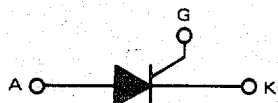




MOTOROLA

Semiconductors

2N3668 thru 2N3670 2N4103



SILICON CONTROLLED RECTIFIERS

These devices are designed for 12.5 Ampere RMS, 100 through 600 Volt power supply and computer control applications to 100°C maximum Junction Temperature.

- Low Forward "On" Voltage –
 $V_{TM} = 1.8$ Volts (Max) @ $T_J = 25^\circ\text{C}$
- All Diffused Junctions for Greater Parameter Uniformity
- Glass Passivated for Greater Stability

*MAXIMUM RATINGS

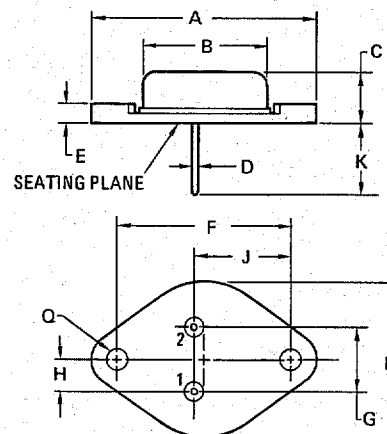
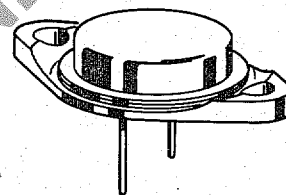
Rating	Symbol	Value	Unit
Peak Reverse Blocking Voltage (1)	V_{RRM}		Volts
2N3668		100	
2N3669		200	
2N3670		400	
2N4103		600	
Peak Forward Gate Voltage	V_{GF}	10	Volts
Peak Reverse Gate Voltage	V_{GR}	5.0	Volts
Forward Current RMS ($T_C = 80^\circ\text{C}$) (All Conduction Angles)	$I_T(\text{RMS})$	12.5	Amps
Peak Forward Surge Current (1/2 cycle, Sine Wave, 60 Hz, $T_J = -40$ to $+100^\circ\text{C}$)	I_{TSM}	200	Amps
Circuit Fusing Considerations ($T_J = -40$ to $+100^\circ\text{C}$, $t = 1.0$ to 8.3 ms)	I^2t	166	A^2s
Forward Peak Gate Power	P_{GM}	5.0	Watts
Forward Average Gate Power	$P_{G(AV)}$	0.5	Watt
Forward Peak Gate Current	I_{GM}	2.0	Amps
Operating Junction Temperature Range	T_J	-40 to $+100$	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to $+125$	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.7	$^\circ\text{C/W}$

THYRISTORS

12.5 AMPERES RMS
100-600 VOLTS



STYLE 2: (THY)
PIN 1. GATE
2. CATHODE
CASE: ANODE

DIM*	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	—	39.12	—	1.540
B	—	20.70	—	0.815
C	—	7.92	—	0.312
D	1.22	1.30	0.048	0.051
E	2.84	3.05	0.112	0.120
F	29.90	30.40	1.177	1.197
G	10.67	11.18	0.420	0.440
H	5.33	5.59	0.210	0.220
J	16.54	16.79	0.651	0.661
K	8.13	10.67	0.320	0.420
Q	3.84	4.09	0.151	0.161
R	—	26.16	—	1.030

CASE 54-05

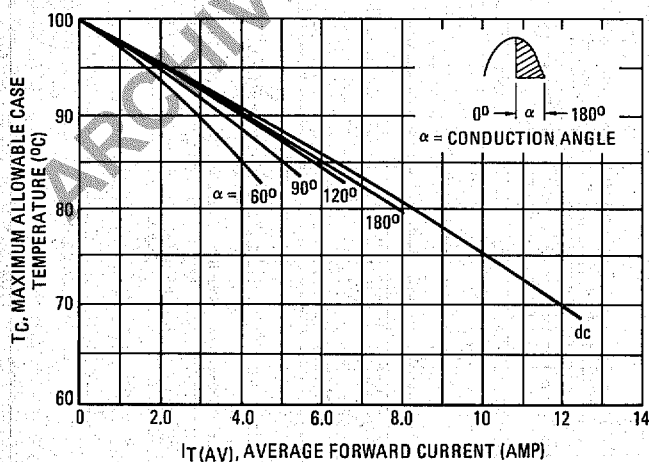
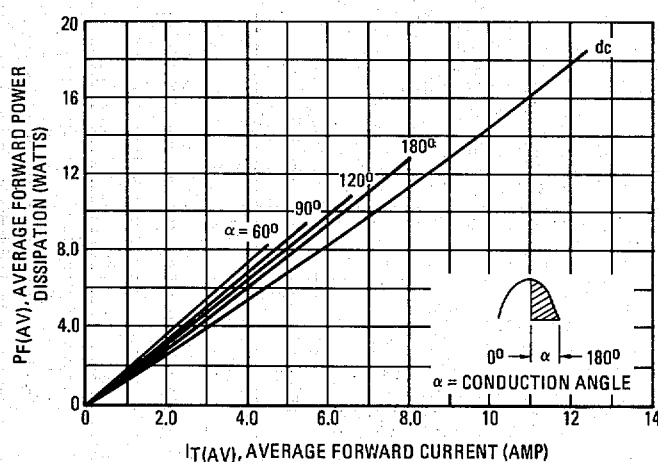
(1) V_{RRM} for all types can be applied on a continuous dc basis without incurrent damage. Ratings apply for zero or negative gate voltage. Devices should not be tested for blocking capability in a manner such that the voltage supplied exceeds the rated blocking voltage.

*Indicates JEDEC Registered Data.

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic		Symbol	Min	Typ	Max	Unit
*Peak Forward Blocking Voltage ($T_J = 100^\circ\text{C}$)	2N3668 2N3669 2N3670 2N4103	V_{DRM}	100 200 400 600	— — — —	— — — —	Volts
*Peak Forward Blocking Current (Rated V_{DRM} @ $T_J = 100^\circ\text{C}$)	2N3668 2N3669 2N3670 2N4103	I_{DRM}	— — — —	— — — —	2.0 2.5 3.0 4.0	mA
*Peak Reverse Blocking Current (Rated V_{RRM} @ $T_J = 100^\circ\text{C}$)	2N3668 2N3669 2N3670 2N4103	I_{RRM}	— — — —	— — — —	1.0 1.25 1.5 2.0	mA
*Forward "On" Voltage (1) ($I_{\text{TM}} = 25 \text{ A peak}$)		V_{TM}	—	—	1.8	Volts
*Gate Trigger Current (Continuous dc) (Anode Voltage = 12 Vdc, $R_L = 24 \text{ Ohms}$)	($T_J = 25^\circ\text{C}$) ($T_J = -40^\circ\text{C}$) *	I_{GT}	— —	— —	40 80	mA
*Gate Trigger Voltage (Continuous dc) (Anode Voltage = 12 Vdc, $R_L = 24 \text{ Ohms}$)	($T_J = -40^\circ\text{C}$) * ($T_J = +25^\circ\text{C}$) ($T_J = +100^\circ\text{C}$)	V_{GT}	— — 0.3	1.0 — —	3.0 2.0 —	Volts
Holding Current (Anode Voltage = 12 Vdc)		I_{H}	—	20	—	mA
Turn-On Time		t_{gt}	—	0.5	—	μs
Turn-Off Time (V_{DRM} = rated voltage)		t_{q}	—	50	—	μs
Forward Voltage Application Rate		dv/dt	—	30	—	V/ μs

*Indicates JEDEC Registered Data.

(1) Pulse Test: Pulse Width $\leq 1.0 \text{ ms}$, Duty Cycle $\leq 1.0\%$.**FIGURE 1 — CURRENT DERATING****FIGURE 2 — MAXIMUM POWER DISSIPATION****MOTOROLA Semiconductor Products Inc.**

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