PSR-78xxC (-OF)

PEAK electronics
THE WORLD OF DC/DC-CONVERTERS
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PSR-SERIES

- ✓ Non-Isolated
- ✓ **500 mA**
- ✓ **Single** Output
- ✓ **SIP3** Case – **optional Open Frame**
- ✓ **Short Circuit Protection**
- ✓ High Efficiency up to 96%

The PSR series is a family of cost effective switching regulators. These converters are in an ultra miniature SIP3 case. High performance features: high efficiency operation, available from 3.3 to 15 VDC output. Available as encapsulated or optional open frame.

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

Input Specifications

Voltage Range	See table
Current No Load	0.2 mA
Filter	Capacitors

Output Specifications

Voltage accuracy	±2%
Line regulation (per 1% Vin change)	±0.2%
Load regulation (10% to 100%)	±0.4%
Ripple & noise (20 MHz bandwidth)	75 mV pk-pk, max.
Short circuit protection	Continuous (auto recovery)
Temperature Drift Coefficient	±0.03% / °C, max.
Transient Response Deviation	250uS (25% load step)
Transient Recovery Time	0.2 – 1 ms, max.

General Specifications

Efficiency	Up to 95% (See table)
Switching Frequency	550 - 850 kHz
Humidity (rel.)	95%, max.
MTBF (Calculated MIL-HDBK-217F)	>2 Mhrs

Environment / Physical Specifications

Operation Temp. (with derating)	-40°C to 85°C
Storage	-55°C to 125°C
Cooling	Nature / Free Air
Case Material	Plastic (UL94V-0 rated) or Open Frame
Weight	1.8g (Plastic Case) 1.0g (Open Frame)

EMC Specifications

Radiated Emissions*	EN55022	Class B
Conducted Emissions*	EN55022	Class B
ESD	IEC-61000-4-2	Pref. Criteria B
RS	IEC-61000-4-3	Pref. Criteria A
EFT*	IEC-61000-4-4	Pref. Criteria B
Surge*	IEC-61000-4-5	Pref. Criteria B
CS	IEC-61000-4-6	Pref. Criteria A

*Input filter components are required to meet (see App Note)

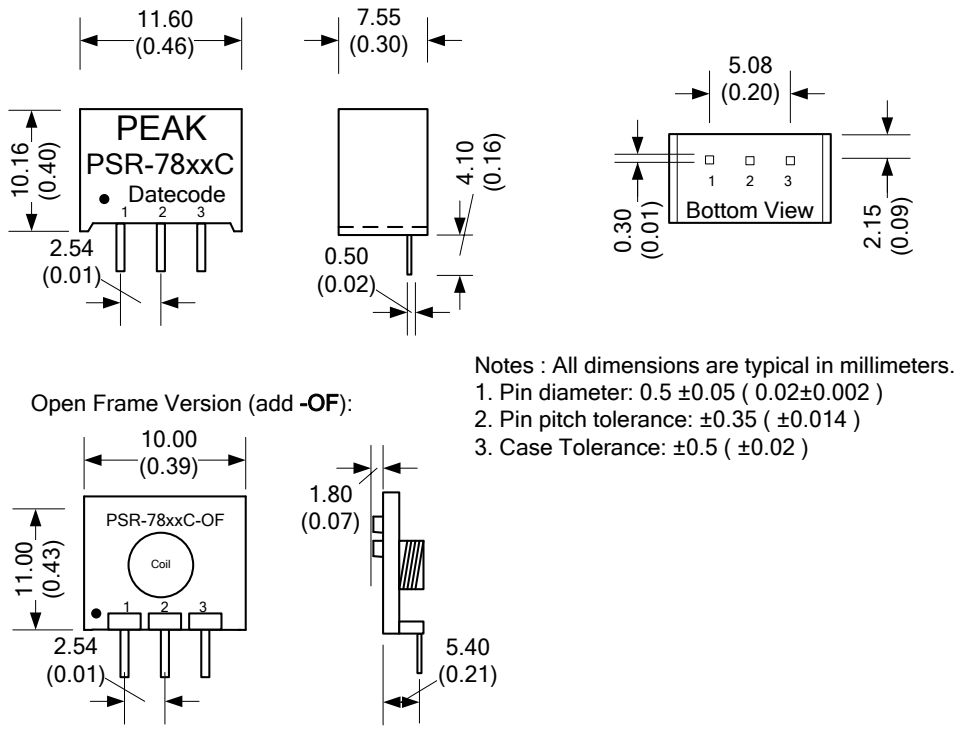
Product Guide

Order #	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency Vin min. (%)	Efficiency Vin max. (%)	Capacitive Load, max. (uF)
SINGLE OUTPUT						
PSR-783.3C	4.75 - 36	3.3	500	86	80	680
PSR-7805C	6.5 - 36	5	500	90	84	680
	7 - 31	-5	-300	80	81	330
PSR-7812C	15 - 36	12	500	94	91	680
	8 - 24	-12	-150	84	85	330
PSR-7815C	19 - 36	15	500	95	93	680
	8 - 21	-15	-150	85	87	330

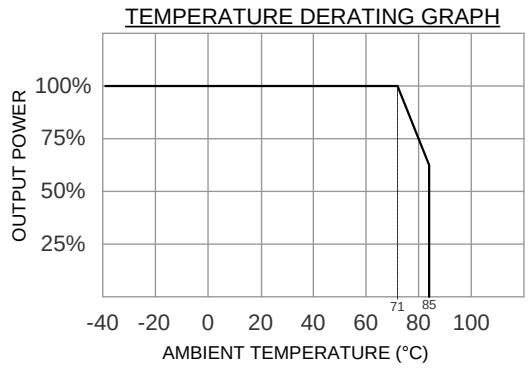
How to Order:

Standard **Plastic Case**	PSR-78xxC
Optional **Open Frame**	PSR-78xxC**-OF**

Package / Pinning / Derating



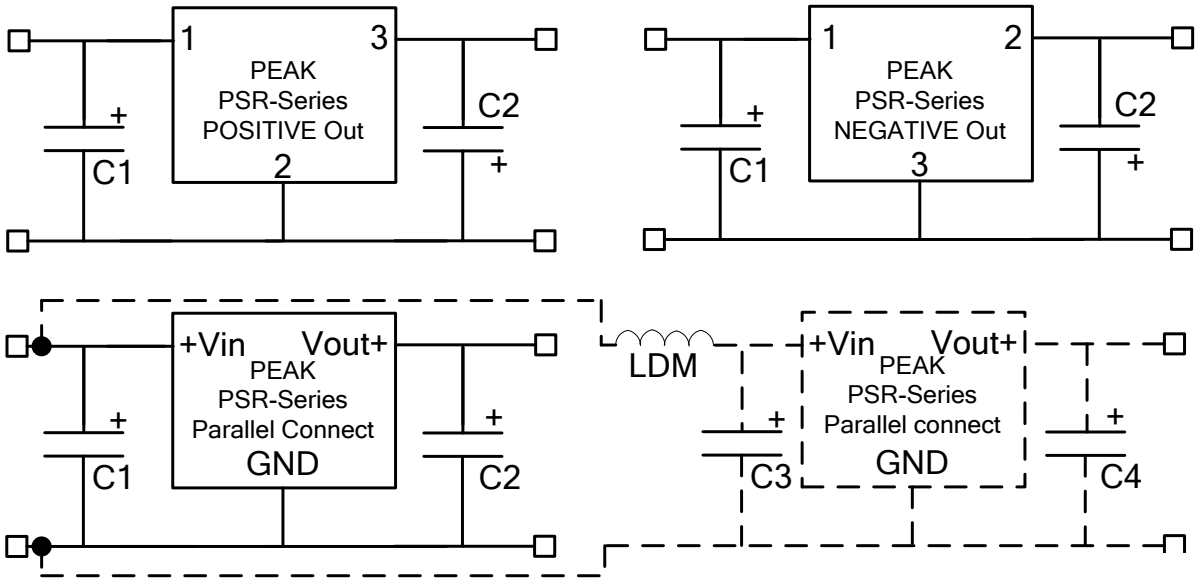
Notes : All dimensions are typical in millimeters.
1. Pin diameter: 0.5 ±0.05 (0.02±0.002)
2. Pin pitch tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)



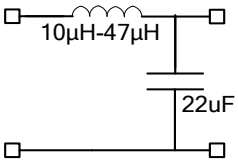
PIN CONNECTIONS		
#	Pos. Out	Neg. Out
1	+ Vin	+ Vin
2	GND	- Vout
3	+ Vout	GND

Application notes:

Recommended circuits:

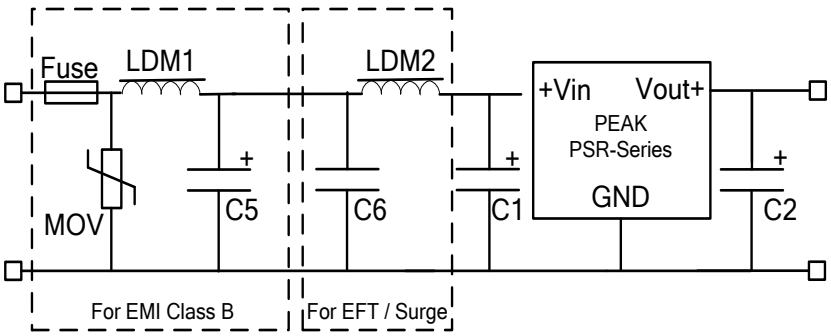


To reduce the output ripple, it's recommended to add a "LC Filter" at the output



SPECIFICATIONS		
Part	C1/C3 (ceramic)	C2/C4 (ceramic)
PSR-783.3C	10uF/50V	22uF/10V
PSR-7805C	10uF/50V	22uF/10V
PSR-7812C	10uF/50V	22uF/25V
PSR-7815C	10uF/50V	22uF/25V

Recommended circuit for EMC:



SPECIFICATIONS							
Part	C1	C2	C5	C6	MOV	LDM1	LDM2
PSR-783R3C	10uF/50V	22uF/10V	680uF/50V	4.7uF/50V	S20K30	82uH	12uH
PSR-7805C	10uF/50V	22uF/10V	680uF/50V	4.7uF/50V	S20K30	82uH	12uH
PSR-7809C	10uF/50V	22uF/16V	680uF/50V	4.7uF/50V	S20K30	82uH	12uH
PSR-7812C	10uF/50V	22uF/25V	680uF/50V	4.7uF/50V	S20K30	82uH	12uH
PSR-7815C	10uF/50V	22uF/25V	680uF/50V	4.7uF/50V	S20K30	82uH	12uH