

DC/DC Switching Regulator

3 PIN SIP Package, Switch-Regulator, Non-Isolated, Single Output

Rev.: 18 June 2024

- High efficiency up to 96%
- Non-isolated Regulator
- Operating Temperature (°C) : -40 ~ +100 (see Derating curve)
- Case Material: Black plastic, flame-retardant and heat-resistant (UL 94V0)
- Short Circuit Protection: Continuous, automatic-recovery



All specifications typical at Ta=25 °C, humidity less than 75%, nominal input voltage and rated output load unless otherwise specified.

INPUT SPECIFICATIONS

Input Voltage / Range (DC/DC)	Vdc	see product
Input Surge Voltage (100mS)	Vdc, max.	40
Start up Time	mS, typ.	5
Input Current No Load	mA, typ.	1.5
Input Current Full-Load	mA, min.	see product
Input Current Full-Load	mA, max.	see product
Recommended Input Fuse		1.2/1.5/1.8Vout: 0.8A 2.5/3.3/5/6.5Vout: 1.5A 9/12/15Vout: 2A
Input Filter		Capacitor
Input Reflected Ripple Current	mA pk-pk, typ.	35

Input Reflected Ripple Current: Measured with a simulated source inductance of 12µH and a source capacitor Cin (10µF, ESR<1.0Ω at 100KHz). |

OUTPUT SPECIFICATIONS

Output Voltage	Vdc	see product
Output Voltage Accuracy (0-100%)	%, typ.	±2.0
Output Current	A	1
Output Current Full Load	mA. max.	see product
Line Regulation	%, typ.	≤ 2.5Vout: ±0.5 ≥ 3.3Vout: ±0.3
Load Regulation (0% to 100%)	%, max.	≤ 2.5Vout: ±1.5 ≥ 3.3Vout: ±0.8 ≥ 9.0Vout: ±0.5
Load Regulation (10% to 100%)	%, max.	≤ 2.5Vout: ±0.8 ≥ 3.3Vout: ±0.6 ≥ 9.0Vout: ±0.5
Ripple and Noise (20 MHz Bandwidth)	mV pk-pk, max.	≤ 6.5Vout: 50 ≥ 9.0Vout: 75
Short Circuit Protection		Continuous, automatic-recovery
Temperature Coefficient	%/°C, typ.	±0.02

DC/DC Switching Regulator

3 PIN SIP Package, Switch-Regulator, Non-Isolated, Single Output

Rev.: 18 June 2024

OUTPUT SPECIFICATIONS

Capacitive Load @FL	μF , max.	see product
Transient Recovery Time	μs , typ.	250
Transient Response Deviation	%, max.	± 3

Ripple and Noise: Measured with a 0.1 μF MLCC. | Maximum Capacitive load: Minimum V_{in} and constant resistive load | Transient Recovery Time tested by normal input voltage and 25% load step change (75%-50%-25% of I_{o}).

DC/DC Switching Regulator

3 PIN SIP Package, Switch-Regulator, Non-Isolated, Single Output

Rev.: 18 June 2024

GENERAL SPECIFICATIONS

Efficiency Vin @FL	%, min.	see product
Efficiency Vin @FL	%, max.	see product
I/O Isolation Voltage(60sec)	Vdc, min.	Non-Isolation
Switching Frequency @FL	kHz, typ	410
Storage Humidity	%, rel H, max.	95
MTBF (MIL-HDBK-217F) at 25°C	Mhrs, min.	>3.5
Operating Temperature	°C	-40 ~ +100 (see Derating curve)
Storage Temperature	°C	-55 ~ +125
Thermal Impedance	°C / W, min.	47.82 (Mounting at FR4 - 1.18*1.18 inch - PCB)
Maximum Case Temperature	°C	105
Pin Soldering Resistance Temperature	°C, max.	260
Cooling		Natural Convection (30-65LFM)
Case Material		Black plastic, flame-retardant and heat-resistant (UL 94V0)
Pin Material		Tinned copper
Potting Material		Silicon (UL94V-0 rated)
Weight	g	2.3
Dimension	mm	11.7 x 7.7 x 10.2
Dimension	inch	0.46 x 0.30 x 0.40
Certification		CE (designed to meet)
Delivery Form		Tube
Safety Standard		IEC/EN/UL 62368-1 (designed to meet)
Approvals		Environmental Compliance: RoHS

DC/DC Switching Regulator

3 PIN SIP Package, Switch-Regulator, Non-Isolated, Single Output

Rev.: 18 June 2024

PRODUCT OVERVIEW

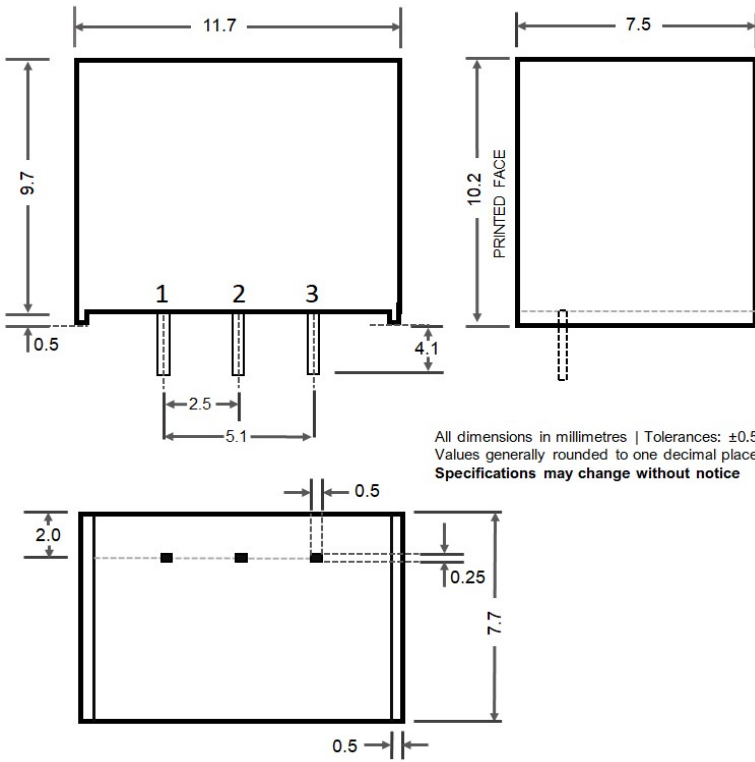
ARTICLE CODE	Input Voltage / Range (DC/DC)	Input Current Full-Load	Input Current Full-Load	Output Voltage	Output Current Full Load	Capacitive Load @FL	Efficiency Vin @FL	Efficiency Vin @FL
	Vdc	mA, min.	mA, max.	Vdc	mA, max.	µF, max.	%, min.	%, max.
PSR1M-241R2S	24 (4.6-36)	300	47	1.2	1000	680	87	72
PSR1M-241R5S	24 (4.6-36)	367	55	1.5	1000	680	89	76
PSR1M-241R8S	24 (4.6-36)	433	64	1.8	1000	680	90.5	79
PSR1M-242R5S	24 (4.6-36)	588	84	2.5	1000	680	92.5	83
PSR1M-243R3S	24 (4.75-36)	740	106	3.3	1000	680	94	86.5
PSR1M-2405S	24 (6.5-36)	806	156	5	1000	680	95.5	89.5
PSR1M-246R5S	24 (9-36)	765	201	6.5	1000	680	94.5	90
PSR1M-2409S	24 (12-36)	786	272	9	1000	470	95.5	92
PSR1M-2412S	24 (15-36)	843	359	12	1000	470	95	93
PSR1M-2415S	24 (18-36)	869	444	15	1000	330	96	94

DC/DC Switching Regulator

3 PIN SIP Package, Switch-Regulator, Non-Isolated, Single Output

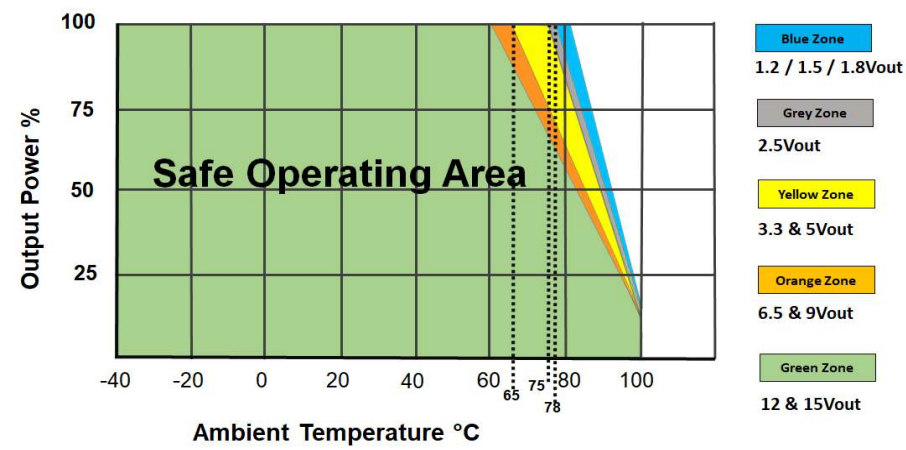
Rev.: 18 June 2024

TECHNICAL DRAWING



PIN Connections	
PIN 01	+Vin
PIN 02	GND
PIN 03	+Vout

TEMPERATURE DERATING CURVE



Exposure of devices to any of these conditions may adversely affect long-term reliability. Do not operate the devices exceeding the absolute maximum rating, over rating causes damage to the unit(s).

PEAK Application Support: For more information regarding the EMC or other technical requests please feel free to contact our Application Support Team by email peak@peak-electronics.de or phone +49(0)6135-70260.

The information & specifications contained in this data sheet are believed to be corrected at time of publication. PEAK electronics accepts no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subjected to change without notice. No rights under any patent accompany the sale of any such products or information contained herein.