

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 with very low Standby Current
- 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.	5Vin: 6 24Vin: 40
Start up Time	mS, typ.	5
Input Current No Load	mA, typ.	5Vin: 0.5 24Vin:1.5
Input Current Full-Load	mA, min.	see product
Input Current Full-Load	mA, max.	see product
Recommended Input Fuse		(5Vin) 1.2/1.5/1.8/2.5Vout: 2A (24Vin) 1.2/1.5/1.8Vout: 1.6A 2.5/3.3/5/6.5Vout: 2.5A 9/12/15Vout: 3.15A
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 Full Load	mA, max.	see product
Line Regulation	%, typ.	±0.5
Load Regulation (0% to 100%)	%, max.	5Vin: ±1.0 24Vin, ≤ 3.3V: ±1.5 24Vin, ≥ 5Vout: ±1.0
Load Regulation (10% to 100%)	%, max.	24Vin: ±1.0
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
Capacitive Load @FL	µF, max.	see product

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OUTPUT SPECIFICATIONS

Transient Recovery Time	μs, typ.	150
Transient Response Deviation	%, max.	±3

Ripple and Noise: Measured with a 0.1μF MLCC. | Over Current Protection: Hiccup Mode, 5Vin=8.5A, 24Vin=3.5A | Transient Recovery Time tested by normal input voltage and 25% load step change (75%-50%-25% of Io).

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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	5Vin: 1200 24Vin: 410
Storage Humidity	%, rel H, max.	95
MTBF (MIL-HDBK-217F) at 25°C	Mhrs, min.	5Vin: >16 24Vin: >2.6
Operating Temperature	°C	-40 ~ +100 (see Derating curve)
Storage Temperature	°C	-55 ~ +125
Thermal Impedance	°C / W, min.	34 (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		0.46x0.46mm Copper Matte tin-coated
Potting Material		Silicon (UL94V-0 rated)
Weight	g	2.4
Dimension	mm	14.0 x 7.5 x 10.1
Dimension	inch	0.55 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

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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.
PSR2M-051R2S	5 (3-5.5)	889	507	1.2	2000	4200	90	86
PSR2M-051R5S	5 (3-5.5)	1099	613	1.5	2000	3700	91	89
PSR2M-051R8S	5 (3-5.5)	1304	727	1.8	2000	3300	92	90
PSR2M-052R5S	5 (3.8-5.5)	1385	978	2.5	2000	1800	95	93
PSR2M-241R2S	24 (4.6-36)	614	88	1.2	2000	2500	85	76
PSR2M-241R5S	24 (4.6-36)	758	108	1.5	2000	2000	86	77
PSR2M-241R8S	24 (4.6-36)	889	125	1.8	2000	1600	88	80
PSR2M-242R5S	24 (4.6-36)	1208	165	2.5	2000	1200	90	84
PSR2M-243R3S	24 (4.75-36)	1527	213	3.3	2000	900	91	86
PSR2M-2405S	24 (6.5-36)	1637	312	5	2000	600	94	89
PSR2M-246R5S	24 (9-36)	1520	393	6.5	2000	470	95	92
PSR2M-2409S	24 (12-36)	153	538	9	2000	330	96	93
PSR2M-2412S	24 (15-36)	1684	725	12	2000	270	95	92
PSR2M-2415S	24 (18-36)	1736	887	15	2000	200	96	94

