

# PSR1-78xxS



## PSR1-SERIES Rev.11-2010

- ✓ 1000mA **Switching Regulator**
- ✓ **Wide Input - Step down**
- ✓ **SIP3 Plastic Package**
- ✓ **Non-Isolated & Non-Regulated**
- ✓ **Short Circuit Protection**
- ✓ **High Efficiency**

The PSR1-S series is a family of cost effective 1.5~5W single output buck DC-DC converters. These converters are encapsulated in a non-conductive black plastic package 3-pin SIP case, continuous short circuit protection with automatic restart and good line / load regulation. Devices are filled up with flame retardant resin .Input voltages of 4.75~18, and 6.5~18 with output voltage of 1.5, 1.8, 2.5, 3.3, 5, Vdc. High performance features include high efficiency operation up to 94%. Standard features include an input range of 4.75~18Vdc tolerance and low output ripple and noise.

All specifications typical at Ta=25°C, nominal input voltage and full load unless otherwise specified

### Input Specifications

Voltage Range	Wide Input (See Table)
Filter	Capacitors
Input Reflected Ripple Current	40mA pk-pk

### Output Specifications

Voltage Accuracy	± 2%
Short Circuit Protection	Indefinite (Automatic Recovery)
Line Regulation	± 0.5%
Load Regulation (10% - 100% load)	± 0.6%
Ripple and Noise (20Mhz bandwidth)	60 mV pk-pk
Temperature Coefficient	± 0.02% / °C
Capacitor Load	220 uF

### General Specifications

Efficiency	See Table
Switching Frequency	330 kHz, typ.
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 4.3 Mhrs

### Physical Specifications

Case Material	Non Conductive Black Plastic (UL94V-0 rated)
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 2.0 g, typ.

### Environment Specifications

Operating Temperature	-40 to +60 °C (for 100%)
Maximum Case Temperature	100 °C
Cooling	Free Air Convection (10mm distance required)

### EMC Characteristics

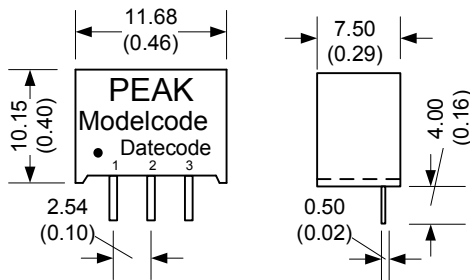
Radiated Emissions	EN55022 CLASS B
Conducted Emissions	EN55022 CLASS B
ESD	EN61000-4-2 Pref. Criteria B
RS	EN61000-4-3 Pref. Criteria A
EFT (An external filter capacitor is required if the module has to meet EN61000-4-4. (220uF/100V))	EN61000-4-4 Pref. Criteria B
CS	EN61000-4-6 Pref. Criteria A
PFMF	EN61000-4-8 Pref. Criteria A

# Selection Guide

Order #	Input Voltage Range (VDC)	Input Current no Load (mA)	Input Current full Load (Vin min.)	Input Current full Load (Vin max.)	Output Voltage (V)	Output Current (mA)	Efficiency (Vin min.) (%)	Efficiency (Vin max.) (%)
PSR1-781R5S	4.75-18	10.0	416.00	119.00	1.5	1000	78	72
PSR1-781R8S	4.75-18	10.0	474.00	135.00	1.8	1000	82	76
PSR1-782R5S	4.75-18	10.0	619.00	176.00	2.5	1000	87	81
PSR1-783R3S	4.75-18	10.0	790.00	221.00	3.3	1000	90	85
PSR1-7805S	6.5-18	10.0	836.00	319.00	5.0	1000	94	89

If you need other specifications, please enquire.

## Package / Pinning / Derating

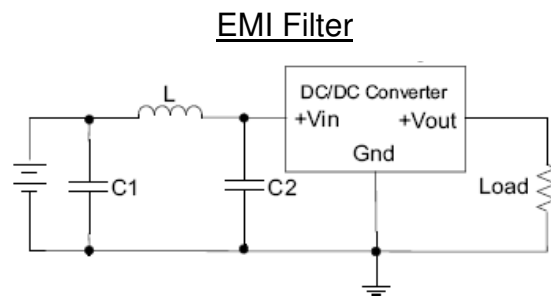
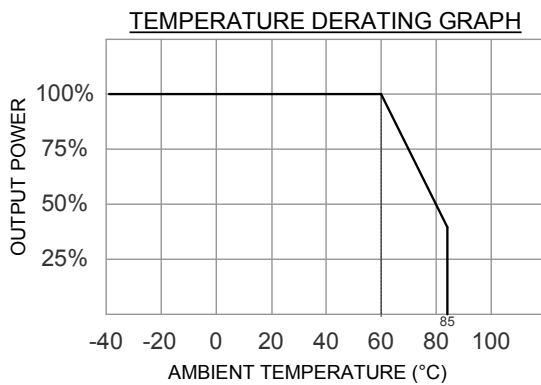


Notes : All dimensions are typical in millimeters ( inches ).

1. Pin diameter:  $0.5 \pm 0.05$  (  $0.02 \pm 0.002$  )
2. Pin pitch tolerance:  $\pm 0.35$  (  $\pm 0.014$  )
3. Case Tolerance:  $\pm 0.5$  (  $\pm 0.02$  )

Specification may change without notice. Pin length is typical.

PIN CONNECTIONS	
#	Switching Reg.
1	+ Vin
2	GND
3	+ Vout



C1 / C2 = 470uF, 35V  
L = 6.4uH