



P-DUKE POWER

DFEC15W Series

Din Rail DC-DC Converter
Up to 15 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

Internal
EN55032
Class
Filter **B**

INRUSH
CURRENT
LIMIT

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
DFEC15 - 48	48	S	05	W	P
	24:9.5~36 48:18~75	S:Single	3P3:3.3 05:5 5P1:5.1 12:12 15:15	4:1	□:NC P: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
DFEC15-24S3P3W	9.5 ~ 36	3.3	4500	52	84	14700
DFEC15-24S05W	9.5 ~ 36	5	3000	67	85	7200
DFEC15-24S5P1W	9.5 ~ 36	5.1	3000	67	85	7200
DFEC15-24S12W	9.5 ~ 36	12	1250	26	85	1250
DFEC15-24S15W	9.5 ~ 36	15	1000	26	85	800
DFEC15-24D05W	9.5 ~ 36	±5	±1500	57	85	±3600
DFEC15-24D12W	9.5 ~ 36	±12	±625	35	86	±625
DFEC15-24D15W	9.5 ~ 36	±15	±500	35	86	±400
DFEC15-48S3P3W	18 ~ 75	3.3	4500	37	84	14700
DFEC15-48S05W	18 ~ 75	5	3000	38	86	7200
DFEC15-48S5P1W	18 ~ 75	5.1	3000	38	86	7200
DFEC15-48S12W	18 ~ 75	12	1250	18	85	1250
DFEC15-48S15W	18 ~ 75	15	1000	18	85	800
DFEC15-48D05W	18 ~ 75	±5	±1500	37	86	±3600
DFEC15-48D12W	18 ~ 75	±12	±625	20	86	±625
DFEC15-48D15W	18 ~ 75	±15	±500	20	86	±400

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	7.5	9	VDC
	48Vin(nom)		14.5	16	17.5	
Start up time	Constant resistive load	Power up	100			ms
Input surge voltage	100ms, max.	24Vin(nom)	50			VDC
		48Vin(nom)	100			
Remote ON/OFF (Option)	Referred to -Vin pin	Positive logic	DC-DC ON	Open or 3 ~ 12VDC		
			DC-DC OFF	Short or 0 ~ 1.2VDC		
		Negative logic	DC-DC ON	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	-2.0 -1.2		+2.0 +1.2	%
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	3.3Vout Others	-2.0 -1.5		+2.0 +1.5	%
Cross regulation	Asymmetrical load 25%/100% FL	Dual	-5.0		+5.0	%
Ripple and noise	Measured by 20MHz bandwidth	Single Dual		50 75 75		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, 5.1Vout 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		

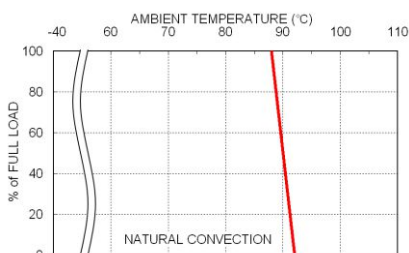
GENERAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output Input (Output) to Chassis	1600 1600			VDC
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4000	pF
Switching frequency			360	400	440	kHz
Safety approvals	IEC/ EN/ UL62368-1				UL:E193009 CB:UL(Demko)	
Chassis material					Aluminum	
Weight					147.5g (5.20oz)	
MTBF	MIL-HDBK-217F, Full load				1.681 x 10 ⁶ hrs	

ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature		without derating with derating	-40 +85		+85 +93	°C
Storage temperature range			-40		+105	°C
Thermal shock					MIL-STD-810F	
Vibration					IEC60068-2-6	
Relative humidity					5% to 95% RH	

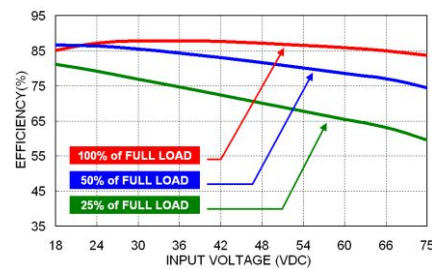
EMC SPECIFICATIONS

Parameter	Conditions	Level
EMI	EN55032	Class B
EMS	EN55035	
ESD	EN61000-4-2 Air ± 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 ± 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

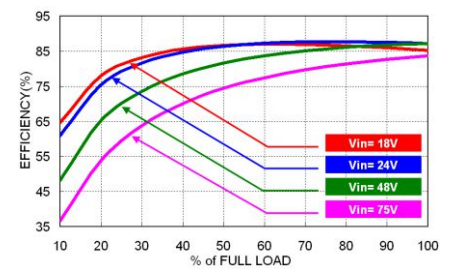
CHARACTERISTIC CURVE



DFEC15-48S05W Derating Curve

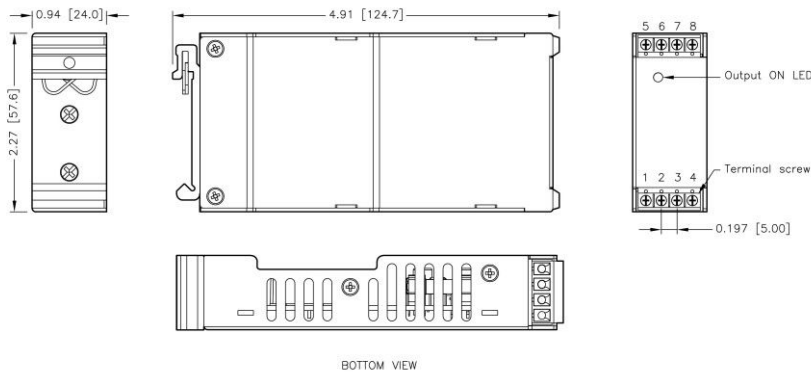


DFEC15-48S05W Efficiency vs. Input Voltage



DFEC15-48S05W Efficiency vs. Output Load

MECHANICAL DRAWING



TERMINAL CONNECTION

NO.	SINGLE	DUAL
1	Ctrl(Optional)	Ctrl(Optional)
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±0.02 [X.X±0.5]
X.XXX±0.01 [X.XX±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