

# SCR

**C103**

**SENSORS —**

- Temperature
- Pressure
- Dryness
- Proximity
- Voltage
- Current

**CONTROLS —**

- Small motors
- Small lamps
- Remote

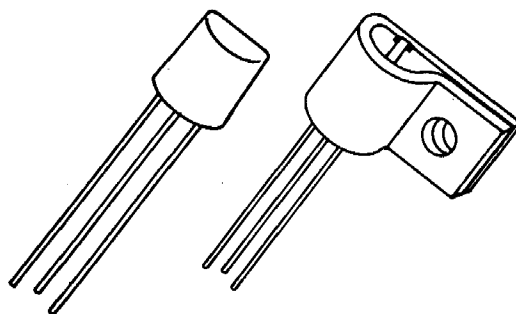
**SWITCHING —**

- Solid-state relay
- Relay driver
- Counter
- Low power inverter

**AMPLIFIERS — (gate)**

**TIMERS**

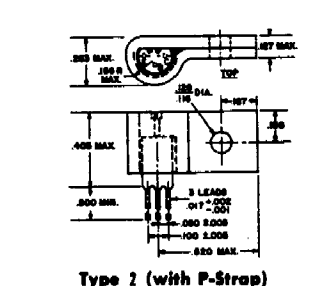
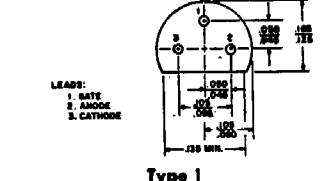
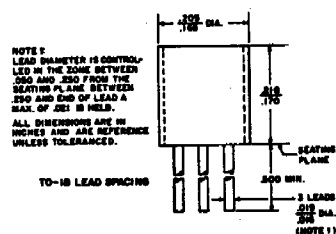
**LOGIC CIRCUITS**



**120V AC LINE OPERATION**

**FEATURES:**

- 200  $\mu$ A Gate sensitivity
- 8-amp surge
- 30-thru 200-volt selection
- Plastic TO-18 package
- Low  $V_F$
- High  $dv/dt$



**MAXIMUM ALLOWABLE RATINGS**

C103Y	30 Volts	30 Volts
C103YY	60 Volts	60 Volts
C103A	100 Volts	100 Volts
C103B	200 Volts	200 Volts

<sup>1</sup>R<sub>OK</sub> = 1000 ohms maximum.  
<sup>2</sup>Values apply for zero or negative gate voltage only.

RMS On-State Current, $I_{T(RMS)}$ (all Conduction Angles)	0.8 Amperes
Peak One Cycle Surge (non-rep) On-State Current, $I_{TSM}$	8.0 Amperes
Peak Gate Power Dissipation, $P_{GM}$	1.0 Watts for 8.3 msec.
Average Gate Power Dissipation, $P_{G(AV)}$	0.01 Watts
Peak Positive Gate Current, $I_{GM}$	0.5 Amperes
Peak Negative Gate Voltage, $V_{GM}$	8 Volts
Storage Temperature, $T_{STG}$	-65°C to +150°C
Operating Junction Temperature, $T_J$	-65°C to +125°C

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CHARACTERISTICS

				Units	Test Conditions
Peak Reverse and Off-State Current (All types)	$I_{RRM}$ or $I_{DRM}$	—	—	1.0	$T_C = +25^\circ C, R_{GK} = 1000$ ohms $V_{RRM} = V_{DRM} =$ Rated Value.
		—	—	50	$T_C = +125^\circ C, R_{GK} = 1000$ ohms $V_{RRM} = V_{DRM} =$ Rated Value.
DC Gate Trigger Current	$I_{GT}$	—	—	200	$T_C = +25^\circ C, V_D = 6Vdc,$ $R_L = 100$ ohms.
		—	—	500	$T_C = -65^\circ C, V_D = 6Vdc,$ $R_L = 100$ ohms.
DC Gate Trigger Voltage	$V_{GT}$	—	—	0.8	$T_C = +25^\circ C, V_D = 6Vdc,$ $R_L = 100$ ohms.
		—	—	1.0	$T_C = -65^\circ C, V_D = 6Vdc,$ $R_L = 100$ ohms.
		0.1	—	—	$T_C = +125^\circ C,$ Rated $V_{DRM},$ $R_L = 1000$ ohms.
Peak On-State Voltage	$V_{TM}$	—	—	1.5	$T_C = +25^\circ C, I_{TM} = 1.0A$ peak, 1 msec. wide pulse, Duty Cycle $\leq 2\%$
Holding Current	$I_H$	—	—	5.0	Anode source voltage = 12Vdc, $R_{GK} = 1000$ ohms. $T_C = +25^\circ C$
		—	—	10.0	$T_C = -65^\circ C$
Critical Rate of Rise of Off-State Voltage	$dv/dt$	—	20	—	$T_C = +125^\circ C,$ Rated $V_{DRM},$ $R_{GK} = 1000$ ohms.
Circuit Commutated Turn-Off Time	$t_q$	—	15	—	$T_C = +125^\circ C,$ rectangular current waveform. Rate of rise of current $< 10A/\mu sec.$ Rate reversal of current $< 5A/\mu sec.$ $I_{TM} = 1A$ (50 $\mu sec.$ pulse). Rep. Rate = 60 pps. $V_{RRM} =$ Rated, $V_{RX} = 15V$ Min., $V_{DRM} =$ Rated. Rate of Rise of reapplied off-state voltage = 20V/ $\mu sec.$ ; Gate Bias = 0 Volts, 100 Ohms (during turn-off time interval).
Steady-State Thermal Resistance	$R_{\theta JC}$	—	—	125	Junction-to-case (flat side of case is temp. ref. point).
	$R_{\theta JA}$	—	—	230	Junction-to-ambient (free convection).
	$R_{\theta JC}$	—	—	110	Junction to P-strap dissipator (rounded surface is temp. ref. point).
	$R_{\theta JA}$	—	—	170	Junction-to-ambient, with P-strap dissipator (free convection).

