



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

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

DFEC30 -	48	S	05	W -	N
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Option
	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) 48Vin(nom)	10 18	24 48	40 75	VDC
Input fuse	slow blow		6 4		A
In-rush current			15		A
Start up voltage	24Vin(nom) 48Vin(nom)			10 18	VDC
Shutdown voltage	24Vin(nom) 48Vin(nom)	7.5 15.5	8 16	9.5 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 3	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			-0.5		+0.5	%
Load regulation	No Load to Full Load		3.3Vout Others	-2.0 -1.0		+2.0 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL		Dual	-5.0		+5.0	%
Voltage adjustability	Single output		28Vout Others	-3 -10		+17 +10	%
Ripple and noise	Measured by 20MHz bandwidth	Single	3.3Vout, 5Vout 12Vout, 15Vout 24Vout, 28Vout		50 75 130		mVp-p
		Dual	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 5Vout 12Vout 15Vout 24Vout 28Vout		3.9 6.2 15 18 30 36		VDC
Output indicator				Green LED			
Over load protection	% of lout 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					4000	pF
Switching frequency			270	300	330	kHz
Safety approvals	IEC/ UL/ EN60950-1				UL:E193009 CB:UL(Demko)	
Chassis material					Aluminum	
Weight					170g (5.98oz)	
MTBF	MIL-HDBK-217F, Full load				8.412 x 10 ⁵ hrs	

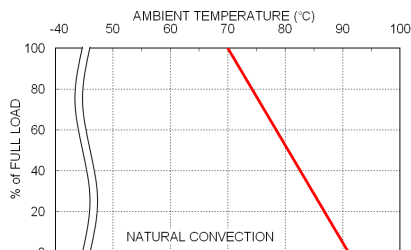
ENVIRONMENTAL SPECIFICATIONS

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

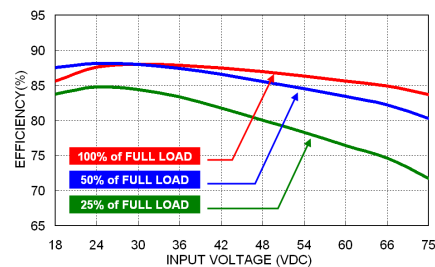
EMC SPECIFICATIONS

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 $\pm 1\text{kV}$	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

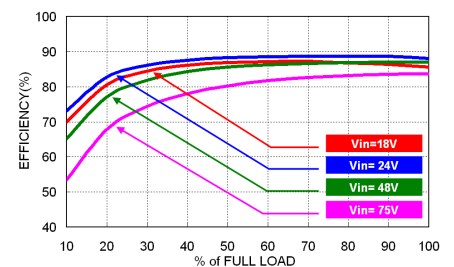
CHARACTERISTIC CURVE



DFEC30-48S05W Derating Curve

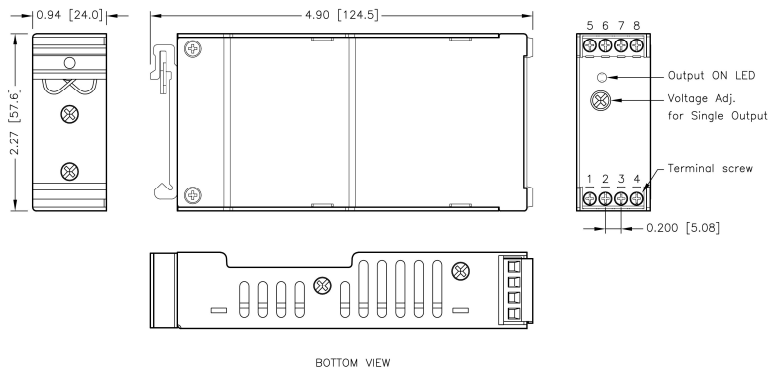


DFEC30-48S05W Efficiency vs. Input Voltage



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 $\pm$ 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