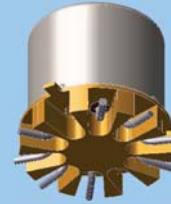


**HIGH REPEATABILITY,
Signal Integrity: 20Gbps
TO-5 RELAYS, DPDT**



SERIES	RELAY TYPE
SGSI800	Repeatable, Signal Integrity relay for high bit rate applications
SGSI803	Low Power Operating Coil, Repeatable, Signal Integrity relay for high bit rate applications

DESCRIPTION

The ultra miniature SGSI800/SGSI803 relays are designed to provide a practical surface-mount solution for high-speed digital applications. They are capable of transmitting high-speed signals with data rates up to 20 Gbps. The SGSI800 series has a lower profile than the SGSI803. The SGSI803 has a taller profile, but has lower coil operating power.

The SGSI800/SGSI803 features:

- High repeatability.
- Metal enclosure for EMI shielding.
- High isolation between control and signal paths.
- Highly resistant to ESD.

The following unique construction features and manufacturing techniques provide excellent resistance to environmental extremes and overall reliability.

- Uni-frame motor design provides high magnetic efficiency and mechanical rigidity.
- Minimum mass components and welded construction provide maximum resistance to shock and vibration.
- Advanced cleaning techniques provide maximum assurance of internal cleanliness.
- Gold-plated precious metal alloy contacts ensure reliable switching and signal fidelity.
- Hermetically sealed.
- Solder-Dipped Leads, RoHS compliant solder option available

CONSTRUCTION FEATURES

ENVIRONMENTAL AND PHYSICAL SPECIFICATIONS		
Temperature (Ambient)	Storage	-65°C to +125°C
	Operating	-55°C to +85°C
Vibration (Note 1)		10 g's to 500 Hz
Shock (Note 1)		30 g's, 6ms half sine
Enclosure		Hermetically sealed
Weight	SGSI800	0.09 oz. (2.55g) max.
	SGSI803	0.16 oz. (4.5g) max.

NOTE:

1. Relay contacts will exhibit no chatter in excess of 10 µsec or transfer in excess of 1 µsec.

**SERIES SGSI800
GENERAL ELECTRICAL SPECIFICATIONS (@25°C)**

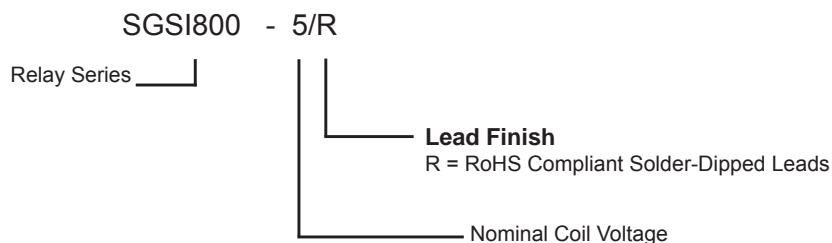
Contact Arrangement	2 Form C (DPDT)
Rated Duty	Continuous
Contact Resistance	0.15 Ω max.
Contact Load Rating	Resistive: 1Amp/28Vdc Low level: 10 to 50 μA @ 10 to 50 mV
Contact Life Ratings	5,000,000 cycles (typical) at low level contact load
Coil Operating Power	SGSI800: 450 mW typical at nominal rated voltage SGSI803: 200 mW typical at nominal rated voltage
Operate Time	SGSI800: 4.0 mS max. SGSI803: 6.0 mS max.
Release Time	3.0 mS max.
Intercontact Capacitance	0.4 pf typical
Insulation Resistance	1,000 MΩ min. between mutually isolated terminals
Dielectric Strength	350 Vrms (60 Hz) @ atmospheric pressure
Propagation Delay	62.3 ps typical

DETAILED ELECTRICAL SPECIFICATIONS (@25°C)

BASE PART NUMBERS (SGSI800)	SGSI800-5	SGSI800-12
Coil Voltage, Nominal (Vdc)	5.0	12.0
Coil Resistance (Ohms ±20%)	50	390
Pick-up Voltage (Vdc max.)	3.6	9.0

BASE PART NUMBERS (SGSI803)	SGSI803-5	SGSI803-12
Coil Voltage, Nominal (Vdc)	5.0	12.0
Coil Resistance (Ohms ±20%)	100	850
Pick-up Voltage (Vdc max.)	3.6	9.0

Teledyne Part Numbering System for SGSI800/SGSI803

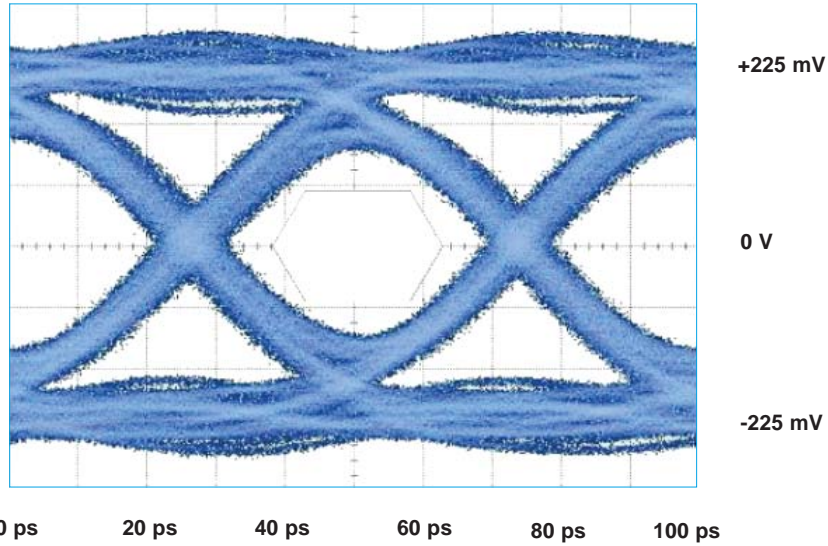

GENERAL NOTE:

PARTS ORDERED WITHOUT SUFFIX WILL BE SUPPLIED WITH (Sn60Pb40) SOLDER-COATED LEADS.

PARTS ORDERED WITH ROHS SOLDER-COATED LEADS WILL HAVE (Sn99.3/Cu0.7)



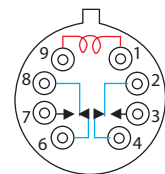
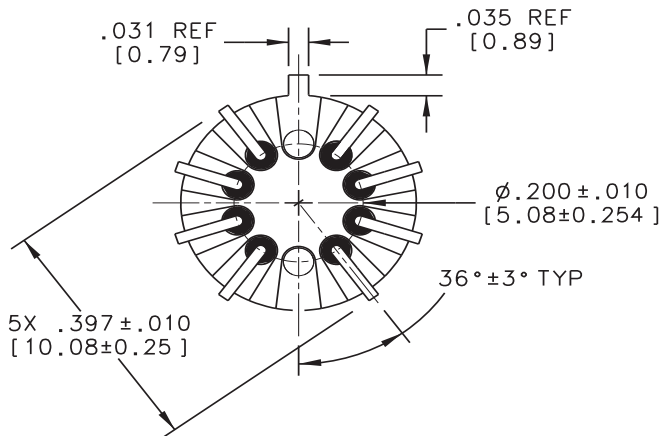
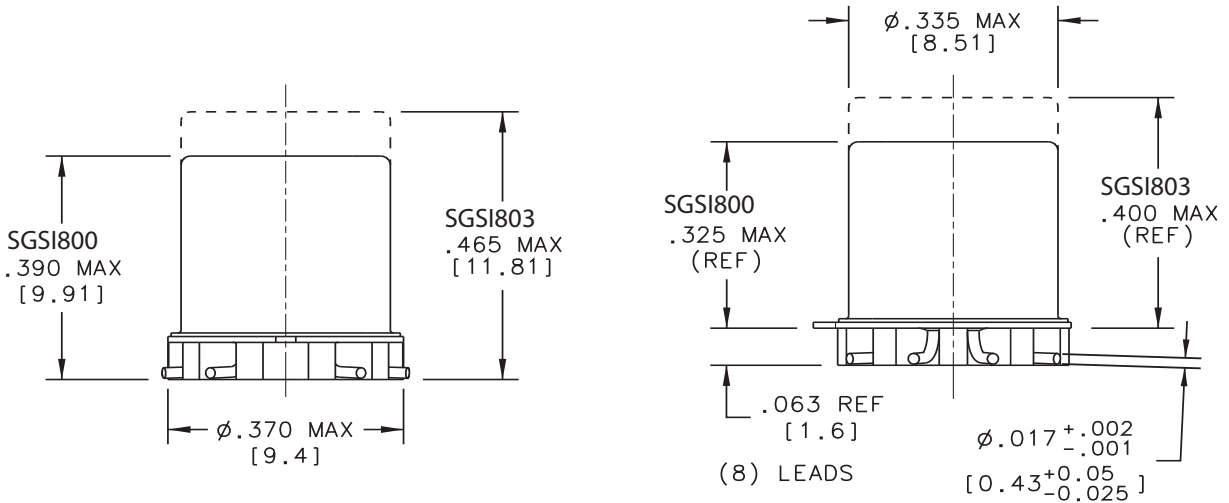
SERIES SGSI800/SGSI803
TYPICAL Single-Ended Signal Integrity Characteristics @ 20 Gbps



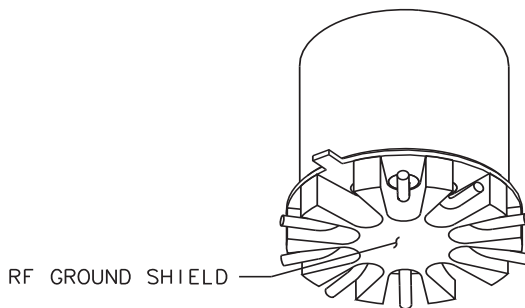
Bit Rate	Eye Height	Eye Width	Jitter _{p,p}
20 Gbps	144 mV	33.3 ps	12.67 ps

- **Pattern Generator Settings**
- 40 Gbps Random Pulse Pattern Generator
- $2^{31} - 1$ PRBS signal
- PRBS output of 500 mV_{p,p} (nominal)
- RF PCB effect (negligible) not removed from measurement
- Data shown is typical of both poles

**SERIES SGSI800
 OUTLINE DIMENSIONS**



SCHEMATIC DIAGRAM
 TERMINAL VIEW PIN NUMBERS
 ARE FOR REFERENCE ONLY
 NOT MARKED ON RELAYS



NOTE:

1. Dimensions are in inches, metric equivalents shown in [].