

## Features

- Powers ringing SLICs
- Overcurrent protection
- Surface mount design
- Superior transient response
- Non-isolated outputs
- Ultraquiet outputs
- 10 REN capability
- Compact design
- Simplifies assembly & test
- Fast time-to-market
- Remote inhibit
- Eliminates ALEL caps
- Patent 6,195,273

## SPT5504C SLIC Power Module

### Input Specifications

Voltage .....	4.75 VDC Min. 5 VDC Nom. 5.25 VDC Max.
Current	
No Load .....	120 mA Nom. 150 mA Max.
IBAT1 = 100 mA .....	1920 mA Nom. 1980 mA Max.
IBAT2 = 100 mA .....	750 mA Nom. 780 mA Max.
Disabled .....	20 mA Max.
Remote Enable	
Low = Enable	
.....	0.4 VDC Max. (open = enable)
High = Disable	
.....	4.0 VDC Min. (source $\leq$ 1 mA)

### Output Specifications

Power .....	7 W
VBAT1	
Voltage .....	-74 V Min. -72 V Nom. -70 V Max.
Current .....	0 to 100 mA 10 REN (2 s on, 4 s off) 120 mA Min. (trip < 150 ms)
Ripple Voltage .....	15 mV Nom. 40 mV Max. (IBAT1 = 50 mA)
Temperature Coefficient (T -25 °C)	
.....	-25 mV/°C Nom. -40 mV/°C Max.
VBAT2	
Voltage (Two 50 mA Outputs)	
.....	-25 V Min. -24 V Nom. -23 V Max.
Current .....	0 to 100 mA
Ripple Voltage .....	5 mA Nom. 20 mA Max. (IBAT2 = 50 mA)
Temperature Coefficient (T -25 °C)	
.....	1.2 mV/°C Nom. 4 mV/°C Max.
VBAT2 Load Regulation (IBAT2 = 0 to 50 mA)	
.....	0.5 mV/mA Nom. 1 mV/mA Max.
VBAT2 Setpoint Accuracy	
.....	2 % Nom. 4 % Max.
Cross Regulation (IBAT1 = 0 to 100 mA)	
.....	0.1 mV/mA Nom. 0.2 mV/mA Max.

### General Specifications

MBTF .....	2,100 kWhrs Nom. Bellcore TR332 (40 °C)
Operating Temperature	
0 LFM .....	-40 to +85 °C
Storage Temperature .....	-55 to +125 °C

### General Information

The SPT5504C is a member of Bourns Switch Power SLIC Power module family. The output voltages provide low-noise operation for very quiet off-hook conditions and on-hook transmissions. The SPT5504C is capable of 7 W total output power, with up to 100 mA available from each output rail.

The SPT5504C's easy to use surface

mount design and compact footprint minimize the board space dedicated to power (less than 1.4 in<sup>2</sup>). Its robust design ensures reliable power and eliminates the need for Aluminum Electrolytic capacitors. 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 SPT5504C, external decoupling capacitors may be employed to reduce noise and interaction with adjacent circuits. Output decoupling can be achieved by placing 0.1  $\mu$ 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

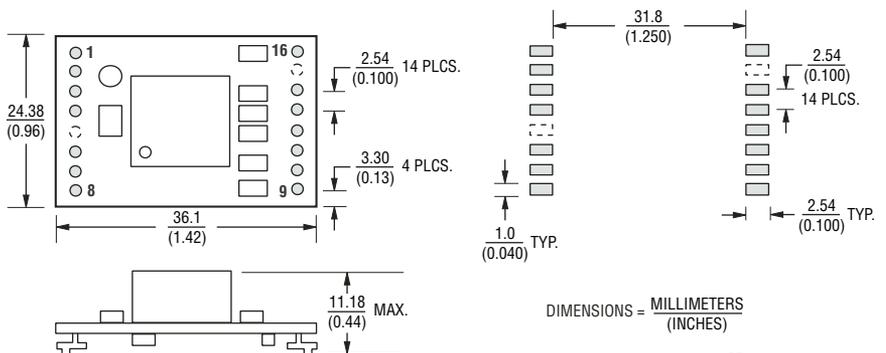
- F1 may be used in distributed systems to isolate single-board failures.
- F1 should be  $\geq 2.5$  A,  $i^2t \geq 0.2$  A<sup>2</sup> sec,  $R \leq 25$  m $\Omega$ .

### Input Decoupling

Local input decoupling is recommended to reduce the apparent source impedance to the SPT5504C.

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

### Product Dimensions



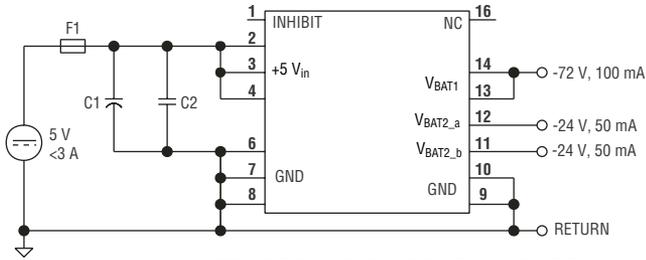
DIMENSIONS = MILLIMETERS  
(INCHES)

TOLERANCES = (.xx)  $\pm$  .25  
(.01)  
(.xxx)  $\pm$  .13  
(.005)

# SPT5504C SLIC Power Module

**BOURNS®**

## Product Schematic



RECOMMEND SOLID GROUND PLANE ON COMPONENT SIDE OF MOTHER BOARD UNDER SPT5504C.

### PIN DESCRIPTIONS:

5 V <sub>in</sub>	4.75-5.25 VDC input, <math><3\text{ A}</math>
V <sub>BAT1</sub>	-72 V, 100 mA output
V <sub>BAT2</sub>	-24 V, 2 x 50 mA outputs
GND	Common input and output returns
Inhibit	Logic level remote inhibit (>4.0 V, source 1 mA). Enabled when open or <math><0.4\text{ V}</math>.
NC	No connection



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