New Jersey Semi-Conductor Products, Inc.

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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°C to +100°C) 2N6167	V_{DRM} or V_{RRM}	100	Volts
2N6168		200	
2N6169		400	
2N6170		600	
*Non-Repetitive Peak Reverse Blocking Voltage (t ≤ 5 ms) 2N6167	V_{RSM}	150	Volts
2N6168		250	
2N6169		450	
2N6170		650	
*Average Forward Current (T_C = −40 to +65°C)	$I_{T(AV)}$	13	Amps
(+85°C)		6.5	
*Peak Surge Current (One cycle, 60 Hz) (T_C = +65°C)	I_{TSM}	240	Amps
(1.5 ms pulse @ T_J = 100°C)		560	
Preceded and followed by no current or Voltage			
Circuit Fusing (T_J = −40 to +100°C) (t = 1 to 8.3 ms)	I^2t	235	A^2s
*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.

MAXIMUM RATINGS — continued

Rating	Symbol	Value	Unit
*Peak Forward Gate Current	I_{GFM}	2	Amps
*Operating Junction Temperature Range	T_J	−40 to +100	°C
*Storage Temperature Range	T_{stg}	−40 to +150	°C
*Stud Torque	—	30	in. lb.

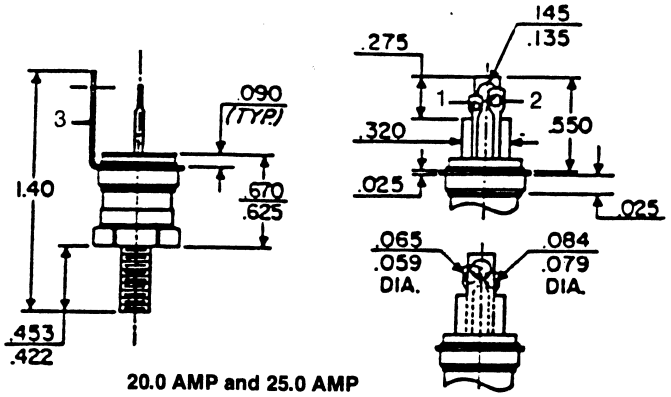
***THERMAL CHARACTERISTICS**

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5	°C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted.)

Characteristic		Symbol	Min	Typ	Max	Unit
*Peak Forward or Reverse Blocking Current		I_{DRM}, I_{RRM}				mA
(Rated V_{DRM} or V_{RRM}, gate open, T_C = 100°C)						
	2N6167		—	1	2	
	2N6168		—	1	2.5	
	2N6169		—	1	3	
	2N6170		—	1	4	
(Rated V_{DRM} or V_{RRM}, gate open, T_C = 25°C)						
	All Devices		—	—	10	μA
*Peak Forward "On" Voltage (I_{TM} = 41 A Peak)		V_{TM}	—	1.5	1.7	Volts
Gate Trigger Current, Continuous dc (V_D = 12 V, R_L = 24 Ω)	*T_C = −40°C	I_{GT}	—	—	75	mA
	T_C = 25°C		—	2.1	40	
Gate Trigger Voltage, Continuous dc (V_D = 12 V, R_L = 24 Ω)	*T_C = −40°C	V_{GT}	—	0.8	2.5	Volts
	T_C = 25°C		—	0.63	1.6	
Holding Current (V_D = 12 V, gate open, I_T = 200 mA)	*T_C = −40°C	I_H	—	—	90	mA
	T_C = 25°C		—	3.5	50	
*Turn-On Time (t_d + t_r) (I_{TM} = 41 Adc, V_D = Rated V_{DRM}, I_{GT} = 200 mAdc, Rise Time ≤ 0.05 μs, Pulse Width = 10 μs)		t_{on}	—	—	1	μs
Turn-Off Time		t_{off}				μs
(I_{TM} = 10 A, I_R = 10 A)			—	25	—	
(I_{TM} = 10 A, I_R = 10 A, T_J = 100°C)			—	40	--	
Forward Voltage Application Rate (T_J = 100°C, V_D = Rated V_{DRM})		dv dt	—	50	—	V/μs

*Indicates JEDEC Registered Data.



20.0 AMP and 25.0 AMP
½" ISOLATED STUD MOUNT
ALL DIMENSIONS IN INCHES