



**POWER MATE
TECHNOLOGY CO.,LTD.**

PDL02-SERIES



UL193009

TUV R50066485

CB JPTUV-011477

CE MARK

- SINGLE AND DUAL OUTPUT
- SIP PACKAGE, 0.86 x 0.36x 0.44 INCH
- NO EXTERNAL INPUT AND OUTPUT CAPACITOR NEEDED
- 2:1 WIDE INPUT VOLTAGE RANGE
- LOW RIPPLE & NOISE
- UL94-V0 CASE POTTING MATERIALS
- INPUT TO OUTPUT ISOLATION UP TO 1KVdc
- CONTINUOUS SHORT CIRCUIT PROTECTION
- EXTERNAL ON/OFF CONTROL

The PDL02 series offer 2 watts of output power from a 21.8 x 9.2 x 11.1 mm package without derating to 85°C and without external input/output capacitors. The PDL02 series have 2:1 wide input voltage of 4.5-9, 9-18, 18-36 and 36-75VDC and features 1000VDC of isolation, short-circuit protection. All models are particularly suited to telecommunications, industrial, mobile telecom and test equipment applications.

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25°C otherwise noted

OUTPUT SPECIFICATIONS			
Output power		2 Watts max	
Voltage accuracy	Full load and nominal Vin		± 1%
Minimum load (Note 1)			10% of FL
Line regulation	LL to HL at Full Load		± 0.5%
Load regulation	25% to 100% FL	Single	± 0.75%
		Dual	± 1%
Cross regulation (Dual) Asymmetrical load 25%/100% FL			±5%
Ripple and noise	20MHz bandwidth		50mVp-p
Temperature coefficient			±0.1% / °C, max
Transient response recovery time 25% load step change			500uS typ
Short circuit protection		Continuous, automatics recovery	
INPUT SPECIFICATIONS			
Input voltage range	5V nominal input		4.5 – 9VDC
	12V nominal input		9 – 18VDC
	24V nominal input		18 – 36VDC
	48V nominal input		36 – 75VDC
Input filter			Capacitor type
Input voltage variation	dv/dt	5V/ms,max (Complies)	
Input surge voltage 100mS max	5V input		15VDC
	12V input		36VDC
	24V input		50VDC
	48V input		100VDC
Input reflected ripple There is an external capacitor at input (Note 2)	5V input (100uF)		400mA-p max
	12V input (100uF)		150mA-p max
	24V input (10uF)		380mA-p max
	48V input (10uF)		170mA-p max
Start up time	Nominal Vin and constant resistive load	Power up	1mS typ
		Remote ON/OFF	1mS typ
Remote ON/OFF	DC-DC ON	Open or high impedance	
	DC-DC OFF	Control pin applied current 4 ~ 8mA max(via 1KΩ)	
Remote off input current	Nominal input		1mA max
Application circuit			
DC-DC ON +Input 6mA current Source -Input Ctrl DC-DC OFF +Input 6mA current Source -Input Ctrl			

GENERAL SPECIFICATIONS		
Efficiency		See table
Isolation voltage		1000VDC, min
Isolation resistance		10 ⁹ ohms, min
Isolation capacitance		300pF, max
Switching frequency	Full load to minimum load	100KHz,min
Approvals and standard		IEC60950-1, UL60950-1, EN60950-1
Case material		Non-conductive black plastic
Base material		None
Potting material		Silicon (UL94-V0)
Dimensions		0.86 X 0.36 X 0.44 Inch (21.8 X 9.2 X 11.1 mm)
Weight		4.8g (0.17oz)
MTBF (Note 3)		5.107 x 10 ⁶ hrs
ENVIRONMENTAL SPECIFICATIONS		
Operating temperature range		-40°C to +85°C
Storage temperature range		-55°C to +105°C
Thermal shock		MIL-STD-810D
Vibration		10~55Hz, 10G, 30minutes along X,Y and Z
Relative humidity		5% to 95% RH
EMC CHARACTERISTICS		
Meet EN55022 classes B recommend circuit with external L-C filter at input (Note 4)	5V input	100uF & 10uH
	12V input	100uF & 10uH
	24V input	10uF & 120uH
	48V input	10uF & 120uH
EMC external circuit		



Model Number	Input Range	Output Voltage	Output Current		Input ⁽⁵⁾ Current	Eff ⁽⁶⁾ (%)	Capacitor ⁽⁷⁾ Load max
			Min Load	Full Load			
PDL02-05S33	4.5 – 9 VDC	3.3 VDC	50mA	500mA	540mA	65	2200uF
PDL02-05S05	4.5 – 9 VDC	5 VDC	40mA	400mA	615mA	69	1000uF
PDL02-05S09	4.5 – 9 VDC	9 VDC	22mA	222mA	596mA	71	470uF
PDL02-05S12	4.5 – 9 VDC	12 VDC	17mA	167mA	588mA	72	170uF
PDL02-05S15	4.5 – 9 VDC	15 VDC	13mA	134mA	582mA	73	110uF
PDL02-05D05	4.5 – 9 VDC	±5 VDC	±20mA	±200mA	645mA	66	±470uF
PDL02-05D12	4.5 – 9 VDC	±12 VDC	±8mA	±83mA	595mA	71	±100uF
PDL02-05D15	4.5 – 9 VDC	±15 VDC	±7mA	±67mA	598mA	71	±47uF
PDL02-12S33	9 – 18 VDC	3.3 VDC	50mA	500mA	202mA	72	2200uF
PDL02-12S05	9 – 18 VDC	5 VDC	40mA	400mA	234mA	75	1000uF
PDL02-12S09	9 – 18 VDC	9 VDC	22mA	222mA	222mA	79	470uF
PDL02-12S12	9 – 18 VDC	12 VDC	17mA	167mA	219mA	80	170uF
PDL02-12S15	9 – 18 VDC	15 VDC	13mA	134mA	220mA	80	110uF
PDL02-12D05	9 – 18 VDC	±5 VDC	±20mA	±200mA	242mA	73	±470uF
PDL02-12D12	9 – 18 VDC	±12 VDC	±8mA	±83mA	224mA	78	±100uF
PDL02-12D15	9 – 18 VDC	±15 VDC	±7mA	±67mA	226mA	78	±47uF
PDL02-24S33	18 – 36 VDC	3.3 VDC	50mA	500mA	102mA	71	2200uF
PDL02-24S05	18 – 36 VDC	5 VDC	40mA	400mA	115mA	76	1000uF
PDL02-24S09	18 – 36 VDC	9 VDC	22mA	222mA	109mA	80	470uF
PDL02-24S12	18 – 36 VDC	12 VDC	17mA	167mA	109mA	80	170uF
PDL02-24S15	18 – 36 VDC	15 VDC	13mA	134mA	108mA	81	110uF
PDL02-24D05	18 – 36 VDC	±5 VDC	±20mA	±200mA	117mA	75	±470uF
PDL02-24D12	18 – 36 VDC	±12 VDC	±8mA	±83mA	112mA	78	±100uF
PDL02-24D15	18 – 36 VDC	±15 VDC	±7mA	±67mA	110mA	80	±47uF
PDL02-48S33	36 – 75 VDC	3.3 VDC	50mA	500mA	52mA	70	2200uF
PDL02-48S05	36 – 75 VDC	5 VDC	40mA	400mA	60mA	74	1000uF
PDL02-48S09	36 – 75 VDC	9 VDC	22mA	222mA	56mA	78	470uF
PDL02-48S12	36 – 75 VDC	12 VDC	17mA	167mA	55mA	80	170uF
PDL02-48S15	36 – 75 VDC	15 VDC	13mA	134mA	55mA	79	110uF
PDL02-48D05	36 – 75 VDC	±5 VDC	±20mA	±200mA	62mA	75	±470uF
PDL02-48D12	36 – 75 VDC	±12 VDC	±8mA	±83mA	57mA	77	±100uF
PDL02-48D15	36 – 75 VDC	±15 VDC	±7mA	±67mA	57mA	77	±47uF

Note 1.The PDL02 series required a minimum 10% loading at the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however they may not meet all listed specification.

2.It will not damage the device without inserting external input capacitors. There is a smaller reflected ripple current when put a capacitor at input. The capacitor recommended use "CHEMICON" LXZ series or equivalent for 05 & 12Vin.

Use "CHEMICON" KMF series or equivalent for 24 & 48Vin.

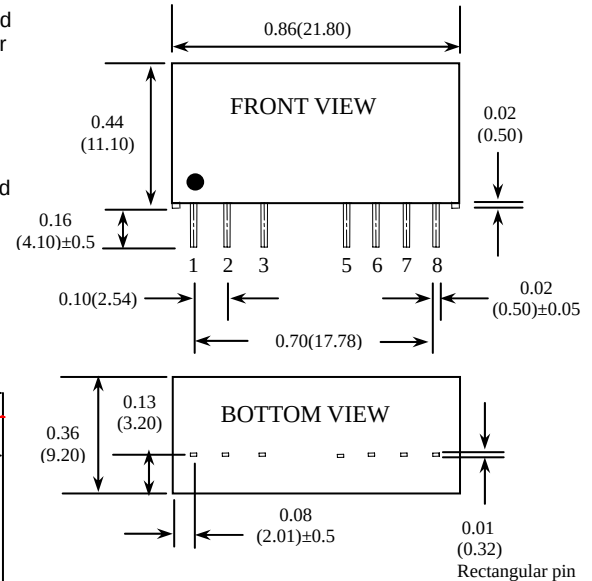
3.BELLCORE TR-NWT-000332. Case: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment).

4.The PDL02 series meet EN55022 class A with a filter at input. The filter capacitor recommended is same as note2.

5.Maximum value at nominal input voltage and full load.

6.Typical value at nominal input voltage and full load.

7.Test by minimum Vin and constant resistive load.



ALL DIMENSIONS IN INCHES(mm)

TOLERANCE:X.XX±0.02(X.X±0.5)

X.XXX±0.01(X.XX±0.25)

PIN PITCH TOLERANCE ±0.02(0.5)

PIN CONNECTION		
PIN	SINGLE	DUAL OUTPUT
1	- INPUT	- INPUT
2	+ INPUT	+ INPUT
3	CTRL	CTRL
5	NC	NC
6	+ OUTPUT	+ OUTPUT
7	- OUTPUT	COM
8	NC	- OUTPUT

