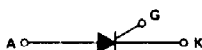


20 STERN AVE.  
SPRINGFIELD, NEW JERSEY 07081  
U.S.A.

TELEPHONE: (973) 376-2922  
(212) 227-6005  
FAX: (973) 376-8960

**2N6167  
thru  
2N6170**

**SCRs  
20 AMPERES RMS  
100 thru 600 VOLTS**



## Silicon Controlled Rectifier Reverse Blocking Triode Thyristor

... designed for industrial and consumer applications such as power supplies; battery chargers; temperature, motor, light and welder controls.

- Economical for a Wide Range of Uses
- High Surge Current —  $I_{TSM} = 240$  Amps
- Rugged Construction in Isolated Stud Package

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
*Peak Repetitive Forward and Reverse Blocking Voltage (1) ( $T_J = -40^\circ\text{C}$ to $+100^\circ\text{C}$ )	$V_{DRM}$ or $V_{RRM}$	100 200 400 600	Volts
*Non-Repetitive Peak Reverse Blocking Voltage ( $t \leq 5$ ms)	$V_{RSM}$	150 250 450 650	Volts
*Average Forward Current ( $T_C = -40$ to $+65^\circ\text{C}$ ) ( $+85^\circ\text{C}$ )	$I_{T(AV)}$	13 6.5	Amps
*Peak Surge Current (One cycle, 60 Hz) ( $T_C = +65^\circ\text{C}$ ) (1.5 ms pulse @ $T_J = 100^\circ\text{C}$ ) Preceded and followed by no current or Voltage	$I_{TSM}$	240 560	Amps
Circuit Fusing ( $T_J = -40$ to $+100^\circ\text{C}$ ) ( $t = 1$ to 8.3 ms)	$I^2t$	235	$\text{A}^2\text{s}$
*Peak Gate Power	$P_{GM}$	5	Watts
*Average Gate Power	$P_{G(AV)}$	0.5	Watt

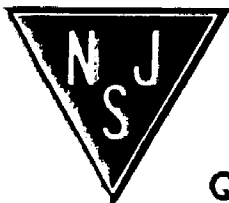
\*Indicates JEDEC Registered Data.

(cont.)

(1) Ratings apply for zero or negative gate voltage. Devices shall not have a positive bias applied to the gate concurrently with a negative potential on the anode. Devices should not be tested with a constant current source for forward or reverse blocking capability such that the voltage applied exceeds the rated blocking voltage.

NJ Semi-Conductors reserves the right to change test conditions, parameters limits and package dimensions without notice information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

**Quality Semi-Conductors**



**MAXIMUM RATINGS — continued**

Rating	Symbol	Value	Unit
*Peak Forward Gate Current	I <sub>GFM</sub>	2	Amps
*Operating Junction Temperature Range	T <sub>J</sub>	-40 to +100	°C
*Storage Temperature Range	T <sub>stg</sub>	-40 to +150	°C
*Stud Torque	—	30	in. lb.

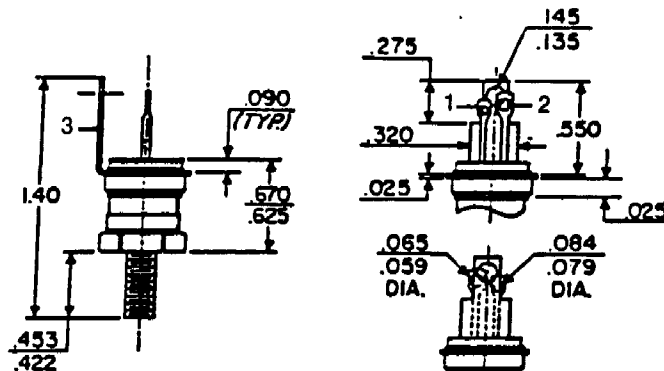
**\*THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	1.5	°C/W

**ELECTRICAL CHARACTERISTICS (T<sub>C</sub> = 25°C unless otherwise noted.)**

Characteristic	Symbol	Min	Typ.	Max	Unit
*Peak Forward or Reverse Blocking Current (Rated V <sub>DRM</sub> or V <sub>RRM</sub> , gate open, T <sub>C</sub> = 100°C) 2N6167 2N6168 2N6169 2N6170 (Rated V <sub>DRM</sub> or V <sub>RRM</sub> , gate open, T <sub>C</sub> = 25°C) All Devices	I <sub>DRM</sub> , I <sub>RRM</sub>	—	1 1 1 1	2 2.5 3 4	mA    μA
*Peak Forward "On" Voltage (I <sub>TM</sub> = 41 A Peak)	V <sub>TM</sub>	—	1.5	1.7	Volts
Gate Trigger Current, Continuous dc (V <sub>D</sub> = 12 V, R <sub>L</sub> = 24 Ω) *T <sub>C</sub> = -40°C T <sub>C</sub> = 25°C	I <sub>GT</sub>	—	— 2.1	75 40	mA
Gate Trigger Voltage, Continuous dc (V <sub>D</sub> = 12 V, R <sub>L</sub> = 24 Ω) *T <sub>C</sub> = -40°C T <sub>C</sub> = 25°C	V <sub>GT</sub>	—	0.8 0.63	2.5 1.6	Volts
Holding Current (V <sub>D</sub> = 12 V, gate open, I <sub>T</sub> = 200 mA) *T <sub>C</sub> = -40°C T <sub>C</sub> = 25°C	I <sub>H</sub>	—	— 3.5	90 50	mA
*Turn-On Time (t <sub>d</sub> + t <sub>r</sub> ) (I <sub>TM</sub> = 41 Adc, V <sub>D</sub> = Rated V <sub>DRM</sub> , I <sub>GT</sub> = 200 mAdc, Rise Time ≤ 0.05 μs, Pulse Width = 10 μs)	t <sub>on</sub>	—	—	1	μs
Turn-Off Time (I <sub>TM</sub> = 10 A, I <sub>R</sub> = 10 A) (I <sub>TM</sub> = 10 A, I <sub>R</sub> = 10 A, T <sub>J</sub> = 100°C)	t <sub>off</sub>	—	25 40	— —	μs
Forward Voltage Application Rate (T <sub>J</sub> = 100°C, V <sub>D</sub> = Rated V <sub>DRM</sub> )	dv/dt	—	50	—	V/μs

\*Indicates JEDEC Registered Data.



**20.0 AMP and 25.0 AMP  
1/2" ISOLATED STUD MOUNT  
ALL DIMENSIONS IN INCHES**