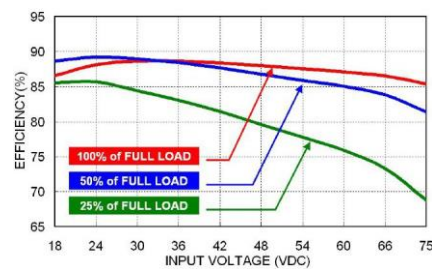
EMC SPECIFICATIONS

Parameter	Conditions		Level
EMI	EN55032		Class B
EMS	EN55024		
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
Power frequency magnetic field	EN61000-4-8	100A/m continuous; 1000A/m 1 second	Perf. Criteria A

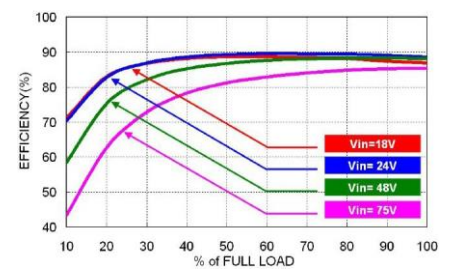
CHARACTERISTIC CURVE



DFEC40-48S05W Derating Curve

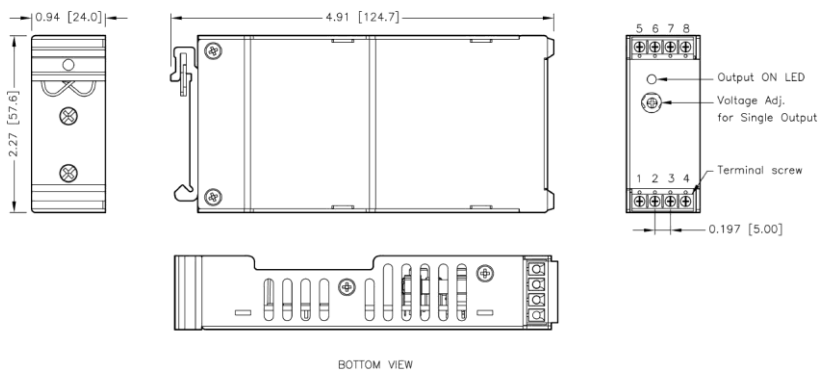


DFEC40-48S05W Efficiency vs. Input Voltage



DFEC40-48S05W Efficiency vs. Output Load

MECHANICAL DRAWING



TERMINAL CONNECTION

NO.	SINGLE	DUAL
1	Ctrl	Ctrl
2	-Vin	-Vin
3	-Vin	-Vin
4	+Vin	+Vin
5	NC	NC
6	-Vout	-Vout
7	+Vout	Common
8	NC	+Vout

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

1. All dimensions in Inch [mm]
2. Tolerance : X.XX $\pm$ 0.02 [X.X $\pm$ 0.5]
X.XXX $\pm$ 0.01 [X.XX $\pm$ 0.25]
3. Clamp screw locked torque:
MAX 5.0kgf-cm/0.49N-m
4. Terminal screw locked torque:
MAX 2.5kgf-cm/0.25N-m