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℃ unless otherwise noted

Model Number	Input Range VDC	Output Voltage VDC	Output Current @Full Load A	Input Current @ No Load mA	Efficiency %	Maximum Capacitor Load 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	24Vin(nom) 48Vin(nom)		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 (Standard) DC-DC ON DC-DC OFF Negative logic (Option) DC-DC ON DC-DC OFF Input current of Ctrl pin Remote off input current		Open or 3 ~ 12VDC Short or 0 ~ 1.2VDC Short or 0 ~ 1.2VDC Open or 3 ~ 12VDC -0.5 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	%/℃
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, automatics 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/ 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

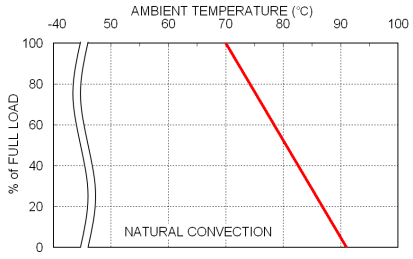
ENVIRONMENTAL SPECIFICATIONS

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

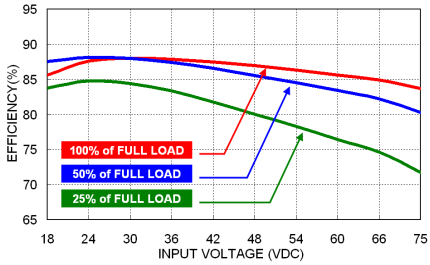
EMC SPECIFICATIONS

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

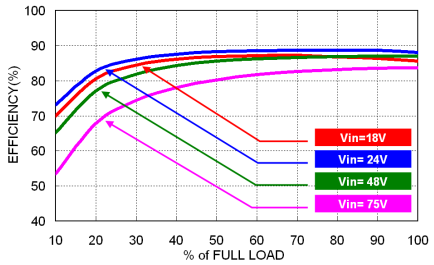
CHARACTERISTIC CURVE



DFEC30-48S05W Derating Curve

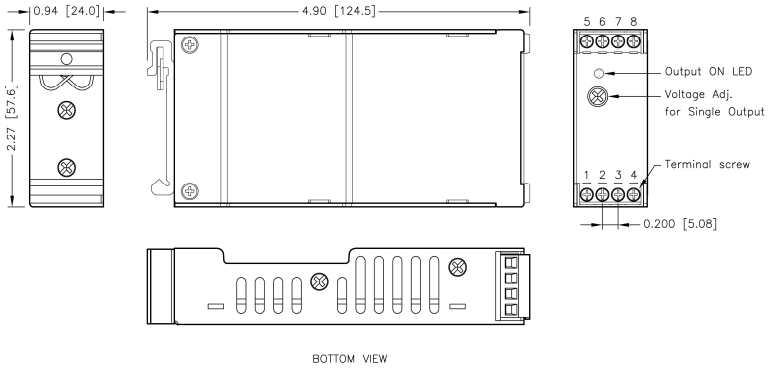


DFEC30-48S05W Efficiency vs. Input Voltage



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

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