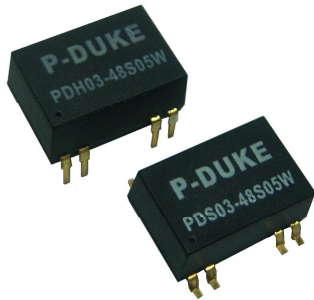




APPLICATIONS

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

FEATURES

- 3 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
- 4:1 ULTRA WIDE INPUT VOLTAGE RANGE
- HIGH EFFICIENCY UP TO 83%
- 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

OPTIONS

3000VDC ISOLATION

DESCRIPTION

The PDS03W(SMD type), PDH03W(DIP type) offer 3 watts of output power from a 0.74 x 0.50 x 0.33 inch package without derating to 71°C. The PDS(H)03W series have 4:1 ultra wide input voltage of 4.5~18, 9~36, and 18~75VDC 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		3 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 Suffix "H"	1600VDC, min.1 minute 3000VDC, min.1 minute	
Isolation resistance	500VDC	10 ⁹ ohms, min.	
Isolation capacitance	Standard Suffix "H"	50pF, max. 50pF, max.	
Switching frequency	100kHz, min.		
Design meet 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 MIL-HDBK-217F	3.963 x 10 ⁶ hrs 1.707 x 10 ⁶ hrs	

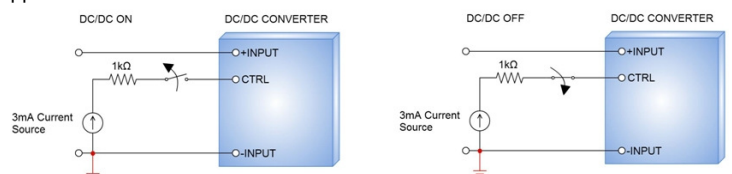
EMC CHARACTERISTICS

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	12V nominal input	4.5 ~ 18VDC
	24V nominal input	9 ~ 36VDC
	48V nominal input	18 ~ 75VDC
Input filter	Capacitor type	
Input surge voltage	12V input	25VDC 1sec, max.
	24V input	50VDC 1sec, max.
	48V input	100VDC 1sec, max.
Input reflected ripple current(Note 6)	12V input	80mA _{p-p}
	24V input	40mA _{p-p}
	48V input	30mA _{p-p}
Start up time	Nominal input and constant resistive load	Power up 5mS Remote ON/OFF 5mS
	DC-DC ON	Open or high impedance
Remote ON/OFF	DC-DC OFF	Control pin applied current 2 ~ 4mA max(via 1KΩ)
	Remote off state input current	Nominal input 2.5mA, max.

Application circuit:



ENVIRONMENTAL SPECIFICATIONS

Operating ambient temperature	-40°C ~ +71°C (without derating) +71°C ~ +85°C (with 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



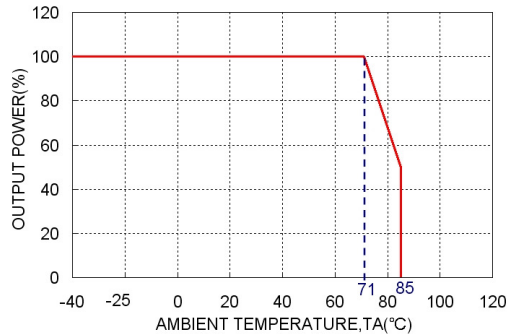
Model Number	Input Range	Output Voltage	Output Current		Output ⁽²⁾ Ripple & Noise	No load ⁽³⁾ Input Current	Eff ⁽⁴⁾ (%)	Capacitor ⁽⁵⁾ Load max.
			Min. load	Full load				
PDS(H)03-12S3P3W	4.5 ~ 18 VDC	3.3 VDC	0mA	700mA	30 mVp-p	35mA	75	3300μF
PDS(H)03-12S05W	4.5 ~ 18 VDC	5 VDC	0mA	600mA	30 mVp-p	35mA	81	1680μF
PDS(H)03-12S09W	4.5 ~ 18 VDC	9 VDC	0mA	333mA	30 mVp-p	35mA	80	1000μF
PDS(H)03-12S12W	4.5 ~ 18 VDC	12 VDC	0mA	250mA	30 mVp-p	35mA	82	820μF
PDS(H)03-12S15W	4.5 ~ 18 VDC	15 VDC	0mA	200mA	30 mVp-p	35mA	82	680μF
PDS(H)03-12D05W	4.5 ~ 18 VDC	±5 VDC	0mA	±300mA	30 mVp-p	40mA	79	±1000μF
PDS(H)03-12D12W	4.5 ~ 18 VDC	±12 VDC	0mA	±125mA	30 mVp-p	40mA	82	±470μF
PDS(H)03-12D15W	4.5 ~ 18 VDC	±15 VDC	0mA	±100mA	30 mVp-p	45mA	81	±330μF
PDS(H)03-24S3P3W	9 ~ 36 VDC	3.3 VDC	0mA	700mA	30 mVp-p	20mA	75	3300μF
PDS(H)03-24S05W	9 ~ 36 VDC	5 VDC	0mA	600mA	30 mVp-p	20mA	80	1680μF
PDS(H)03-24S09W	9 ~ 36 VDC	9 VDC	0mA	333mA	30 mVp-p	20mA	80	1000μF
PDS(H)03-24S12W	9 ~ 36 VDC	12 VDC	0mA	250mA	30 mVp-p	20mA	82	820μF
PDS(H)03-24S15W	9 ~ 36 VDC	15 VDC	0mA	200mA	30 mVp-p	20mA	82	680μF
PDS(H)03-24D05W	9 ~ 36 VDC	±5 VDC	0mA	±300mA	30 mVp-p	20mA	79	±1000μF
PDS(H)03-24D12W	9 ~ 36 VDC	±12 VDC	0mA	±125mA	30 mVp-p	20mA	82	±470μF
PDS(H)03-24D15W	9 ~ 36 VDC	±15 VDC	0mA	±100mA	30 mVp-p	20mA	81	±330μF
PDS(H)03-48S3P3W	18 ~ 75 VDC	3.3 VDC	0mA	700mA	30 mVp-p	13mA	75	3300μF
PDS(H)03-48S05W	18 ~ 75 VDC	5 VDC	0mA	600mA	30 mVp-p	13mA	80	1680μF
PDS(H)03-48S09W	18 ~ 75 VDC	9 VDC	0mA	333mA	30 mVp-p	13mA	80	1000μF
PDS(H)03-48S12W	18 ~ 75 VDC	12 VDC	0mA	250mA	30 mVp-p	13mA	83	820μF
PDS(H)03-48S15W	18 ~ 75 VDC	15 VDC	0mA	200mA	30 mVp-p	13mA	82	680μF
PDS(H)03-48D05W	18 ~ 75 VDC	±5 VDC	0mA	±300mA	30 mVp-p	13mA	79	±1000μF
PDS(H)03-48D12W	18 ~ 75 VDC	±12 VDC	0mA	±125mA	30 mVp-p	13mA	82	±470μF
PDS(H)03-48D15W	18 ~ 75 VDC	±15 VDC	0mA	±100mA	30 mVp-p	13mA	81	±330μF

Note

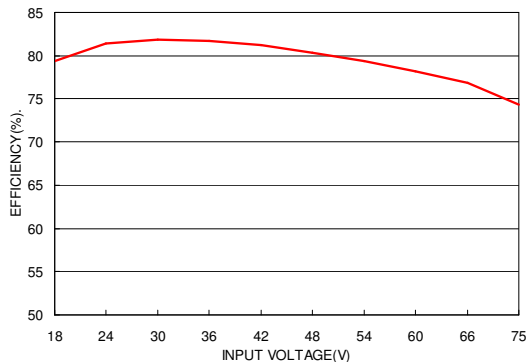
- 1.BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C.
MIL-HDBK-217F Notice2 @Ta=25 °C, Full load(Ground, Benign, controlled environment)
2. Typical value at nominal input and full load. (20MHz BW.)
3. Typical value at nominal input and no load.
4. Typical value at nominal input and full load.
5. Test by minimum input and constant resistive load.
6. The PDS(H)03W 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.

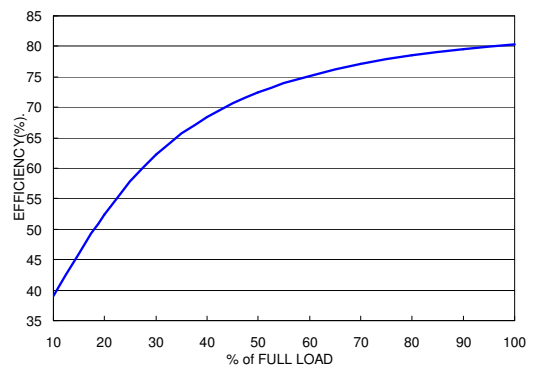
PDS03-48S05W Derating Curve



PDS03-48S05W Efficiency VS Input Voltage



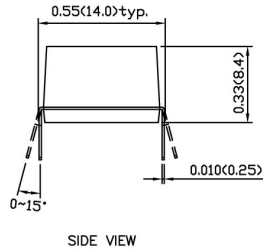
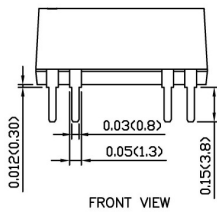
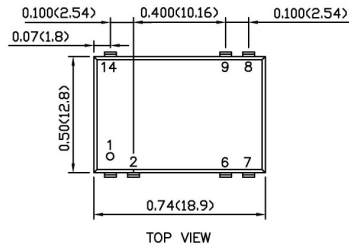
PDS03-48S05W Efficiency VS Output Load



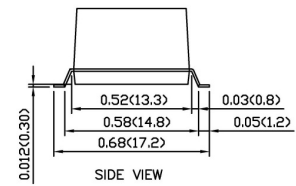
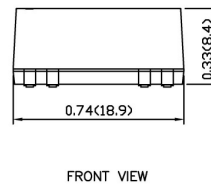
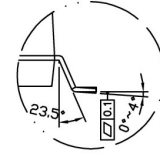
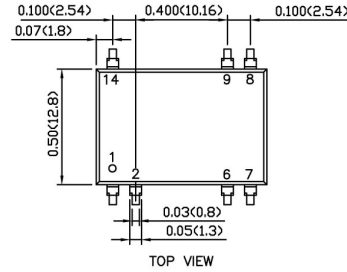


MECHANICAL DRAWING :

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