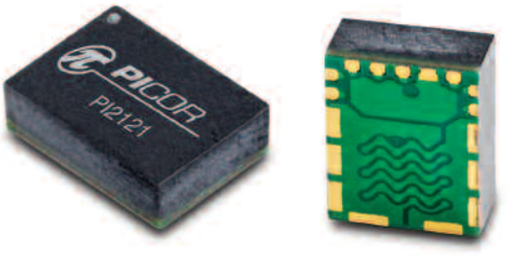
PI212 Cool-ORing Series

FULL FUNCTION ACTIVE ORING SOLUTIONS

FEATURES

- Combines a high-speed ORing MOSFET controller and a ery low on-state resistance MOSEFET
- Very small, high-density fully optimised solution providing simple PCB layout with 50% space savings
- Fast dynamic response to power source failures, with 160 ns reverse current turn-off delay time
- Accurate sensing capability to indicate system fault conditions
- Programmable under and overvoltage funcitgons
- Overtemperature fault detection
- Adjustable reverse current blanking timer
- Master/Slave I/O for paralleling
- Active low fault flag output



PRODUCT DESCRIPTION

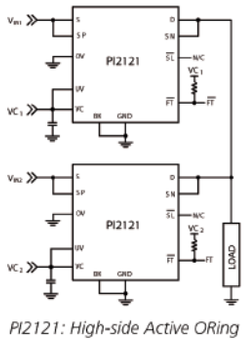
The Cool-ORing PI2121-PI2127 series are complete full function Active ORing solutions with a high-speed ORing MOSFET controller and a very low on-state resistance MOSFET designed for use in redundant power system architecture. The Cool-ORing solutions are offered in an extremely small, thermally enhanced LGA package and can be used in low voltage (≤5 V bus, ≤9.6 bus, ≤12 V and 48 V bus respectively) high side Active ORing applications. The P12121/3/5 enable extremely low power loss with fast dynamic response to fault conditions, critical for high-availability systems. A master/slave feature allows the parallelling of P12121/3/5 solutions for high-current, Active ORing requirements.

The PI2121/3/5 provide very high efficiency and low power loss during steady state operation, while achieving high-speed turn-off of the internal MOSFET during input power source fault conditions, that cause reverse current flow. The PI2121/4\3/5 provide an active low fault flag output to the system during excessive forward current, light load, reverse current, over-voltage, under-voltage and over-temperature fault conditions. A Temperature sensing function indicates a fault if the maximum junction temperature exceeds 1600ºC. The undervoltate and overvoltage thresholds are programmable via an external resistor divider.

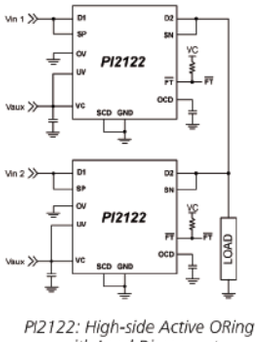
PART NUMBER	PACKAGE 17-PIN LGA	VOLTAGE RATING	CURRENT HANDLING	TARGET APPLICATION	INTERNAL MOSFET ON-STATE RESISTANCE	BIAS SUPPLY	TURN-OFF DELAY TIME
PI2121-00LGIZ	5x7mm	8V (max)	24 A (max)	≤ 5 V Bus	1.5mΩ (typ)	4.5 V- 13.2 V	160 ns (typ.)
PI2123-00LGIZ	5x7mm	15 V (max)	15 A (max)	≤ 9.6 V Bus	3mΩ (typ)	4.5 V- 13.2 V	160 ns (typ.)
PI2125-00-LGIZ	5x7mm	30 V (max)	12 A (max)	≤ 12 V Bus	5.5mΩ (typ)	4.5 V- 13.2 V	160 ns (typ.)
PI2122-00-LGIZ	5x7mm	7 V (max)	12 A (max)	≤ 5 V Bus	6 mΩ (typ)	4.5 V- 13.2 V	140 ns (typ.)
PI2127-00-LGIZ	7x8mm	60 V (max)	12 A (max)	≤ 48 V Bus	8.5 mΩ (typ)	4.5 V- 13.2 V	80 ns (typ.)

Note: For evaluation boards contact Powerbox sales.
Shipment Packaging - Tape and Reel

Typical Applications

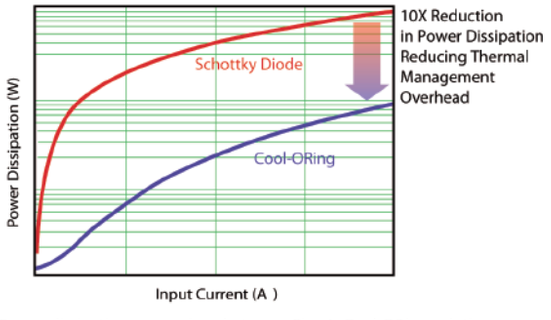


PI2121: High-side Active ORing



PI2122: High-side Active ORing with Load Disconnect

PI2121 / PI2123 / PI2125 Performance



Power dissipation comparison between Picor's Cool-ORing solutions versus industry standard Schottky diode solutions