

Features

- Powers SLICs and RSLICs
- Overcurrent protection
- Surface mount design
- Non-isolated output
- Ultraquiet outputs
- Superb transient response
- 10 REN capability
- Compact design
- Simplifies assembly & test
- Fast time-to-market
- Eliminates ALEL caps
- U.S. patent 6,195,273

SPT5504Q SLIC Power Module

Input Specifications

Voltage	4.75 VDC Min. 5 VDC Typ. 5.25 VDC Max.
Current	
No Load	160 mA Typ. 180 mA Max.
IBAT1 = 100 mA	1,550 mA Typ. 1,600 mA Max.
IBAT2 = 100 mA	800 mA Typ. 840 mA Max.
Remote Enable	
Disabled	10 mA Typ. 20 mA Max.
Low = Enable	0.4 VDC Max. (open = enable)
High = Disable	3 VDC Min. (source ≤ 1 mA)

Output Specifications

Power	7 W Max.
Voltage	
VBAT1	-63 V Min. -60 V Typ. -58 V Max.
VBAT2 (Two Outputs)	-25 V Min. -24 V Typ. -23 V Max.
Ripple Voltage	
VBAT1 (IBAT1 = 50 mA)	15 mV Typ. 30 mV Max.
VBAT2 (IBAT2 = 50 mA)	5 mV Typ. 20 mV Max.
Current	
IBAT1	0 to 100 mA 10 REN (2 s on, 4 s off) 120 mA Min. (trip < 150 ms)
IBAT2	0 to 100 mA (50 mA each output)
VBAT2 Load Regulation	
(IBAT2 = 0 to 50 mA)	0.5 mV/mA Typ. 1 mV/mA Max.
VBAT2 Setpoint Accuracy	2 % Typ. 4 % Max.
Cross Regulation (IBAT1 = 0 to 100 mA)	
	0.1 mV/mA Typ. 0.2 mV/mA Max.
Temperature Coefficient (T -25 °C)	
VBAT1	-20 mV/°C Typ. -40 mV/°C Max.
VBAT2	1.2 mV/°C Typ. 4 mV/°C Max.

General Specifications

MBTF	1,600 kHrs Typ. Bellcore TR332 (40 °C)
Operating Temperature	
0 LFM	0 to +70 °C
Storage Temperature	-55 to +125 °C

General Information

The SPT5504Q is a member of Bourns' ringing SLIC power module family. The output voltages provide low-noise operation for very quiet off-hook conditions and on-hook transmissions. The SPT5504Q is capable of 7 W total output power, with up to 100 mA available from each output rail. The part is available in a surface mount configuration. The compact design

provides a small footprint, minimizing real estate usage on the main board.

The SPT5504Q is a robust design that meets the electrical and environmental specifications for powering RSLICs. By integrating the entire power solution, the OEM customer saves time and money in engineering, debugging, purchasing hard-to-source components, test and inventory.

Output Decoupling

Although not specifically required for proper/specified operation of the SPT5504Q, external decoupling capacitors may be employed to reduce noise and interaction with adjacent circuits. Output decoupling can be achieved by placing 0.1 μ F ceramic caps at the load. Note that larger cap values can substantially increase the start-up currents drawn from the 5 V source.

Fault Protection

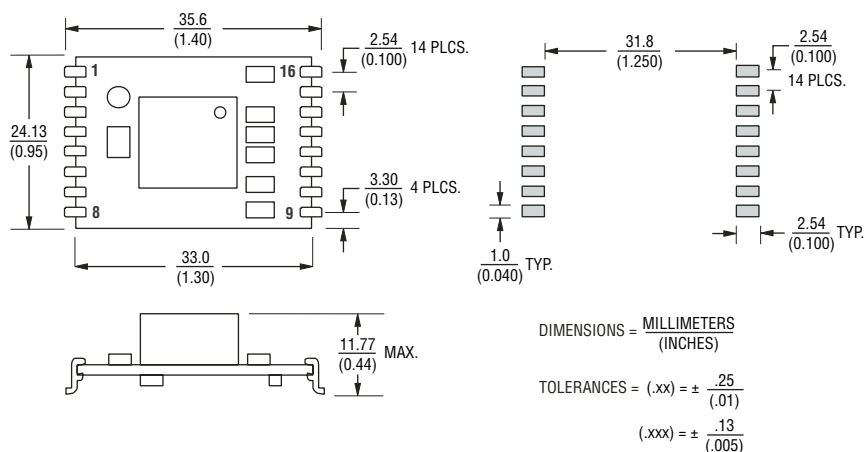
- F1 may be used in distributed systems to isolate single-board failures.
- F1 should be ≥ 2 A, $i^2t \geq 0.2$ A² sec, $R \geq 25$ m Ω .

Input Decoupling

Local input decoupling is recommended to reduce the apparent source impedance to the SPT5504Q.

- C2 0.1 μ F, X7R ceramic
C1 100 μ F, 10 V, low ESR tantalum (AVX TPS series or Kemet T495 series).

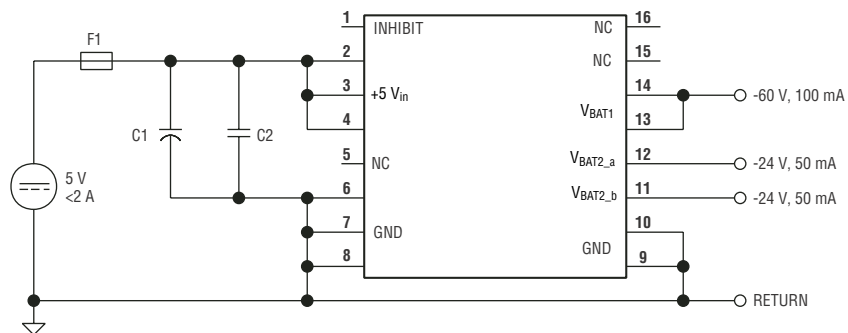
Product Dimensions



SPT5504Q SLIC Power Module

BOURNS®

Product Schematic



RECOMMEND SOLID GROUND PLANE ON COMPONENT SIDE OF MOTHER BOARD UNDER SPT5504Q.

PIN DESCRIPTIONS:

5 V _{in}	4.75-5.25 VDC input, <2 A
V _{BAT1}	-60 V, 100 mA output
V _{BAT2}	-24 V, 2 x 50 mA outputs
GND	Common input and output returns
Inhibit	Logic level remote inhibit (>3.0 V, source 1 mA). Enabled when open or <0.4 V.
NC	No connection



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