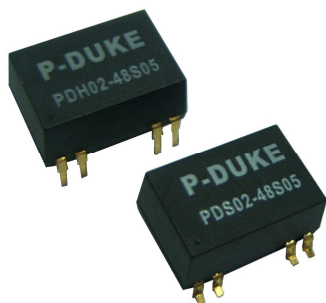




FEATURES

- 2 WATTS MAXIMUM OUTPUT POWER
- SMD AND DIP PACKAGE, 0.74 x 0.50 x 0.33 INCH
- SMD PACKAGE QUALIFIED FOR LEADFREE REFLOW SOLDER PROCESS ACCORDING IPC J-STD-020D
- 2:1 WIDE INPUT VOLTAGE RANGE
- HIGH EFFICIENCY UP TO 84%
- 1600VDC INPUT TO OUTPUT ISOLATION AND 3000VDC FOR OPTION
- LOW RIPPLE & NOISE
- EXTERNAL ON/OFF CONTROL
- SWITCHING FREQUENCY (100kHz, MIN)
- CONTINUOUS SHORT CIRCUIT PROTECTION
- UL94-V0 PACKAGE MATERIALS
- CE MARK MEETS 2006/95/EC, 2011/95/EC AND 2004/108/EC
- SAFETY MEETS UL60950-1, EN60950-1 AND IEC60950-1
- COMPLIANT TO RoHS EU DIRECTIVE 2011/65/EU

APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Measurement Equipment
Semiconductor Equipment

OPTIONS

3000VDC ISOLATION

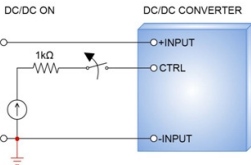
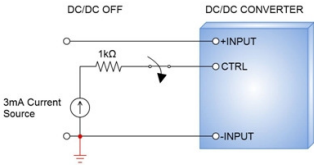
DESCRIPTION

The PDS02(SMD type), PDH02(DIP type) offer 2 watts of output power from a 0.74 x 0.50 x 0.33 inch package without derating to 85°C. The PDS(H)02 series have 2:1 wide input voltage of 4.5~9, 9~18, 18~36 and 36~75VDC and features 3000VDC of isolation, short-circuit protection.

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		± 1%		
Minimum load		0%		
Line regulation	LL to HL at Full Load		± 0.2%	
Load regulation	No load to Full load		Single	±1.0%
			Dual	±1.0%
	10% load to 90% load		Single	±0.5%
			Dual	±0.8%
Cross regulation (Dual)	Asymmetrical load 25%/100% FL		±5%	
Ripple and noise	20MHz bandwidth		See table	
Temperature coefficient		±0.02% / °C, max.		
Transient response recovery time		25% load step change	250µs	
Short circuit protection		Continuous, automatics recovery		
GENERAL SPECIFICATIONS				
Efficiency		See table		
Isolation voltage		Standard	1600VDC, min.1 minute	
		Suffix "H"	3000VDC, min.1 minute	
Isolation resistance	500VDC	10 ⁹ ohms, min.		
Isolation capacitance		Standard	50pF, max.	
		Suffix "H"	50pF, max.	
Switching frequency		100kHz, min.		
Design meets safety standard		IEC60950-1, UL60950-1, EN60950-1		
Dimensions		0.74 x 0.50 x 0.33 Inch (18.9 X 12.8 X 8.4 mm)		
Weight		4.5g(0.16oz)		
MTBF(Note 1)	BELLCORE TR-NWT-000332		5.107 x 10 ⁶ hrs	
	MIL-HDBK-217F		2.886 x 10 ⁶ hrs	
EMC CHARACTERISTICS				
EMI (Note 6)	EN55022		Class A, Class B	
ESD	EN61000-4-2	Air Contact	± 8kV ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3		10 V/m	Perf. Criteria A
Fast transient (Note 7)	EN61000-4-4		± 2kV	Perf. Criteria A
Surge (Note 7)	EN61000-4-5		± 1kV	Perf. Criteria A
Conducted immunity	EN61000-4-6		10 Vr.m.s	Perf. Criteria A

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	5V input	15VDC	1sec, max.
	12V input	25VDC	1sec, max.
	24V input	50VDC	1sec, max.
	48V input	100VDC	1sec, max.
Input reflected ripple current(Note 6)	5V input	80mA-p-p	
	12V input	40mA-p-p	
	24V input	30mA-p-p	
	48V input	20mA-p-p	
Start up time	Nominal input and constant resistive load	Power up	5ms
		Remote ON/OFF	5ms
Remote ON/OFF	DC-DC ON	Open or high impedance	
	DC-DC OFF	Control pin applied current 2 ~ 4mA max(via 1KΩ)	
Remote off state input current	Nominal input	2.5mA, max.	
Application circuit:			
DC/DC ON  DC/DC OFF 			
ENVIRONMENTAL SPECIFICATIONS			
Operating ambient temperature	-40°C ~ +85°C (non-derating)		
Storage temperature range	-55°C ~ +125°C		
Thermal shock	MIL-STD-810F		
Vibration	MIL-STD-810F		
Relative humidity(non-condensing)	5% to 90% RH		
Lead-free reflow solder process	IPC J-STD-020D		
Moisture sensitivity level(MSL)	IPC J-STD-033B		
	Level 2a		



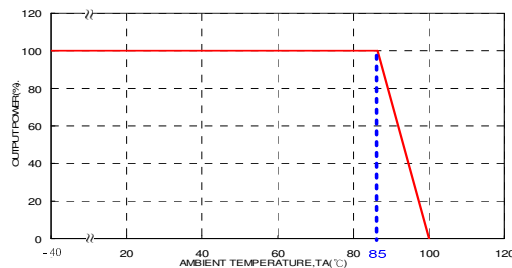
Model Number	Input Range	Output Voltage	Output Current		Output ⁽²⁾ Ripple & Noise	No load ⁽³⁾ Input Current	Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max.
			Min. load	Full load				
PDS(H)02-05S3P3	4.5 ~ 9 VDC	3.3 VDC	0mA	500mA	30mVp-p	35mA	74	3300μF
PDS(H)02-05S05	4.5 ~ 9 VDC	5 VDC	0mA	400mA	30mVp-p	35mA	80	1680μF
PDS(H)02-05S09	4.5 ~ 9 VDC	9 VDC	0mA	222mA	30mVp-p	35mA	79	1000μF
PDS(H)02-05S12	4.5 ~ 9 VDC	12 VDC	0mA	167mA	30mVp-p	35mA	81	820μF
PDS(H)02-05S15	4.5 ~ 9 VDC	15 VDC	0mA	134mA	30mVp-p	40mA	83	680μF
PDS(H)02-05D05	4.5 ~ 9 VDC	±5 VDC	0mA	±200mA	30mVp-p	40mA	78	±1000μF
PDS(H)02-05D12	4.5 ~ 9 VDC	±12 VDC	0mA	±83mA	30mVp-p	40mA	81	±470μF
PDS(H)02-05D15	4.5 ~ 9 VDC	±15 VDC	0mA	±67mA	30mVp-p	40mA	82	±330μF
PDS(H)02-12S3P3	9 ~ 18 VDC	3.3 VDC	0mA	500mA	30mVp-p	20mA	75	3300μF
PDS(H)02-12S05	9 ~ 18 VDC	5 VDC	0mA	400mA	30mVp-p	20mA	81	1680μF
PDS(H)02-12S09	9 ~ 18 VDC	9 VDC	0mA	222mA	30mVp-p	20mA	79	1000μF
PDS(H)02-12S12	9 ~ 18 VDC	12 VDC	0mA	167mA	30mVp-p	20mA	81	820μF
PDS(H)02-12S15	9 ~ 18 VDC	15 VDC	0mA	134mA	30mVp-p	20mA	84	680μF
PDS(H)02-12D05	9 ~ 18 VDC	±5 VDC	0mA	±200mA	30mVp-p	25mA	78	±1000μF
PDS(H)02-12D12	9 ~ 18 VDC	±12 VDC	0mA	±83mA	30mVp-p	25mA	83	±470μF
PDS(H)02-12D15	9 ~ 18 VDC	±15 VDC	0mA	±67mA	30mVp-p	25mA	82	±330μF
PDS(H)02-24S3P3	18 ~ 36 VDC	3.3 VDC	0mA	500mA	30mVp-p	10mA	75	3300μF
PDS(H)02-24S05	18 ~ 36 VDC	5 VDC	0mA	400mA	30mVp-p	10mA	81	1680μF
PDS(H)02-24S09	18 ~ 36 VDC	9 VDC	0mA	222mA	30mVp-p	10mA	79	1000μF
PDS(H)02-24S12	18 ~ 36 VDC	12 VDC	0mA	167mA	30mVp-p	10mA	84	820μF
PDS(H)02-24S15	18 ~ 36 VDC	15 VDC	0mA	134mA	30mVp-p	10mA	84	680μF
PDS(H)02-24D05	18 ~ 36 VDC	±5 VDC	0mA	±200mA	30mVp-p	10mA	78	±1000μF
PDS(H)02-24D12	18 ~ 36 VDC	±12 VDC	0mA	±83mA	30mVp-p	10mA	84	±470μF
PDS(H)02-24D15	18 ~ 36 VDC	±15 VDC	0mA	±67mA	30mVp-p	10mA	84	±330μF
PDS(H)02-48S3P3	36 ~ 75 VDC	3.3 VDC	0mA	500mA	30mVp-p	7mA	75	3300μF
PDS(H)02-48S05	36 ~ 75 VDC	5 VDC	0mA	400mA	30mVp-p	7mA	81	1680μF
PDS(H)02-48S09	36 ~ 75 VDC	9 VDC	0mA	222mA	30mVp-p	7mA	79	1000μF
PDS(H)02-48S12	36 ~ 75 VDC	12 VDC	0mA	167mA	30mVp-p	7mA	82	820μF
PDS(H)02-48S15	36 ~ 75 VDC	15 VDC	0mA	134mA	30mVp-p	7mA	82	680μF
PDS(H)02-48D05	36 ~ 75 VDC	±5 VDC	0mA	±200mA	30mVp-p	7mA	78	±1000μF
PDS(H)02-48D12	36 ~ 75 VDC	±12 VDC	0mA	±83mA	30mVp-p	7mA	83	±470μF
PDS(H)02-48D15	36 ~ 75 VDC	±15 VDC	0mA	±67mA	30mVp-p	7mA	83	±330μF

Note

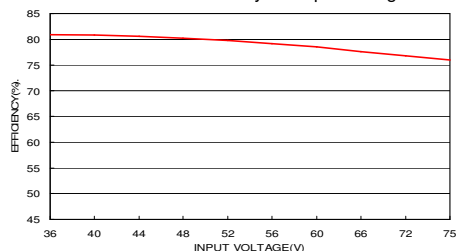
1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C.
MIL-HDBK-217F Notice2 @Ta=25 °C, Full load(Ground, Benign, controlled environment)
2. Typical value at nominal input and full load. (20MHz BW.)
3. Typical value at nominal input and no load.
4. Typical value at nominal input and full load.
5. Test by minimum input and constant resistive load.
6. The PDS(H)02 series standard module meets EN55022 Class A and Class B with external components.
For more detail information, please contact with P-DUKE.
7. An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.
The filter capacitor Power Mate suggest: Nippon chemi-con KY series, 220 μ F/100V.

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

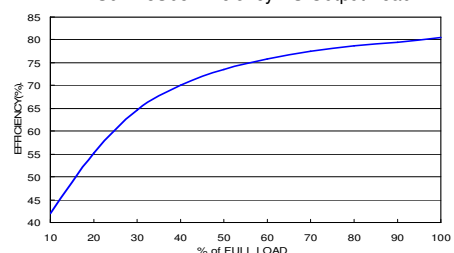
PDS02-48S05 Derating Curve



PDS02-48S05 Efficiency VS Input Voltage

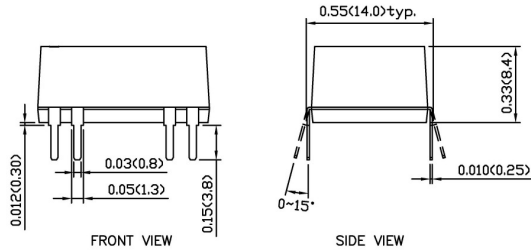
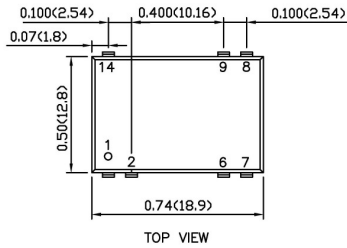


PDS02-48S05 Efficiency VS Output Load

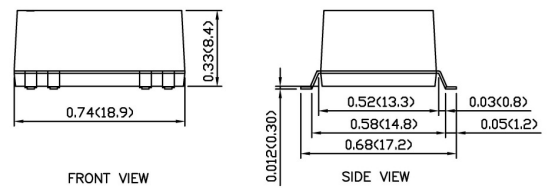
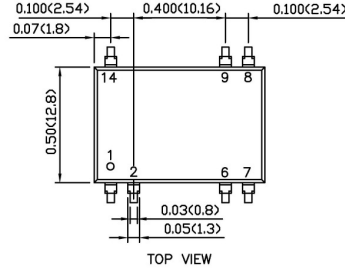


MECHANICAL DRAWING :

DIP TYPE



SMD TYPE



1. All dimensions in Inch (mm)

Tolerance: X.XX±0.02 (X.X±0.5)

X.XXX±0.01 (X.XX±0.25)

2. Pin pitch tolerance ±0.01 (0.25)

3. Pin dimension tolerance ±0.004 (0.1)

PIN CONNECTION		
PIN	SINGLE	DUAL
1	-INPUT	-INPUT
2	CTRL	CTRL
6	NC	COMMON
7	NC	-OUTPUT
8	+OUTPUT	+OUTPUT
9	-OUTPUT	COMMON
14	+INPUT	+INPUT