

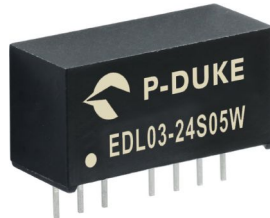


3

YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV



Railway



1600
VDC
Isolation
Voltage

4 : 1
Wide
Input
Range

NO
Min. Load
Required

REMOTE
ON
OFF

SCP

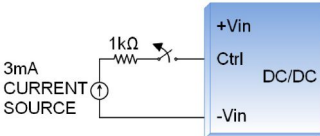
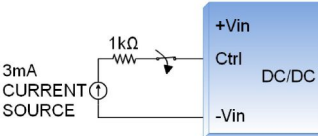
UVP

PART NUMBER STRUCTURE

EDL03 -	48	S	05	W
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range
	12:4.5~18 24:9~36 48:18~75	S:Single	3P3:3.3 05:5 09:9 12:12 15:15 24:24	4 : 1
		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
EDL03-12S3P3W	4.5 ~ 18	3.3	700	35	75	4400
EDL03-12S05W	4.5 ~ 18	5	600	40	79	2200
EDL03-12S09W	4.5 ~ 18	9	333	40	81	1300
EDL03-12S12W	4.5 ~ 18	12	250	40	82	1000
EDL03-12S15W	4.5 ~ 18	15	200	40	83	820
EDL03-12S24W	4.5 ~ 18	24	125	40	82	470
EDL03-12D05W	4.5 ~ 18	±5	±300	40	80	±1200
EDL03-12D12W	4.5 ~ 18	±12	±125	40	82	±520
EDL03-12D15W	4.5 ~ 18	±15	±100	50	81	±440
EDL03-24S3P3W	9 ~ 36	3.3	700	20	76	4400
EDL03-24S05W	9 ~ 36	5	600	20	80	2200
EDL03-24S09W	9 ~ 36	9	333	20	81	1300
EDL03-24S12W	9 ~ 36	12	250	25	83	1000
EDL03-24S15W	9 ~ 36	15	200	25	83	820
EDL03-24S24W	9 ~ 36	24	125	25	81	470
EDL03-24D05W	9 ~ 36	±5	±300	20	79	±1200
EDL03-24D12W	9 ~ 36	±12	±125	25	81	±520
EDL03-24D15W	9 ~ 36	±15	±100	25	81	±440
EDL03-48S3P3W	18 ~ 75	3.3	700	13	74	4400
EDL03-48S05W	18 ~ 75	5	600	13	80	2200
EDL03-48S09W	18 ~ 75	9	333	13	81	1300
EDL03-48S12W	18 ~ 75	12	250	13	82	1000
EDL03-48S15W	18 ~ 75	15	200	13	83	820
EDL03-48S24W	18 ~ 75	24	125	13	82	470
EDL03-48D05W	18 ~ 75	±5	±300	13	80	±1200
EDL03-48D12W	18 ~ 75	±12	±125	13	82	±520
EDL03-48D15W	18 ~ 75	±15	±100	13	82	±440

INPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range	12Vin(nom)		4.5	12	18	VDC
	24Vin(nom)		9	24	36	
	48Vin(nom)		18	48	75	
Start up voltage	12Vin(nom)				4.5	VDC
	24Vin(nom)				9	
	48Vin(nom)				18	
Shutdown voltage	12Vin(nom)		2	3	4	VDC
	24Vin(nom)		6	7	8	
	48Vin(nom)		13	15	17	
Start up time	Constant resistive load	Power up		10	20	ms
		Remote ON/OFF		10	20	
Input surge voltage	1 second, max.	12Vin(nom)			25	VDC
		24Vin(nom)			50	
		48Vin(nom)			100	
Input filter	Capacitor type					
Remote ON/OFF	Ctrl pin applied current via 1kΩ	DC-DC ON			Open or high impedance	
		DC-DC OFF	2	3	4	mA
		Remote off input current		2.5		mA
Application circuit						
DC-DC ON						
DC-DC OFF						

OUTPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Voltage accuracy			-1.0		+1.0	%
Line regulation	Low Line to High Line at Full Load		-0.2		+0.2	%
Load regulation	No Load to Full Load	Single	-1.0		+1.0	%
		Dual	-1.0		+1.0	
	10% Load to 90% Load	Single	-0.5		+0.5	
		Dual	-0.8		+0.8	
Cross regulation	Asymmetrical load 25%/100% FL		-5.0		+5.0	%
Ripple and noise	Measured by 20MHz bandwidth			75		mVp-p
Temperature coefficient			-0.02		+0.02	%/°C
Transient response recovery time	25% load step change			500		μs
Over current protection			130	170	230	%
Short circuit protection			Continuous, automatics recovery			

GENERAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output	1600			VDC
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					50	pF
Switching frequency	Full load to minimum load		100			kHz
Safety meets			IEC/ EN/ UL 62368-1			
Case material			Non-conductive black plastic			
Potting material			Silicone (UL94 V-0)			
Weight			4.5g (0.16oz)			
MTBF	MIL-HDBK-217F		5.124 x 10 ⁶ hrs			

ENVIRONMENTAL SPECIFICATIONS

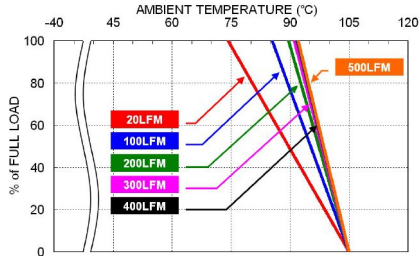
Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	With derating	-40		+105	°C
Maximum case temperature				105	°C
Storage temperature range		-55		+125	°C
Thermal shock				MIL-STD-810F	
Vibration				MIL-STD-810F	
Relative humidity				5% to 95% RH	

EMC SPECIFICATIONS

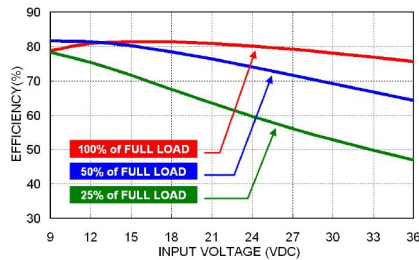
Parameter	Conditions	Level
EMI	EN55032 With external components	Class A · Class B
EMS	EN55035	
ESD	EN61000-4-2 Air ± 8kV and Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3 10 V/m	Perf. Criteria A
Fast transient	EN61000-4-4 ±2kV With an external input filter capacitor (Nippon Chemi-con KY series, 220µF/100V)	Perf. Criteria A
Surge	EN61000-4-5 ±1kV With an external input filter capacitor (Nippon Chemi-con KY series, 220µF/100V)	Perf. Criteria A
Conducted immunity	EN61000-4-6 10 Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8 100A/m continuous; 1000A/m 1 second	Perf. Criteria A

CAUTION: This power module is not internally fused. An input line fuse must always be used.

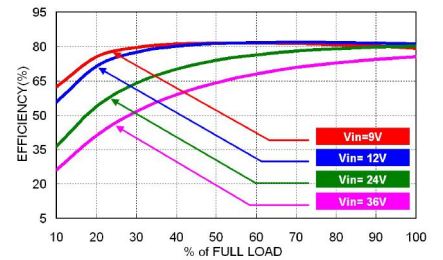
CHARACTERISTIC CURVE



EDL03-24S05W Derating Curve



EDL03-24S05W Efficiency vs. Input Voltage



EDL03-24S05W Efficiency vs. Output Load

FUSE CONSIDERATION

This power module is not internally fused. An input line fuse must always be used.

This encapsulated power module can be used in a wide variety of applications, ranging from simple stand-alone operation to an integrated part of sophisticated power architecture.

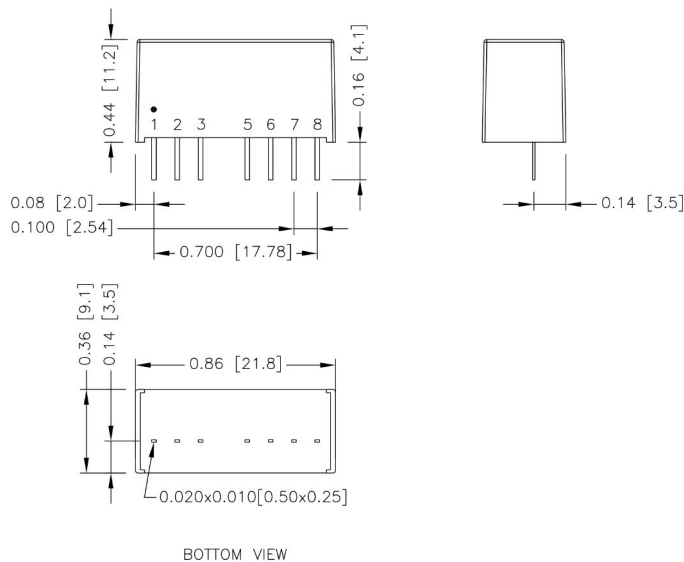
To maximum flexibility, internal fusing is not included; however, to achieve maximum safety and system protection, always use an input line fuse.

The input line fuse suggest as below :

Model	Fuse Rating (A)	Fuse Type
EDL03-12S□□W · EDL03-12D□□W	1.6	Slow-Blow
EDL03-24S□□W · EDL03-24D□□W	0.8	Slow-Blow
EDL03-48S□□W · EDL03-48D□□W	0.5	Slow-Blow

The table based on the information provided in this data sheet on inrush energy and maximum DC input current at low Vin.

MECHANICAL DRAWING

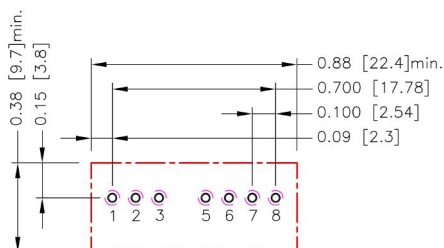


PIN CONNECTION

PIN	SINGLE	DUAL
1	-Vin	-Vin
2	+Vin	+Vin
3	Ctrl	Ctrl
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

- All dimensions in inch [mm]
- Tolerance : x.xx±0.02 [x.x±0.5]
x.xxx±0.01 [x.xx±0.25]
- Pin dimension tolerance ±0.004 [0.1]

RECOMMENDED PAD LAYOUT



All dimensions in inch(mm)
 Pad size(lead free recommended)
 Through hole 1.2.3.5.6.7.8: Φ0.031[0.80]
 Top view pad 1.2.3.5.6.7.8: Φ0.039[1.00]
 Bottom view pad 1.2.3.5.6.7.8: Φ0.063[1.60]

