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*Cylindrical SMC Series resistors provide cost-saving replacements for wirewound devices...*

## **IRC DEVELOPS “CAPPED” SURFACE MOUNT POWER RESISTOR DESIGNED TO DELIVER SUPERIOR THERMAL CYCLING PERFORMANCE**

BOONE, NC (May 3, 2005) – For design engineers facing thermal cycling issues with power components in high-temperature environments, resistor manufacturer IRC has developed a “capped” version of its proven cylindrical power resistor that delivers superior thermal compliance and thermal isolation from circuit boards. Designated the SMC Series, these rugged power Metal Glaze™ resistors are available in ratings up to 2 watts.

According to David Winkler, product manager for IRC’s Wirewound and Film Technologies Division, the SMC Series resistors were designed to solve the problem of thermal mismatch between FR4 PC boards and ceramic components. “Adding a compliant metal cap to the ends of our surface mount cylindrical power resistors gives them the compliance needed to address thermal management issues that our customers were experiencing with ceramic chip resistors,” he explained. “The capped ends of the SMC Series resistors not only provide a closer thermal match to the PC board, but they also raise the device up slightly to provide better airflow and result in lower overall board temperature.”

Applications for the SMC Series resistors include high power-density applications, such as underhood automotive control units, GFI control circuits, as well as any application where high thermal stress is present, Winkler said. The resistors can be a potential cost saving replacement for bulky surface mount wirewound devices in certain applications.

The SMC1 Series resistors are rated for 1W at 70°C, with resistance values from 0.1Ω to 1MΩ, in standard tolerances of ±1%, ±2% and ±5%, with TCRs as low as ±25ppm/°C. The SMC2 Series resistors are rated for 2W at 25°C, with resistance values from 0.2Ω to 2.2MΩ, in standard tolerances of ±1%, ±2% and ±5%, with TCRs as low as ±25ppm/°C. Operating temperature range is from -55°C to +150°C. All devices are RoHS compliant and suitable for high temperature soldering processes.

Based on IRC's proven family of cylindrical Metal Glaze™ power resistors, the SMC Series devices feature a MetalGlaze™ thick film element fired at 1,000°C to a solid ceramic substrate and a high temperature dielectric coating that is impervious to degradation in high-moisture environments. In addition to the compliant metal caps, the cylindrical design of the SMC Series provides excellent heat dissipation and much higher surge/pulse capability than comparably rated flat chips, with a significantly lower profile than traditional surface mount wirewound devices.

As with all IRC resistors, devices with specifications beyond these specifications can be made to meet specific customer requirements.

Typical pricing for the SMC Series resistors is \$0.15 each in quantities of 5,000, and they are available with lead times from stock to 6 weeks.

For additional information about the SMC Series resistors, contact IRC Wirewound and Film Technologies Division at 828-264-8861, via mail at P.O. Box 1860 Boone, N.C. 28607, e-mail at [waft.sales@irctt.com](mailto:waft.sales@irctt.com), or visit IRC on the web at [www.irctt.com](http://www.irctt.com).

IRC Inc. is a leading international manufacturer of advanced film, metal glaze and wirewound resistive products with facilities in Boone, N.C.; Smithfield, N.C.; Barbados, West Indies; and Corpus Christi, Texas. IRC is part of TT electronics plc, a leading global electronics company manufacturing a range of specialist products, including electronic passive components, electromechanical and electronic assemblies and sensor modules for the automotive, telecommunications, computer, medical and aerospace markets. TT electronics' Web site can be found at: [www.ttelectronics.com](http://www.ttelectronics.com).

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