

## 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

## SPT5204QL SLIC Power Module

### Input Specifications

Voltage	10 VDC Min.
	12 VDC Nom.
	15 VDC Max.
Current (at 12 Vin)	
No Load	48 mA Nom.
	55 mA Max.
IBAT1 = 100 mA	720 mA Nom.
	750 mA Max.
IBAT2 = 100 mA	320 mA Nom.
	340 mA Max.

### Output Specifications

Power	7 W
VBAT1	
Voltage	-65 V Min.
	-63 V Nom.
	-61 V Max.
Current	0 to 100 mA
	10 REN (2s on, 4s off)
	120 mA Min. (trip < 150 ms)
Ripple Voltage	40 mV Nom.
	(IBAT1 = 50 mA)
Temperature Coefficient (T -25 °C)	
	9 mV/°C Nom.
	25 mV/°C Max.
VBAT2	
Voltage (Two Outputs)	-25 V Min.
	-24 V Nom.
	-23 V Max.
Current	0 to 100 mA
	(50 mA each output)
Ripple Voltage	20 mV Nom.
	(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	1,570 kHrs Nom.
	Bellcore TR332 (40 °C)
Operating Temperature	
0 LFM	-40 to +70 °C
100 LFM	-40 to +85 °C
Storage Temperature	-55 to +125 °C

### General Information

The SPT5204QL is a member of Bourns Switch Power ringing SLIC power module family. The output voltages provide low-noise operation for very quiet off-hook conditions and on-hook transmissions. The SPT5204QL 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 SPT5204QL 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 SPT5204QL, external decoupling capacitors may be employed to reduce noise and interaction with adjacent circuits. Output decoupling can be achieved by placing 0.1 µF ceramic caps at the load.

### Input Decoupling

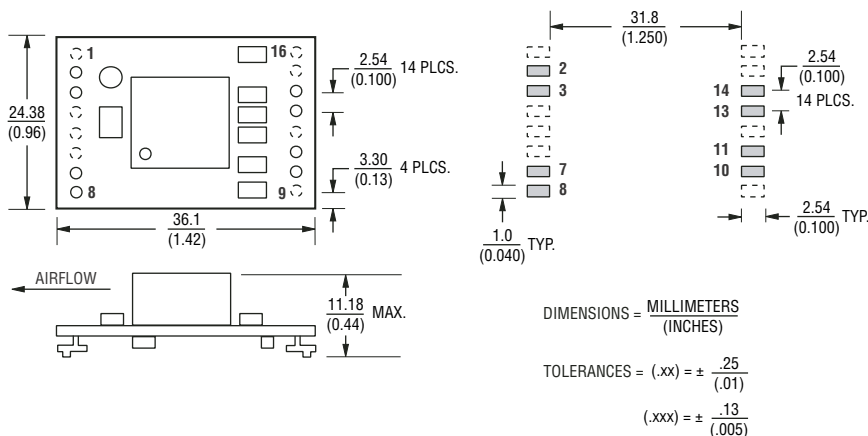
Local input decoupling is recommended to reduce the apparent source impedance to the SPT5204QL.

- C2 0.1 µF, X7R ceramic  
C1 3 x 33 µF, 25 V, low ESR tantalum (AVX TPS series or Kemet T495 series).

### Fault Protection

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

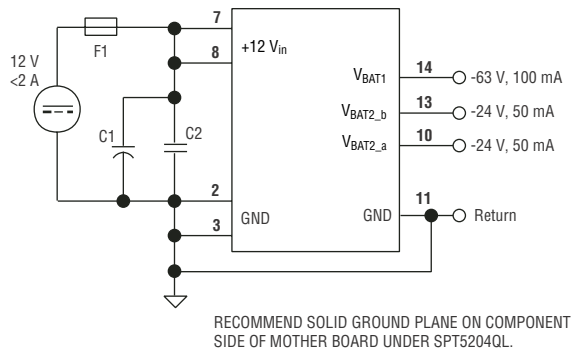
### Product Dimensions



## SPT5204QL SLIC Power Module

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### Product Schematic

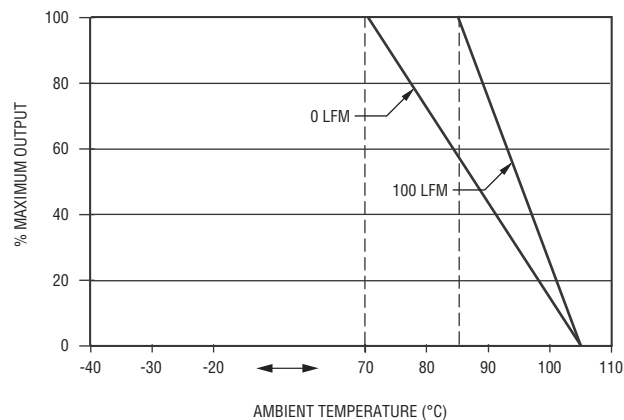


#### PIN DESCRIPTIONS:

12 V <sub>in</sub>	10-15 VDC input, <2 A
V <sub>BAT1</sub>	-63 V, 100 mA
V <sub>BAT2</sub>	-24 V, 2 x 50 mA outputs
GND	Common input and output returns

### Temperature Derating

V<sub>in</sub> = 12 V; V<sub>B1</sub> = 15 mA; V<sub>B2</sub> = 75 mA (3 off-hook, 1 ringing, 5 REN)  
or V<sub>in</sub> = 12 V; V<sub>B1</sub> = 3 mA; V<sub>B2</sub> = 100 mA (4 off-hook)



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