



P-DUKE POWER

DFEC30W Series

Din Rail DC-DC Converter
Up to 30 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

DFEC30 -	48	S	05	W -	N
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Options
	24:10-40 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	A	mA	%	μF
DFEC30-24S3P3W	10 ~ 40	3.3	6	52	85	19500
DFEC30-24S05W	10 ~ 40	5	6	67	85	10200
DFEC30-24S12W	10 ~ 40	12	2.5	69	85	3300
DFEC30-24S15W	10 ~ 40	15	2	75	86	1100
DFEC30-24S24W	10 ~ 40	24	1.25	39	82	500
DFEC30-24S28W	10 ~ 40	28	1	45	83	340
DFEC30-24D12W	10 ~ 40	±12	±1.25	34	82	±1000
DFEC30-24D15W	10 ~ 40	±15	±1	40	83	±680
DFEC30-48S3P3W	18 ~ 75	3.3	6	32	85	19500
DFEC30-48S05W	18 ~ 75	5	6	32	86	10200
DFEC30-48S12W	18 ~ 75	12	2.5	38	85	3300
DFEC30-48S15W	18 ~ 75	15	2	48	86	1100
DFEC30-48S24W	18 ~ 75	24	1.25	30	83	500
DFEC30-48S28W	18 ~ 75	28	1	30	84	340
DFEC30-48D12W	18 ~ 75	±12	±1.25	28	83	±1000
DFEC30-48D15W	18 ~ 75	±15	±1	28	84	±680

INPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range	24Vin(nom)		10	24	40	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)		10			VDC
	48Vin(nom)		18			
Shutdown voltage	24Vin(nom)		7	8	9.5	VDC
	48Vin(nom)		15	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			mA
		Negative logic DC-DC ON (Option)	Short or 0 ~ 1.2VDC			
		DC-DC OFF	Short or 0 ~ 1.2VDC			mA
		DC-DC OFF	Open or 3 ~ 12VDC			
		Input current of Ctrl pin	-0.5	0.5		
		Remote off input current	3			

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		-2.0 -1.0		+2.0 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL		-5.0		+5.0	%
Voltage adjustability	Single output		-3 -10		+17 +10	%
Ripple and noise	Measured by 20MHz bandwidth	Single Dual		50 75 130 100		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 24Vout 28Vout		3.9 6.2 15 18 30 36		VDC
Output indicator			Green LED			
Over load protection	% of Iout rated			150		%
Short circuit protection			Continuous, automatic recovery			

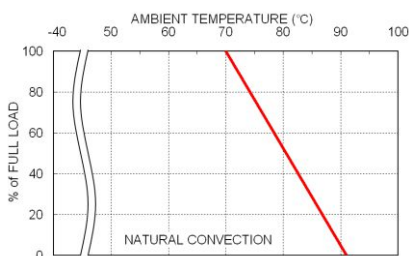
GENERAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output Input (Output) to Chassis	1600 1600			VDC
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4000	pF
Switching frequency			270	300	330	kHz
Safety approvals	IEC/ EN/ UL62368-1		UL:E193009 CB:UL(Demko)			
Chassis material			Aluminum			
Weight			170g (5.98oz)			
MTBF	MIL-HDBK-217F, Full load		8.412 x 10 ⁵ hrs			

ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature		Without derating With derating	-40 +63		+63 +94	°C
Storage temperature range			-40		+105	°C
Thermal shock			MIL-STD-810F			
Vibration			IEC60068-2-6			
Relative humidity			5% to 95% RH			

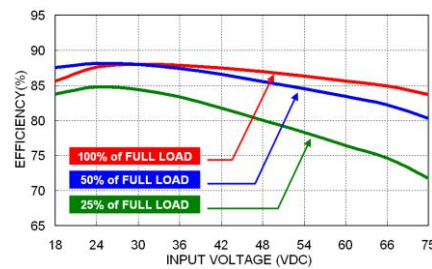
EMC SPECIFICATIONS

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 ± 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

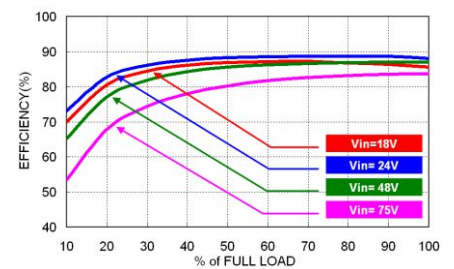
CHARACTERISTIC CURVE



DFEC30-48S05W Derating Curve

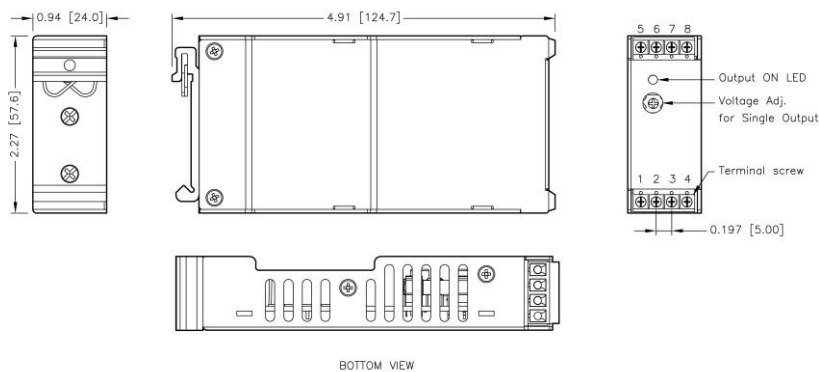


DFEC30-48S05W Efficiency vs. Input Voltage



DFEC30-48S05W 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±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