



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

CE CB

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

DFED20 -	48	S	05	W -	N
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Option
	24:9.5~36 48:18~75	S:Single	3P3:3.3 05:5 12:12 15:15	4:1	□:Positive logic N:Negative logic
		D:Dual	05:±5 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	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) 48Vin(nom)		9.5 18	24 48	36 75	VDC
Input fuse	slow blow	24Vin(nom) 48Vin(nom)		6 4		A
In-rush current				15		A
Start up voltage		24Vin(nom) 48Vin(nom)			9.5 18	VDC
Shutdown voltage		24Vin(nom) 48Vin(nom)	7 14.5	7.5 15	9 17.5	VDC
Start up time	Constant resistive load	Power up Remote ON/OFF		100 20		ms
Input surge voltage	100ms, max.	24Vin(nom) 48Vin(nom)			50 100	VDC
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 Input current of Ctrl pin Remote off input current	-0.5	Open or 3 ~ 12VDC Short or 0 ~ 1.2VDC Short or 0 ~ 1.2VDC Open or 3 ~ 12VDC 2.5	0.5	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	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/ UL/ EN60950-1				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	

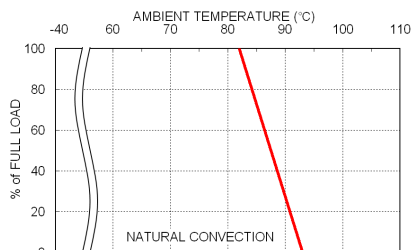
ENVIRONMENTAL SPECIFICATIONS

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	

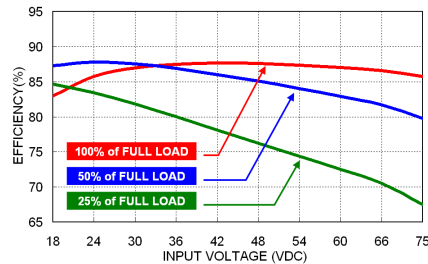
EMC SPECIFICATIONS

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

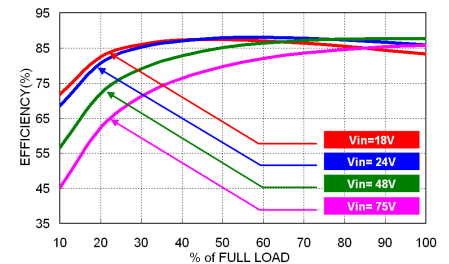
CHARACTERISTIC CURVE



DFED20-48S05W Derating Curve

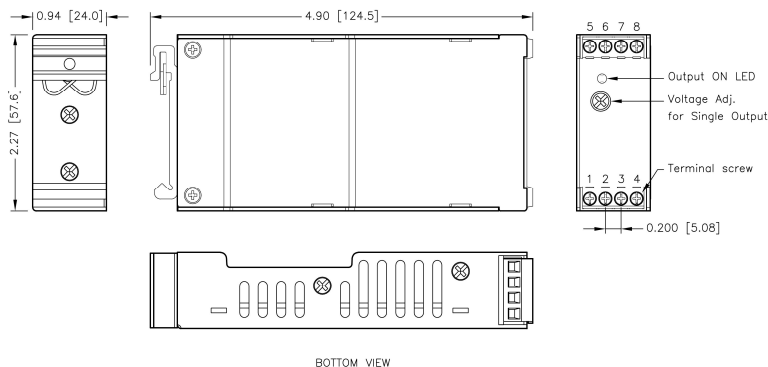


DFED20-48S05W Efficiency vs. Input Voltage



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

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