PSB Series Data Sheet
3 to 8 A Switching Regulators

Input voltage up to 144 VDC
Single output of 5.1 to 48 VDC
No input-to-output isolation

RoHS Compliant

Features

- RoHS lead solder exemption compliant
- Efficiency up to 96%
- Low input-output differential voltage
- No derating over temperature

Model Selection

Output $V_{o\,nom}$ [VDC]	Output $I_{o\,nom}$ [A]	Input voltage V_i [VDC]	Rated power $P_{o\,tot}$ [W]	Efficiency η [%]	Type	Options
5.1	4 (5)[1]	15 - 144	25.5	80	PSB 5A4-7iR	-9, L, P, C
5.1	6	8 - 80	30.6	81	PSB 5A6-7iR	-9, L, P, C
5.1	7	7 - 40	35.7	84	PSB 5A7-7iR	-9, L, P, C
5.1	8	7 - 40	40.8	81	PSB 5A8-2	iR-Package
12	3 (4)[1]	18 - 144	48	89	PSB 123-7iR	-9, L, P, C
12	5	15 - 80	60	90	PSB 125-7iR	-9, L, P, C
12	6	15 - 40	72	90	PSB 126-2	iR-Package
15	3 (4)[1]	22 - 144	60	90	PSB 153-7iR	-9, L, P, C
15	5	19 - 80	75	92	PSB 155-7iR	-9, L, P, C
15	6	15 - 40	90	92	PSB 156-2	iR-Package
24	3 (4)[1]	31 - 144	96	94	PSB 243-7iR	-9, L, P, C
24	5	29 - 80	120	95	PSB 245-7iR	-9, L, P, C
24	6	29 - 60	144	95	PSB 246-2	iR-Package
36	3 (4)[1]	44 - 144	144	90	PSB 153-7iR	-9, L, P, C
36	5	42 - 80	180	92	PSB 155-7iR	-9, L, P, C
48	3 (4)[1]	58 - 144	192	96	PSB 483-7iR	-9, L, P, C

[1] For V_i ≤80V

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Changing the Shape of Power

Input

Input voltage		refer to selection chart
No load input current		≤50 mA

Output

Efficiency	$V_{i\,nom}$, $I_{o\,nom}$	up to 96%
Output voltage setting accuracy	$V_{i\,nom}$, $I_{o\,nom}$	±0.6% $V_{o\,nom}$
Output voltage switching noise	IEC/EN 61204, total	typ. 0.3%
Line regulation	$V_{i\,min}$ - $V_{i\,max}$, $I_{o\,nom}$	typ. ±0.3%
Load regulation	$V_{i\,nom}$, 0 - $I_{o\,nom}$	typ. 0.25%
Minimum load	not required	0 A
Current limitation	rectangular U/I characteristic	typ. 110% $I_{o\,nom}$
Operation in parallel	by current limitation	

Protection

Input reverse polarity	with external fuse (built-in fuse with option C installed)	
Input undervoltage lockout		typ. 80% $V_{i\,min}$
Input transient protection	suppressor diode	
Output	no-load, overload and short circuit proof	
Output overvoltage	suppressor diode in each output	typ. 150% $V_{o\,nom}$

Safety

Approvals	EN 60950, UL 1950, CSA C22.2 No. 950	
Protection degree		IP 20
Electric strength test voltage	I/case and O/case	500/750/1500 VDC

EMC

Electrostatic discharge	IEC/EN 61000-4-2	
Electromagnetic field	IEC/EN 61000-4-3	
Electr. fast transients/bursts	IEC/EN 61000-4-4	
Surge	IEC/EN 61000-4-5	
Conducted disturbances	IEC/EN 61000-4-6	
Electromagnetic emissions	CISPR 22/EN 55022	

Environmental

Operating ambient temperature	-2, $V_{i\,nom}$, $I_{o\,nom}$, convection cooled	–10 to 50°C
Operating case temperature T_C	-2, $V_{i\,nom}$, $I_{o\,nom}$	–10 to 80°C
Storage temperature	-2, non operational	–25 to 100°C
Operating ambient temperature	-7, $V_{i\,nom}$, $I_{o\,nom}$, convection cooled	–25 to 71°C
Operating case temperature T_C	-7, $V_{i\,nom}$, $I_{o\,nom}$	–25 to 95°C
Storage temperature	-7, non operational	–40 to 100°C
Damp heat	IEC/EN 60068-2-3	
Vibration, sinusoidal	IEC/EN 60068-2-6	
Shock	IEC/EN 60068-2-27	
Bump	IEC/EN 60068-2-29	
Random vibration	IEC/EN 60068-2-64	
MTBF	MIL-HDBK-217	

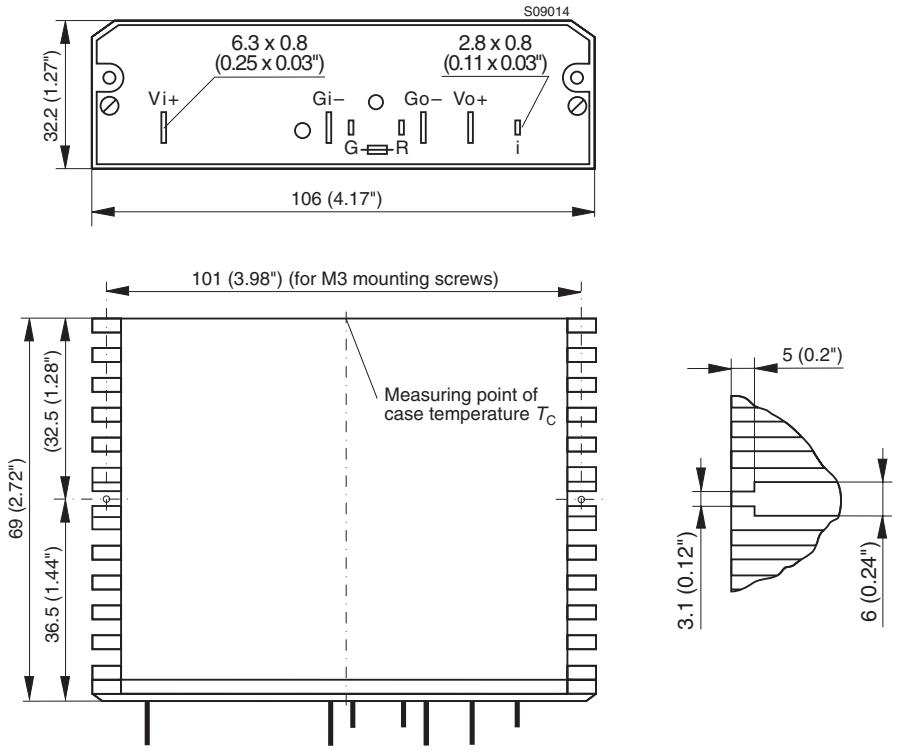
Options

Extended temperature range	–40 to 71°C, ambient, operating	-9
Inhibit, TTL input, output enabled if left open		i
Output voltage adjustment	0 - 108% $V_{o\,nom}$	R
Additional internal input filter		L
Output voltage adjustment	±8% $V_{o\,nom}$	P
Thyristor crowbar on output		C

Mechanical data

Tolerances ±0.3 mm (0.012") unless otherwise indicated.

European Projection



Accessories

Isolation pads for easy and safe PCB mounting
Ring core chokes for ripple and interference reduction