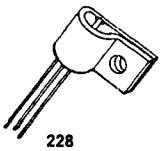
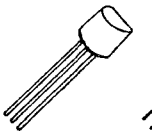
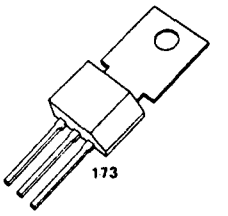


PHASE CONTROL SCR's
.5 TO 5 AMPERES





GE TYPE		C3	C103	C203	C5	C6	C7	–	C106	C107	C108
JEDEC		2N877-81[1]	–	2N5060-64	2N2322-29	–	2N2344-48	2N1595-99,A	–	–	–
ELECTRICAL SPECIFICATIONS											
VOLTAGE RANGE		30-200	30-200	30-400	25-400	25-400	25-200	50-400	15-600	15-600	15-600
FORWARD CONDUCTION											
$I_{T(RMS)}$	Max. RMS on-state current (A)	0.5	0.8	0.8	1.6	1.6	1.6	1.6	4.0	4.0	5.0
$I_{T(AV)}$	Max. average on-state current @ 180° conduction (A) @ T_C	0.32 @ 85°C	0.50 @ 25°C	0.50 @ 25°C	1.0 @ 85°C	1.0 @ 85°C	1.0 @ 55°C	1.0 @ 110°C	2.5 @ 30°C	2.5 @ 20°C	3.75 @ 30°C
I_{TSM}	Max. peak one cycle, non-repetitive surge current (A)	7	8	8	15	10	15	15	20	15	30
I^2t	Max. I^2t for fusing for > 1.5 msec (A^2 sec)	–	–	–	0.5	0.5	–	0.5	0.5	0.5	1
V_{TM}	Max. peak on-state voltage @ 25°C, 180° conduction, rated $I_{T(AV)}$ (V)	1.6	1.5	1.5	2.2	1.4	2	2	2.2	2.5	1.35
$R_{\theta JC}$	Max. internal thermal resistance, dc junction-to-case (°C/W)	80	125	75	10	10	–	–	10	10	10
I_H	Max. holding current @ 25°C (mA)	5	5	5	2	5	1	–	3	6	3
t_q	Typical turn-off time (μsec) @ max. T_J	15	15	15	40	40	20	40	40	40	40
	Maximum turn-off time (μsec @ 110°C)	–	–	–	–	–	–	–	100	100	100
$t_d + t_r$	Typical turn-on time (μsec @ 110°C)	1	1.4	1.4	1.4	1.4	1.4	1.2	1	1	1
di/dt	Max. rate-of-rise of turned-on current (A/μsec)	–	–	–	50	–	–	–	50	50	50
T_J	Junction operating temperature range (°C)	–65 to 125	–65 to 125	–65 to 125	–65 to 125	–40 to 125	–65 to 100	–65 to 150	–40 to 110	–40 to 110	–40 to 110
BLOCKING											
dv/dt	Typical critical rate-of-rise of off-state voltage, exponential to rated V_{DRM} @ max. rated T_J (V/μsec)	40	20	20	20	20	20	20	8	8	8
FIRING											
I_{GT}	Max. required gate current to trigger (μA) @ –65°C	300	500	500	350	–	75	–	–	–	–
	@ –40°C	–	–	–	–	–	–	–	500	–	500
	@ 25°C	200	200	200	200	1000	20	10,000	200	500	200
V_{GT}	Max. required gate voltage to trigger (V) @ –65°C	–	1	1	1	1	1	–	–	–	–
	@ –40°C	–	–	–	–	1	–	–	1	–	1
	@ 25°C	0.8	0.8	0.8	0.8	0.8	0.8	3	0.8	0.8	0.8
V_{GT}	Min. required gate voltage to trigger (V) @ 110°C	–	–	–	–	–	–	–	0.2	0.2	0.2
	@ 125°C	0.05	0.1	0.1	0.1	0.1	–	–	–	–	–
VOLTAGE TYPES											
Repetitive Peak Forward and Reverse Voltages											
15		–	–	–	–	–	–	–	C106Q1	C107Q1	C108Q1
25		–	–	–	2N2322 C5U	C6U	2N2344	–	–	–	–
30		2N877	C103Y	2N5060 C203Y	–	–	–	–	C106Y1	C107Y1	C108Y1
50		–	–	–	2N2323* C5F	C6F	2N2345	2N1595, A	C106F1	C107F1	C108F1
60		2N878	C103YY	2N5061 C203YY	–	–	–	–	–	–	–
100		2N879	C103A	2N5062 C203A	2N2324* C5A	C6A	2N2346	2N1596, A	C106A1	C107A1	C108A1
150		2N880	–	2N5063	2N2325 C5G	C6G	2N2347	–	–	–	–
200		2N881	C103B	2N5064 C203B	2N2326* C5B	C6B	2N2348	2N1597, A	C106B1	C107B1	C108B1
250		–	–	–	2N2327 C5H	–	–	–	–	–	–
300		–	–	C203C	2N2328* C5C	C6C	–	2N1598, A	C106C1	C107C1	C108C1
400		–	–	C203D	2N2329* C5D	C6D	–	2N1599, A	C106D1	C107D1	C108D1
500		–	–	–	–	–	–	–	C106E1	C107E1	C108E1
600		–	–	–	–	–	–	–	C106M1	C107M1	C108M1
PACKAGE OUTLINE NO.		112	195.1, 228	263	101	101	101	101	173	173	173

*JAN & JANTX types available.

1. 2N885-89 available 20 mA max. I_{GT}.
2. 2N2322A-28A available 20 mA max. I_{GT}.

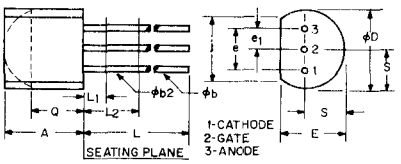
Silicon
Controlled Rectifier

0.8A RMS UP TO 200 VOLTS

2N5060 thru 2N5064

TYPICAL APPLICATIONS:

- Sensors
  - Temperature
  - Pressure
  - Dryness
  - Proximity
  - Voltage
  - Current
- Amplifiers (gate)
- Timers
- Logic Circuits
- Controls
  - Small Motors
  - Small Lamps
  - Remote
- Switching
  - Solid-State Relay
  - Relay Driver
  - Counter
  - Low Power Inverter
- 120V AC Line Operation



SYMBOL	INCHES MIN.	INCHES MAX.	MILLIMETERS MIN.	MILLIMETERS MAX.	NOTES
A	.170	.210	4.58	5.33	
ϕb	.016	.021	.407	.533	1,3
ϕb2	.016	.019	.407	.482	3
ϕD	.175	.205	4.96	5.20	
E	.125	.165	3.94	4.19	
e	.095	.105	2.42	2.66	
e1	.045	.055	1.15	1.39	
J	.135	–	3.43	–	
L	.500	–	12.70	–	1,3
L1	–	.050	–	1.27	3
L2	.250	–	6.35	–	3
Q	.115	–	2.93	–	2
S	.080	.105	2.42	2.66	

NOTES:
1. THREE LEADS.
2. CONTOUR OF THE PACKAGE BEYOND THIS ZONE IS UNCONTROLLED.
3. (THREE LEADS) ϕb2 APPLIES BETWEEN L1 AND L2. ϕb APPLIES BETWEEN L2 AND .5 INCH (12.70 MM) FROM SEATING PLANE. DIAMETER IS UNCONTROLLED IN L1 AND BEYOND .5 INCH (12.70 MM FROM SEATING PLANE.

FEATURES:

- 200 μA Gate Sensitivity
- 6-Amp Surge
- 30 through 200 Volt Selection
- Plastic TO-92 Package
- Low V_F
- High dv/dt

MAXIMUM ALLOWABLE RATINGS

TYPE	REPETITIVE PEAK OFF-STATE VOLTAGE, V_{DRM}(1) T_C = -65°C to +125°C	REPETITIVE PEAK REVERSE VOLTAGE, V_{DRM}(2) T_C = -65°C to +125°C	NON-REPETITIVE PEAK REVERSE VOLTAGE, V_{RSM}(2,3) T_C = -65°C to +125°C
2N5060	30 Volts*	30 Volts*	45 Volts*
2N5061	60 Volts*	60 Volts*	80 Volts*
2N5062	100 Volts*	100 Volts*	125 Volts*
2N5063	150 Volts*	150 Volts*	180 Volts*
2N5064	200 Volts*	200 Volts*	230 Volts*

RMS On-State Current, $I_{T(RMS)}$(4) . . . . . .0.8 Ampere*
Peak One Cycle Surge (non-rep) On-State Current, I_{TSM} . . . . . 6 Amperes*
Peak Gate Power Dissipation, P_{GM} . . . . . 5 Watts*
Average Gate Power Dissipation, $P_{G(AV)}$ . . . . . .0.01 Watt*
Peak Forward Gate Current, I_{GM} . . . . . .1 Ampere*
Peak Reverse Gate Voltage, V_{GM} . . . . . 5 Volts*
Storage Temperature, T_{STG} . . . . . .-65°C to +150°C*
Operating Junction Temperature, T_J . . . . . .-65°C to +125°C*

1 R_{GK} = 1000 ohms.
2 Values apply for zero or negative gate voltage only.
3 Half sine wave voltage pulse, 5 millisecond duration.
4 Maximum Allowable Case Temperature is 67°C for half sine wave of current at 60 Hz.
*Indicates JEDEC Registered Data.

CHARACTERISTICS

TEST	SYMBOL	MIN.	TYP.	MAX.	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 = 7Vdc, R_L = 100 ohms.
		–	–	*350		T_C = -65°C, V_D = 7Vdc, R_L = 100 ohms.
DC Gate Trigger Voltage	V_{GT}	–	–	0.8	Vdc	T_C = +25°C, V_D = 7Vdc, R_L = 100 ohms.
		–	–	*1.2		T_C = -65°C, V_D = 7Vdc, R_L = 100 ohms.
		*0.1	–	–		T_C = +125°C, Rated V_{DRM}, R_L = 100 ohms.
Peak On-State Voltage	V_{TM}	–	–	*1.7	V	T_C = +25°C, I_{TM} = 1.2A peak, 1 msec. wide pulse, Duty Cycle ⩽ 2%
Holding Current	I_H	–	–	5.0	mAdc	Anode source voltage = 7Vdc, R_{GK} = 1000 ohms. T_C = +25°C
		–	–	*10.0		T_C = -65°C
Critical Rate-of-Rise of Off-State Voltage	dv/dt	–	20	–	V/μsec	T_C = +25°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} = 1A (50 μsec. pulse). Rep. Rate = 60 pps. V_{RRM} = Rated, V_{RX} = 15V 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	$R_{\theta JC}$	–	–	*75	°C/W	Junction-to-case (flat side of case is temperature reference point).
	$R_{\theta JA}$	–	–	230		Junction-to-ambient (free convection).

*Indicates JEDEC Registered Data.