

HIGH FREQUENCY MAGNETICS

Wideband Hybrid Signal Combiner & Splitter

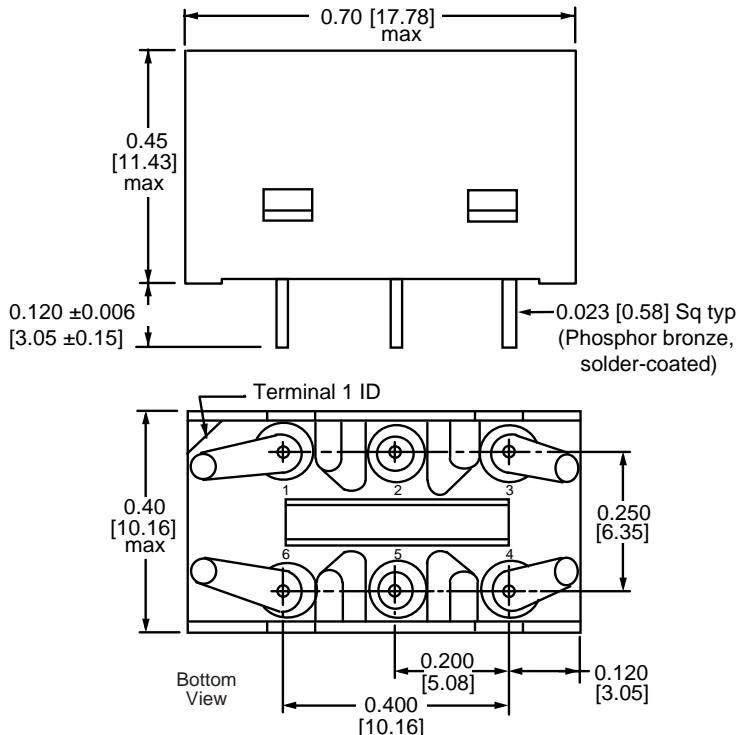
TM9923

- A wideband, equal-ratio hybrid transformer suitable for both analog and digital applications requiring signal splitting or combining
- Qualified per Bellcore TR-TSY-00357-1
- Meets IEC-695, 2-2 flammability requirements
- Compatible with standard printed-wiring board assembly and cleaning processes and machine placement
- Compatible with infrared (IR) reflow soldering processes so it can be used in mixed-assembly (wave and reflow) solder application

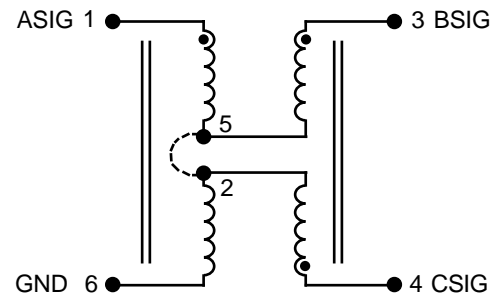
ELECTRICAL SPECIFICATIONS at 25° C

| Part Number | Impedance Ratio | Nominal Signal Split dB | 3dB Bandwidth typ | Pulse Rise Time ns typ |
|-------------|-----------------------------|------------------------------|------------------------------|------------------------|
| | (1 - 6) : (3 - 6) + (4 - 6) | ASIG to BSIG ASIG to CSIG | ASIG to BSIG ASIG to CSIG | |
| 2689J2 | 75Ω : 75Ω + 75Ω | 3.0 | 20 kHz - 800 MHz | 0.5 |

MECHANICAL



SCHEMATIC



HIGH FREQUENCY MAGNETICS

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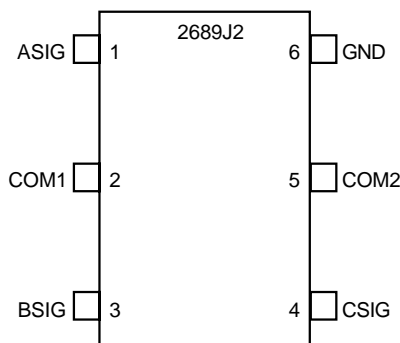
APPLICATIONS NOTES

The 2689J2 hybrid transformer operates with 75 Ω terminations over an extremely wide frequency spectrum (3 dB response: 20 kHz to 800 MHz). It can also be used as a pulse transformer with very fast pulses (typical rise time: 0.5 ns). The 2689J2 operates as either a signal splitter or a signal combiner. As a signal splitter, the transformer provides two identical output signals (which are in phase with each other) from a single input. Each of the two output signals is 3 dB down from the input signal (half the power of the input signal). There is a high degree of separation or transhybrid loss between the two output signals. As a signal combiner, the transformer provides a single output signal from two identical input signals (which are in phase with each other). The output signal has twice the power of either input signal.

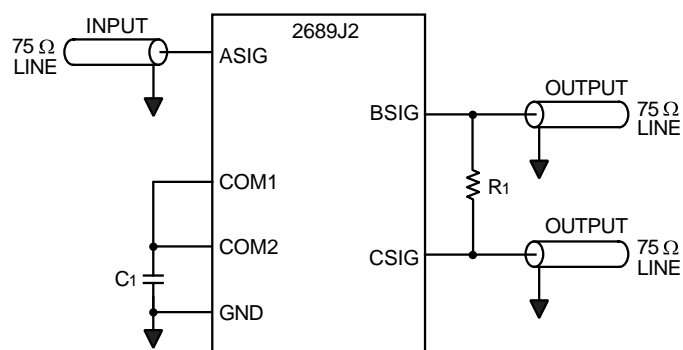
PIN DESCRIPTIONS AND TERMINATIONS

| Pin | Symbol | Name and Function |
|-----|--------|---|
| 1 | ASIG | A signal. Input for splitter configuration. Output for combiner application. |
| 2 | COM1 | Common point of transformer 1. Must be connected externally to COM2. |
| 3 | BSIG | B signal. Output for splitter configuration. Input for combiner application. |
| 4 | CSIG | C signal. Output for splitter configuration. Input for combiner application. |
| 5 | COM2 | Common point of transformer 2. Must be connected externally to COM1. |
| 6 | GND | Ground. Connect to circuit ground. |
| | R1 | 162 Ω external resistor. |
| | C1 | 7 pF external capacitor. |

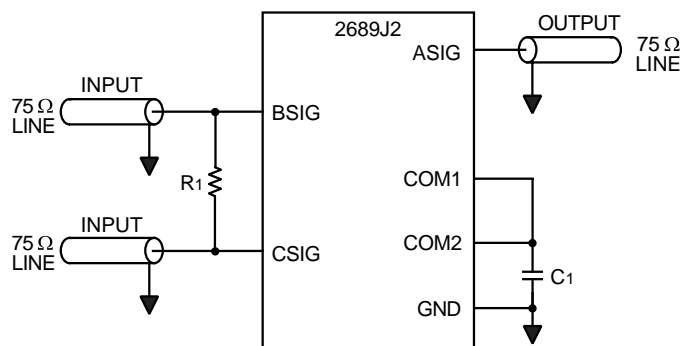
PIN DIAGRAM



SIGNAL SPLITTER



SIGNAL COMBINER



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