



P-DUKE POWER

DFED20W Series

Din Rail DC-DC Converter
Up to 20 Watts

3
YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV



Railway

CB CE UK
CA

1600
VDC
Isolation
Voltage

4 : 1
Wide
Input
Range

FUSE
Installed

INRUSH
CURRENT
LIMIT

Internal
EN55032
Class **B**
Filter

NO
Min. Load
Required

REMOTE
ON
OFF

REVERSE
POLARITY
PROTECTION

OCP

OVP

SCP

UVP

PART NUMBER STRUCTURE

Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Options
DFED20 - 48	24 :9.5~36 48 :18~75	S :Single D :Dual	05 :3.3 05 :5 12 :12 15 :15 05 :±5 12 :±12 15 :±15	W - 4:1	N □:Positive logic N:Negative logic

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
DFED20-24S3P3W	9.5 ~ 36	3.3	5500	52	83	18000
DFED20-24S05W	9.5 ~ 36	5	4000	67	86	9600
DFED20-24S12W	9.5 ~ 36	12	1670	26	85	1650
DFED20-24S15W	9.5 ~ 36	15	1330	27	85	1050
DFED20-24D05W	9.5 ~ 36	±5	±2000	59	87	±4800
DFED20-24D12W	9.5 ~ 36	±12	±833	34	86	±825
DFED20-24D15W	9.5 ~ 36	±15	±667	35	86	±525
DFED20-48S3P3W	18 ~ 75	3.3	5500	37	83	18000
DFED20-48S05W	18 ~ 75	5	4000	37	86	9600
DFED20-48S12W	18 ~ 75	12	1670	18	85	1650
DFED20-48S15W	18 ~ 75	15	1330	18	85	1050
DFED20-48D05W	18 ~ 75	±5	±2000	37	87	±4800
DFED20-48D12W	18 ~ 75	±12	±833	20	86	±825
DFED20-48D15W	18 ~ 75	±15	±667	20	86	±525

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)		6		A
		48Vin(nom)		4		
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)		14.5	16	17.5	
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 DC-DC ON (Standard)		Open or 3 ~ 12VDC		
		Negative logic DC-DC ON (Option)		Short or 0 ~ 1.2VDC		
		DC-DC OFF		Short or 0 ~ 1.2VDC		
		DC-DC OFF		Open or 3 ~ 12VDC		
		Input current of Ctrl pin	-0.5		0.5	mA
		Remote off input current		2.5		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	Single Dual	-0.2 -0.5		+0.2 +0.5	%
Load regulation	No Load to Full Load		-1.5		+1.5	%
Cross regulation	Asymmetrical load 25%/100% FL	Dual	-5.0		+5.0	%
Voltage adjustability	Single output		-10		+10	%
Ripple and noise	Measured by 20MHz bandwidth	Single Dual		60 75 100		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	3.3Vout 5Vout 12Vout 15Vout		3.9 6.2 15 18		VDC
Output indicator				Green LED		
Over load protection	% of Iout rated			150		%
Short circuit protection				Continuous, automatic recovery		

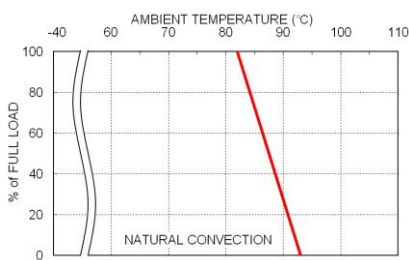
GENERAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output Input (Output) to Chassis	1600 1600			VDC
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4000	pF
Switching frequency			360	400	440	kHz
Safety approvals	IEC/ EN/ UL62368-1				UL:E193009 CB:UL(Demko)	
Chassis material					Aluminum	
Weight					147.5g (5.20oz)	
MTBF	MIL-HDBK-217F, Full load				1.619 x 10 ⁶ hrs	

ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature		Without derating With derating	-40 +78		+78 +99	°C
Storage temperature range			-40		+105	°C
Thermal shock					MIL-STD-810F	
Vibration					IEC60068-2-6	
Relative humidity					5% to 95% RH	

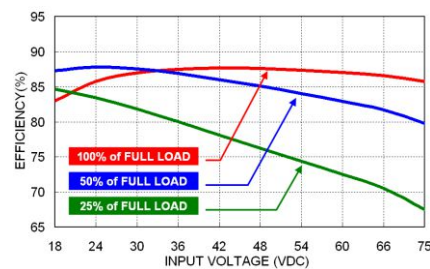
EMC SPECIFICATIONS

Parameter	Conditions		Level
EMI	EN55032		Class B
EMS	EN55035		
ESD	EN61000-4-2	Air \pm 8kV and Contact \pm 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast transient	EN61000-4-4	\pm 2kV	Perf. Criteria A
Surge	EN61000-4-5	\pm 0.5kV	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

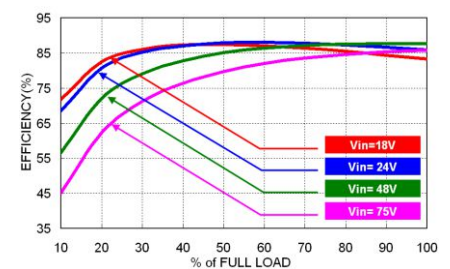
CHARACTERISTIC CURVE



DFED20-48S05W Derating Curve

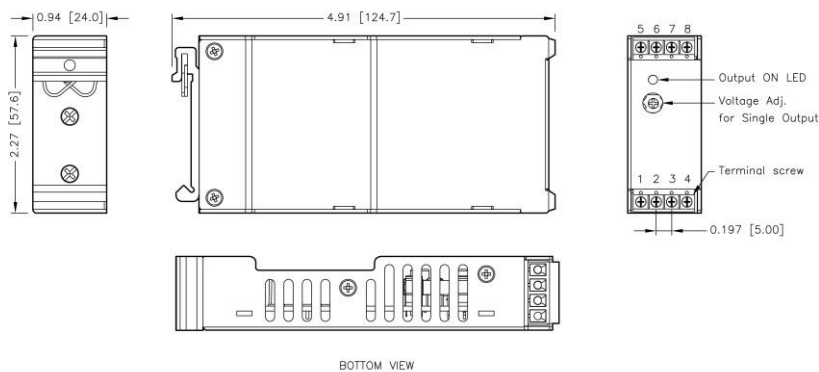


DFED20-48S05W Efficiency vs. Input Voltage



DFED20-48S05W 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