

STANDARD TYPE

SUFFIX -A

**APPLICATIONS**

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

**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)
- DESIGN MEETS UL60950-1, EN60950-1 AND IEC60950-1
- ISO9001 CERTIFIED MANUFACTURING FACILITIES
- COMPLIANT TO RoHS EU DIRECTIVE 2002/95/EC

**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 25°C otherwise noted

OUTPUT SPECIFICATIONS		
Output current		1000mA, max.
Voltage accuracy	Full Load	±2%Vo, max.
Minimum load		0%
Line regulation		± 0.2%Vo, typ.
Load regulation	1.2V,1.5V(Standard)	± 0.6%Vo, typ.
	10% to 100% of F.L	Others(Standard) ± 0.4%Vo, typ.
	1.2V,1.5V,1.8V(Suffix-A)	± 1.2%Vo, typ.
	Others(Stuffix-A)	± 0.4%Vo, typ.
Ripple and noise	Vout = 1.2V to 6.5V	50mVp-p
20MHz bandwidth	Vout = 9 to 15V	75mVp-p
Temperature coefficient		±0.015%/°C, max.
Dynamic load response	Load change step	Peak deviation 150mV
	50%↔100% of F.L.	Recovery time 250µS
Output current limit		2.5A,typ
Output short-circuit		Continuous, automatic recovery
Capacitor Load (Note 4)		470uF, max.
Output voltage overshoot-startup	Full Load	1%Vo, max.
GENERAL SPECIFICATIONS		
Efficiency (Note 3)		See table
Isolation voltage		None
Switching frequency		500KHz,typ
Design meet safety standard		IEC60950-1, UL60950-1, EN60950-1
Case material		Non-conductive black plastic
Base material		None
Potting material		Epoxy (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 <sup>7</sup> hrs
	MIL-HDBK-217F	5.358 x 10 <sup>6</sup> hrs

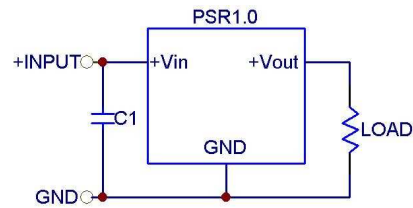
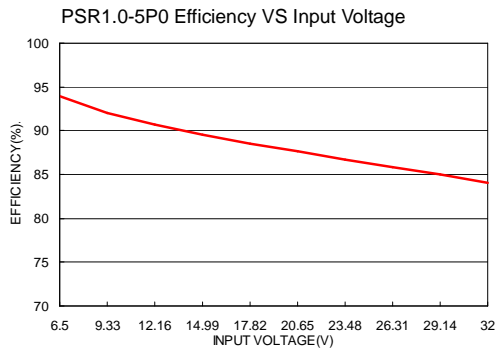
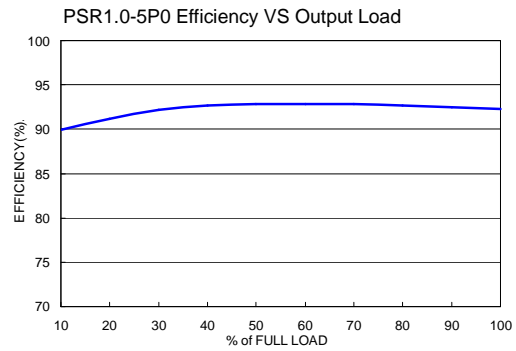
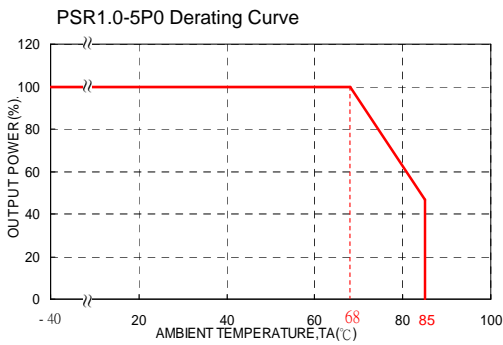
INPUT SPECIFICATIONS		
Input voltage range (Note 5)	Vout = 1.2V to 3.3Vdc	4.6VDC – 36VDC
	Vout = 5V to 6.5Vdc	9V nominal input
	Vout = 9 to 15Vdc	12V nominal input
		24V nominal input
Maximum input current	Vin=Vin(min); Io=Io(max)	1A
Input filter		C filter
Input reflected ripple current		150mA, typ.
ENVIRONMENTAL SPECIFICATIONS		
Operating temperature range		-40°C ~ +85°C(with derating)
Storage temperature range		-55°C ~ +125°C
Thermal shock		MIL-STD-810F
Over temperature protection	Internal IC junction	150°C
FEATURE SPECIFICATIONS		
Rise time	Time for Vo to rise from 10% to 90%of Vo	2mS,max



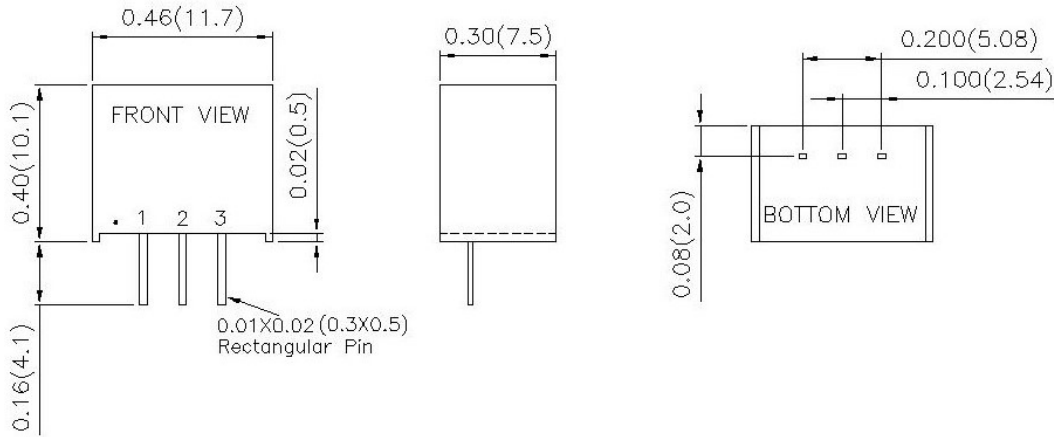
Model Name	Input Voltage(5)	Output Voltage	Output Current		No Load Current(2)	Efficiency (%) (3)	
			Min. Load	Max. Load		Min. Vin	Max. Vin
PSR1.0-1P2	4.6 – 36Vdc	1.2Vdc	0A	1A	1mA	74	62
PSR1.0-1P5	4.6 – 36Vdc	1.5Vdc			1mA	78	65
PSR1.0-1P8	4.6 – 36Vdc	1.8Vdc			1mA	82	69
PSR1.0-2P5	4.6 – 36Vdc	2.5Vdc			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

**Note**

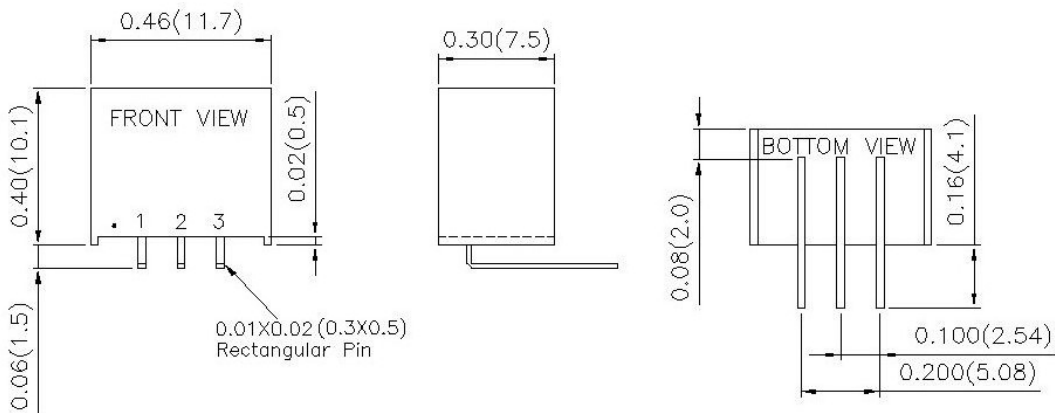
- BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment)  
 MIL-HDBK-217F Notice2 @Ta=25 °C, Full load (Ground, Benign, controlled environment)
- Typical value at min. to max. input voltage and no load.
- Typical value at min. or max. input voltage and full load.
- Tested with min. input voltage and constant resistive load.
- With a C1(22uF/50V) input capacitor for  $V_{in} > 32V$ , the input voltage allows 36 V<sub>DC, max.</sub>



# Standard



# Suffix-A



PIN CONNECTION	
PIN	DEFINE
1	+Vin
2	GND
3	+Vout

1. All dimensions in Inches (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)



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