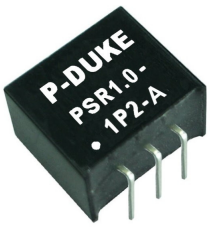
PSR1.0 SERIES

NON- ISOLATION DC-DC CONVERTER

STANDARD TYPE



SUFFIX -A

FEATURES

- PIN-OUT COMPATIBLE WITH LM78XX LINEAR REGULATORS
- SMALL SIZE AND LOW PROFILE:
  SIP3 L X W X H = 0.46" X 0.30" X 0.40"
- HIGH EFFICIENCY UP TO 96%
- LOW STANDBY CURRENT
- WIDE INPUT RANGE: 4.6 ~ 36Vdc
- OVER-CURRENT PROTECTION
- SHORT CIRCUIT PROTECTION
- OVER-TEMPERATURE PROTECTION
- LOW OUTPUT RIPPLE AND NOISE
- FIXED SWITCHING FREQUENCY (500 kHz)
- SAFETY MEETS UL60950-1, EN60950-1 AND IEC60950-1
- ISO9001 CERTIFIED MANUFACTURING FACILITIES
- COMPLIANT TO RoHS EU DIRECTIVE 2011/65/EU

APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Distributed Power Architectures
Semiconductor Equipment
Microprocessor Power Applications

DESCRIPTION

The PSR1.0-SERIES are high performance switching regulators are suited to replace 78xx linear regulators and pin compatible. It provides 1A output current and high efficiency up to 96%.

TECHNICAL SPECIFICATION

All specifications are typical at nominal input, full load and 25ºC otherwise noted

OUTPUT SPECIFICATIONS			
Output current			1A, max.
Voltage accuracy			±2%Vo
Minimum load			0%
Line regulation			± 0.2%Vo
Load regulation	10% to 100% of F.L	1.2VDC,1.5VDC(Standard)	± 0.6%Vo
		Others(Standard)	± 0.4%Vo
		1.2VDC,1.5VDC,1.8VDC (Suffix-A)	± 1.2%Vo
		Others(Stuffix-A)	± 0.4%Vo
Ripple and noise 20MHz bandwidth	Vout = 1.2VDC to 6.5VDC		50mVp-p
	Vout = 9VDC to 15VDC		75mVp-p
Temperature coefficient			±0.015%/℃, max.
Dynamic load response	Load change step 50%⟷100% of F.L.	Peak deviation	150mV
		Recovery time	250μs
Output current limit			2.5A
Output short circuit			Continuous, automatics recovery
Capacitor Load (Note 4)			470μF, max.
Output voltage overshoot-startup		Full Load	1%Vo, max.

GENERAL SPECIFICATIONS		
Efficiency (Note 3)		See table
Isolation voltage		None
Switching frequency		500kHz±10%
Design meet safety standard		IEC60950-1, UL60950-1, EN60950-1
Case material		Non-conductive black plastic
Base material		None
Potting material		Silicon (UL94-V0)
Dimensions		0.46 X 0.30 X 0.40 Inch (11.7 X 7.5 X 10.1 mm)
Weight		1.9g(0.07oz)
MTBF (Note 1)	BELLCORE-TR-NWT-000332	2.849 x 10^7 hrs
	MIL-HDBK-217F	5.358 x 10^6 hrs

INPUT SPECIFICATIONS		
Input voltage range (Note 5)		4.6VDC ~ 36VDC
	Vout = 1.2VDC to 3.3VDC	9V nominal input
	Vout = 5VDC to 6.5VDC	12V nominal input
	Vout = 9VDC to 15VDC	24V nominal input
Maximum input current	Vin=Vin(min), Io=Io(max)	1A
Input filter		C filter
Input reflected ripple current		150mA

ENVIRONMENTAL SPECIFICATIONS		
Operating temperature range		–40ºC ~ +85ºC(with derating)
Storage temperature range		–55ºC ~ +125ºC
Thermal shock		MIL-STD-810F
Over temperature protection	Internal IC junction	150℃

FEATURE SPECIFICATIONS		
Rise time	Time for Vo to rise from 10% to 90%of Vo	2ms, max.

Note

1. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40ºC. (Ground fixed and controlled environment)
   MIL-HDBK-217F Notice2 @Ta=25 ºC, Full load (Ground, Benign, controlled environment)
2. Typical value at minimum to maximum input voltage and no load.
3. Typical value at minimum or maximum input voltage and full load.
4. Tested with minimum input and constant resistive load.
5. With a C1 (22uF/50V) input capacitor for input voltage > 32VDC, the input voltage allows 36 VDC, max.

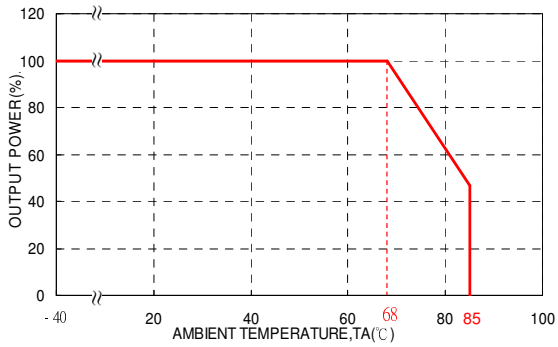
CAUTION: This power module is not internally fused. An input line fuse must always be used.

PSR1.0 SERIES

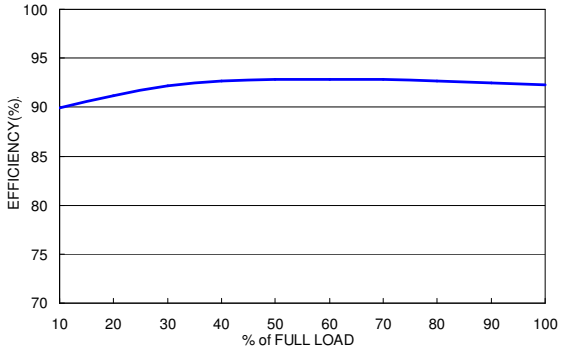
NON- ISOLATION DC-DC CONVERTER

Model Name	Input Voltage(5)	Output Voltage	Output Current		No Load Current(2)	Efficiency (%) (3)	
			Min. Load	Max. Load		Min. Vin	Max. Vin
PSR1.0-1P2	4.6 ~ 36VDC	1.2VDC	0A	1A	1mA	74	62
PSR1.0-1P5	4.6 ~ 36VDC	1.5VDC			1mA	78	65
PSR1.0-1P8	4.6 ~ 36VDC	1.8VDC			1mA	82	69
PSR1.0-2P5	4.6 ~ 36VDC	2.5VDC			1mA	87	75
PSR1.0-3P3	4.75 ~ 36VDC	3.3VDC			2mA	91	78
PSR1.0-5P0	6.5 ~ 36VDC	5.0VDC			1mA	94	84
PSR1.0-6P5	9.0 ~ 36VDC	6.5VDC			1mA	93	87
PSR1.0-9P0	12 ~ 36VDC	9.0VDC			1mA	95	90
PSR1.0-012	15 ~ 36VDC	12VDC			1mA	95	92
PSR1.0-015	18 ~ 36VDC	15VDC			1mA	96	94

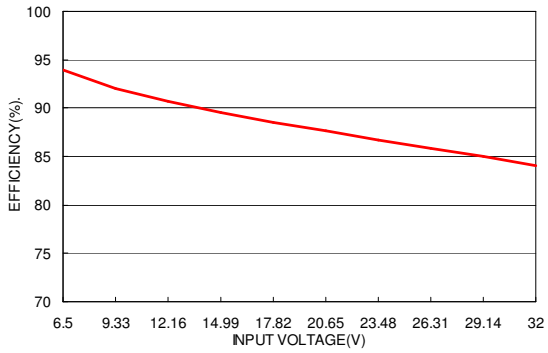
PSR1.0-5P0 Derating Curve

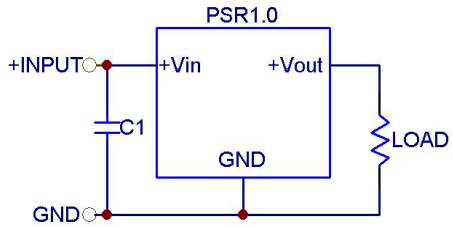


PSR1.0-5P0 Efficiency VS Output Load

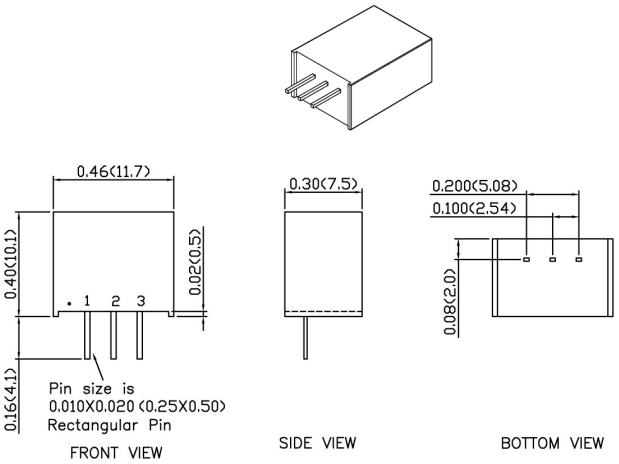


PSR1.0-5P0 Efficiency VS Input Voltage

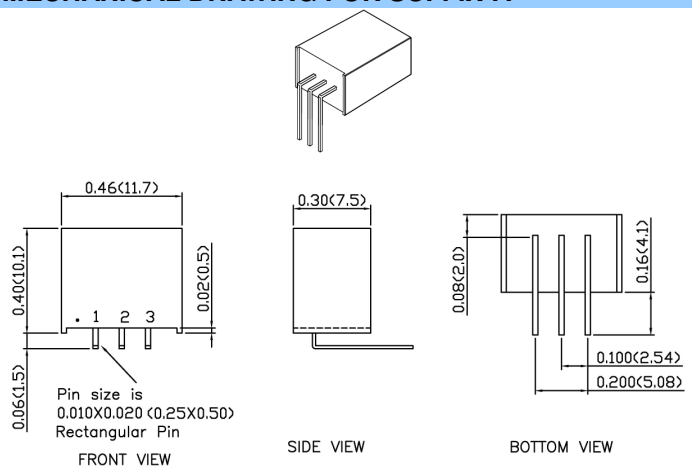




MECHANICAL DRAWING FOR STARDANDS



MECHANICAL DRAWING FOR SUFFIX-A



PIN CONNECTION	
PIN	DEFINE
1	+VIN
2	GND
3	+VOUT

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	DEFINE
1	+VIN
2	GND
3	+VOUT