

PSR1(L)-78xxLF



PSR-SERIES

Rev.07-2015

- ✓ 1000 mA **Switching Regulator**
- ✓ **Wide** Input Voltage Range
- ✓ **SIP3** Plastic Package
- ✓ Non-Isolated & Non-Regulated
- ✓ Short Circuit Protection
- ✓ Low Ripple and Noise

The PSR series is a family of cost effective single output buck DC-DC converters. These converters are encapsulated in a non conductive black plastic 3-pin SIP case, continuous short circuit protection with automatic restart, good line / load regulation and ultra low quiescence current. Devices are filled up with flame retardant resin. High performance features include high efficiency operation up to 97%.

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

Input Specifications

Voltage Range Wide Input (See Table)

Output Specifications

Voltage Accuracy	± 2%
Output Current	1000mA
Output Current Limit	3000mA, max. (at. 1.5-3.3 Vout) 2000mA, max. (at. 5-15 Vout)
Short Circuit Input Power	0.5W (1.8W, max.)
Short Circuit Protection	Continuous (Automatic Recovery)
Line Regulation	± 0.2%
Load Regulation (10% - 100% load)	± 0.4%
Ripple and Noise (20Mhz bandwidth)	25 mV pk-pk (35 mV pk-pk, max.)
Temperature Coefficient	± 0.02% / °C, max.
Thermal Shutdown	150°C
Capacitor Load	1000 uF, max.

General Specifications

Efficiency	See Table
Switching Frequency	330 kHz, typ.
Humidity	95% rel H, max.
Reliability Calculated MTBF (MIL-HDBK-217F)	> 2.0 Mhrs

Physical Specifications

Case Material	Non Conductive Black Plastic (UL94V-0 rated)
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 3.7 g

Environment Specifications

Operating Temperature (for 100%)	-40 to +85°C
Maximum Case Temperature	100°C, max.
Storage Temperature	-55 to +125°C
Cooling	Free Air Convection (10mm distance required)
RoHS Conform	Soldering 260°C, max (1.5mm from case 10sec.)

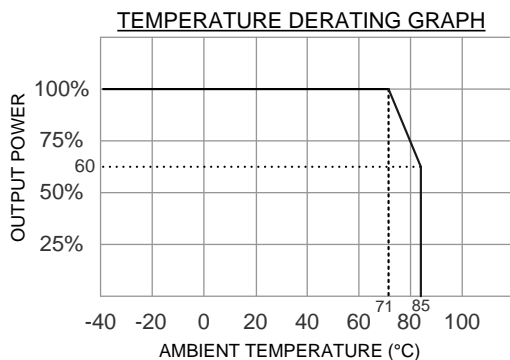
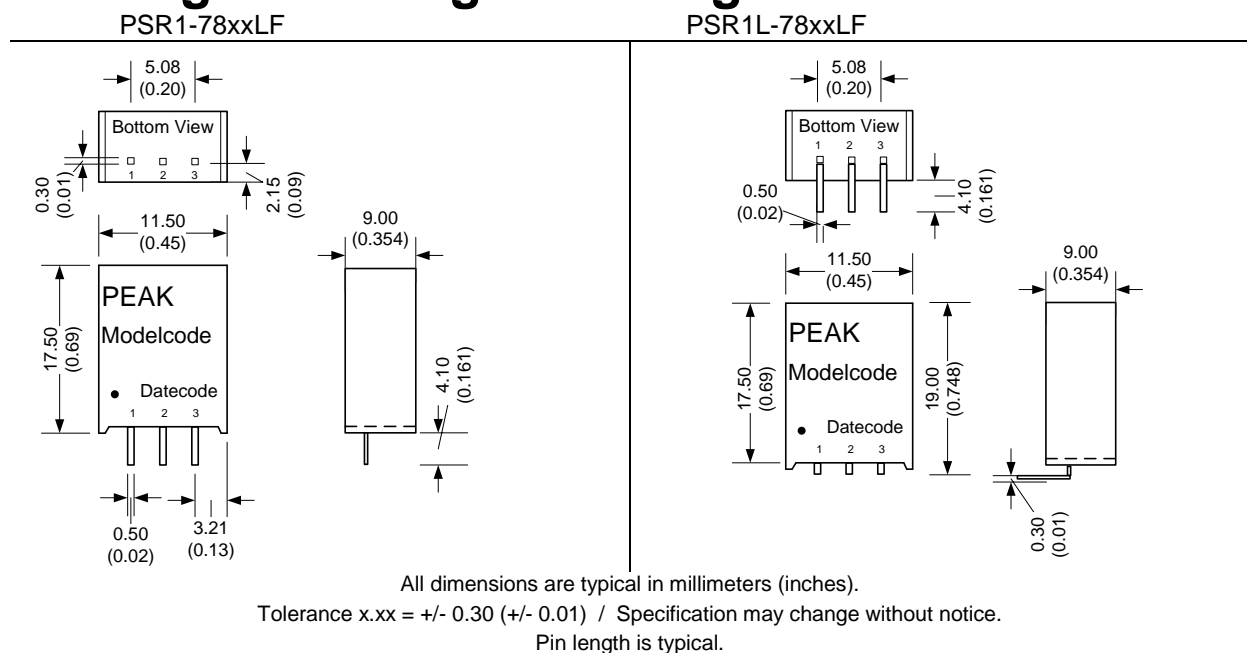
Selection Guide*

Order #	Input Voltage Range (VDC)	Output Voltage (V)	Efficiency (Vin min.) (%)	Efficiency (Vin max.) (%)
PSR1-781R5LF	4.75-26	1.5	80	71
PSR1-781R8LF	4.75-26	1.8	83	74
PSR1-782R5LF	4.75-28	2.5	88	80
PSR1-783R3LF	4.75-28	3.3	90	83
PSR1-7805LF	6.5-32	5	93	88
PSR1-786R5LF	9.0-32	6.5	94	90
PSR1-7809LF	12-32	9	95	92
PSR1-7812LF	16-32	12	96	94
PSR1-7815LF	20-32	15	97	94

If you need other specifications, please enquire.

* PSR1L-78xxLF for 90° bend pins.

Package / Pinning / Derating



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

App Notes

External Capacitor Table

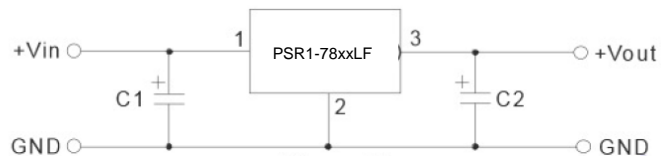
	C1	C2
PSR1.5-781R5LF	10uF/50V	22uF/6.3V
PSR1.5-781R8LF	10uF/50V	22uF/6.3V
PSR1.5-782R5LF	10uF/50V	22uF/6.3V
PSR1.5-783R3LF	10uF/50V	22uF/6.3V
PSR1.5-7805LF	10uF/50V	22uF/16V
PSR1.5-786R5LF	10uF/50V	10uF/16V
PSR1-7809LF	10uF/50V	10uF/16V
PSR1-7812LF	10uF/50V	10uF/25V
PSR1-7815LF	10uF/50V	10uF/25V

Standard Application Circuit

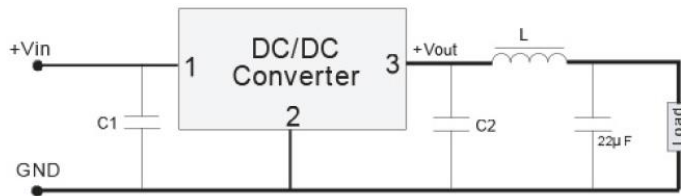
1. C1 and C2 are required and should be fitted close to the converter pins.

2. The capacitance of C1 and C2 sees external capacitor table, it can be increased properly if required. Tantalum or low ESR electrolytic capacitors may also suffice.

3. No parallel connection or plug and play.



Output Ripple Reduction



To reduce output ripple, it is recommended to add a LC filter in output port.

L: Recommended parameter 10µH – 47µH

Note: In this datasheet, all the test methods of indications are based on corporate standards.