



- 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 1KV
- 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 capacitor. The PDL02 series with 2:1 wide input voltage of 4.5-9, 9-18, 18-36 and 36-75VDC and features 1000VDC of isolation, short-circuit. The safety meets to EN60950 and UL60950. 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	± 2%
Minimum load (Note 1)		25% of FL
Line regulation	LL to HL at Full Load	± 0.5%
Load regulation	25% to 100% FL	± 0.75%
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, automatic 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 surge voltage 100mS max	5V input	15VDC
	12V input	36VDC
	24V input	50VDC
	48V input	100VDC
Reflected ripple current There is an external capacitor at input (Note 2)	5V input (100uF)	400mA _{p-p} max
	12V input (100uF)	150mA _{p-p} max
	24V input (10uF)	380mA _{p-p} max
	48V input (10uF)	170mA _{p-p} max
Start up time	Nominal Vin and constant resistor load	1mS typ
Remote ON/OFF		
	DC-DC ON	Open or high impedance
	DC-DC OFF	Control pin applied current 3 ~ 6mA max(via 1KΩ)
Remote off input current	Nominal input	1mA max
Application circuit		

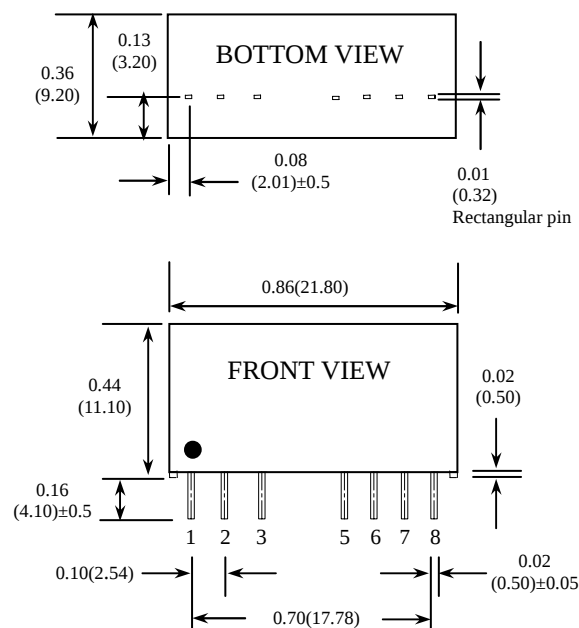
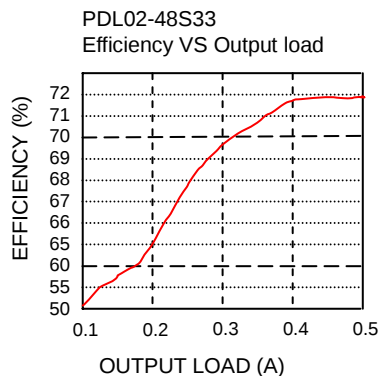
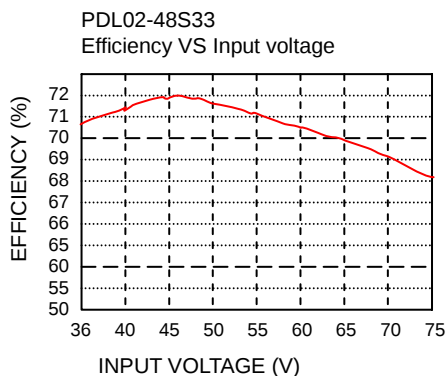
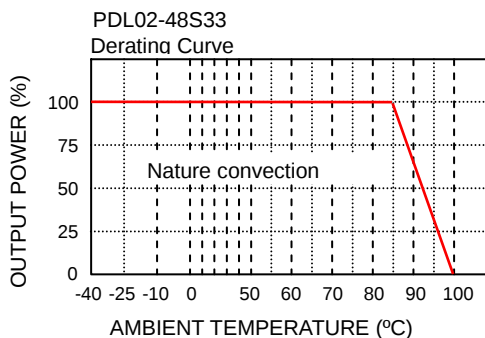
GENERAL SPECIFICATIONS		
Efficiency		See table
Isolation voltage		1000VDC, min
Isolation resistance		10 ⁹ ohms, min
Isolation capacitance		300pF, max
Safety standard pending		IEC60950, UL60950, EN60950
Switching frequency	Full load to minimum load	100 to 650KHz
Case material		Non-conductive black plastic
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
Cooling		Nature convection
Thermal shock		MIL-STD-810D
Vibration		10~55Hz, 2G, 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 Current ⁽⁵⁾	Eff ⁽⁶⁾ (%)	Capacitor ⁽⁷⁾ Load max
			Min Load	Full Load			
PDL02-05S33	4.5 – 9 VDC	3.3 VDC	125mA	500mA	540mA	65	2200uF
PDL02-05S05	4.5 – 9 VDC	5 VDC	100mA	400mA	645mA	66	1000uF
PDL02-05S09	4.5 – 9 VDC	9 VDC	55mA	222mA	596mA	71	470uF
PDL02-05S12	4.5 – 9 VDC	12 VDC	42mA	167mA	598mA	71	170uF
PDL02-05S15	4.5 – 9 VDC	15 VDC	33mA	134mA	582mA	73	110uF
PDL02-12S33	9 – 18 VDC	3.3 VDC	125mA	500mA	208mA	70	2200uF
PDL02-12S05	9 – 18 VDC	5 VDC	100mA	400mA	234mA	75	1000uF
PDL02-12S09	9 – 18 VDC	9 VDC	55mA	222mA	222mA	79	470uF
PDL02-12S12	9 – 18 VDC	12 VDC	42mA	167mA	219mA	80	170uF
PDL02-12S15	9 – 18 VDC	15 VDC	33mA	134mA	220mA	80	110uF
PDL02-24S33	18 – 36 VDC	3.3 VDC	125mA	500mA	102mA	71	2200uF
PDL02-24S05	18 – 36 VDC	5 VDC	100mA	400mA	115mA	76	1000uF
PDL02-24S19	18 – 36 VDC	9 VDC	55mA	222mA	109mA	80	470uF
PDL02-24S12	18 – 36 VDC	12 VDC	42mA	167mA	109mA	80	170uF
PDL02-24S15	18 – 36 VDC	15 VDC	33mA	134mA	108mA	81	110uF
PDL02-48S33	36 – 75 VDC	3.3 VDC	125mA	500mA	52mA	70	2200uF
PDL02-48S05	36 – 75 VDC	5 VDC	100mA	400mA	60mA	73	1000uF
PDL02-48S09	36 – 75 VDC	9 VDC	55mA	222mA	56mA	78	470uF
PDL02-48S12	36 – 75 VDC	12 VDC	42mA	167mA	55mA	79	170uF
PDL02-48S15	36 – 75 VDC	15 VDC	33mA	134mA	55mA	79	110uF

Note

1. The PDL02 series required a minimum 25% loading on 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 is no damage on the device without external input capacitor. There is 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 I: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment).
4. The PDL02 series cannot meet EN55022 classes A if there is no 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 resistor load.



1. ALL DIMENSIONS IN INCHES(mm)
2. PIN PITCH TOLERANCE +0.02(0.5)

PIN CONNECTION	
PIN	DEFINE
1	- INPUT
2	+ INPUT
3	CTRL
5	NC
6	+ OUTPUT
7	- OUTPUT
8	NC