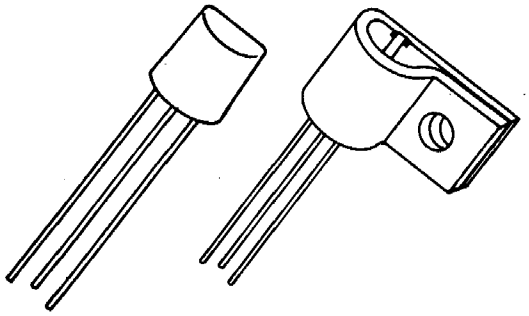
New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (201) 376-2922
(212) 227-6005
FAX: (201) 376-8960

SCR

C103



SENSORS —
- Temperature
- Pressure
- Dryness
- Proximity
- Voltage
- Current

CONTROLS —
- Small motors
- Small lamps
- Remote

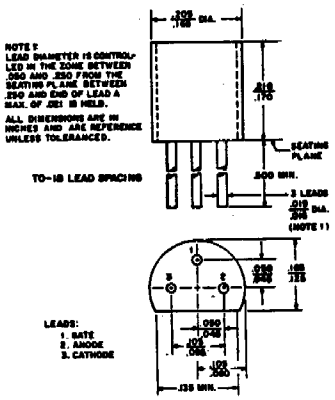
SWITCHING —
- Solid-state relay
- Relay driver
- Counter
- Low power inverter

AMPLIFIERS — (gate)

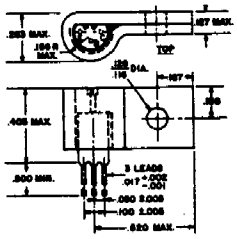
TIMERS

LOGIC CIRCUITS

120V AC LINE OPERATION



Type 1



Type 2 (with P-Strap)

FEATURES:

- 200 μA 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

[1] R_{GK} = 1000 ohms maximum.
[2] 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

New Jersey Semi-Conductor Products, Inc.

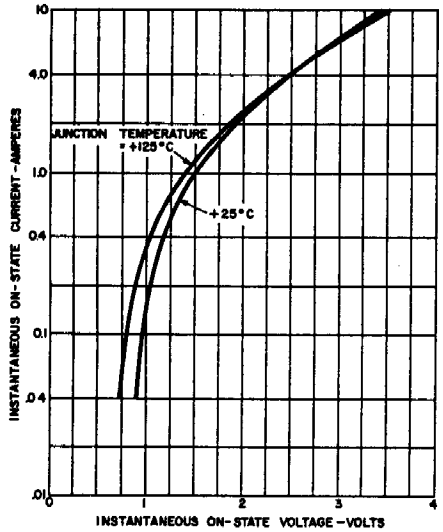
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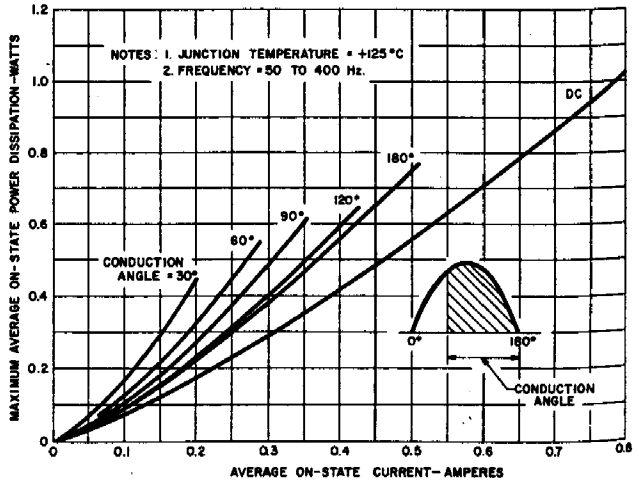
C103

CHARACTERISTICS

					Units	Test Conditions
Peak Reverse and Off-State Current (All types)	I_{RRM} or I_{DRM}	—	—	1.0	μA	$T_C = +25°C$, $R_{GK} = 1000$ ohms $V_{RRM} = V_{DRM}$ = Rated Value.
		—	—	50		$T_C = +125°C$, $R_{GK} = 1000$ ohms $V_{RRM} = V_{DRM}$ = Rated Value.
DC Gate Trigger Current	I_{GT}	—	—	200	μAdc	$T_C = +25°C$, $V_D = 6$Vdc, $R_L = 100$ ohms.
		—	—	500		$T_C = -65°C$, $V_D = 6$Vdc, $R_L = 100$ ohms.
DC Gate Trigger Voltage	V_{GT}	—	—	0.8	Vdc	$T_C = +25°C$, $V_D = 6$Vdc, $R_L = 100$ ohms.
		—	—	1.0		$T_C = -65°C$, $V_D = 6$Vdc, $R_L = 100$ ohms.
		0.1	—	—		$T_C = +125°C$, Rated V_{DRM}, $R_L = 1000$ ohms.
Peak On-State Voltage	V_{TM}	—	—	1.5	V	$T_C = +25°C$, $I_{TM} = 1.0$A peak, 1 msec. wide pulse, Duty Cycle ≦ 2%
Holding Current	I_H	—	—	5.0	mAdc	Anode source voltage = 12Vdc, $R_{GK} = 1000$ ohms. $T_C = +25°C$
		—	—	10.0		$T_C = -65C$
Critical Rate of Rise of Off-State Voltage	dv/dt	—	20	—	V/μsec	$T_C = +125°C$, Rated V_{DRM}, $R_{GK} = 1000$ ohms.
Circuit Commutated Turn-Off Time	t_q	—	15	—	μsec	$T_C = +125°$ C, rectangular current waveform. Rate of rise of current <10A/μsec. Rate reversal of current <5A/μsec. $I_{TM} = 1$A (50 μsec. pulse). Rep. Rate = 60 pps. V_{RRM} = Rated, $V_{RX} = 15$V Min., V_{DRM} = Rated. Rate of Rise of reapplied off-state voltage = 20V/μsec.; Gate Bias = 0 Volts, 100 Ohms (during turn-off time interval).
Steady-State Thermal Resistance	$R_{\theta JC}$	—	—	125	°C/W	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).



1. MAXIMUM ON-STATE CHARACTERISTICS



2. MAXIMUM ON-STATE POWER DISSIPATION FOR SINUSOIDAL CURRENT WAVEFORM