New Jersey Semi-Conductor Products, Inc.

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SCRs
1 Amp, Planar

FEATURES
- One Cycle Surge Current: 15A
- Voltage Ratings: to 200V
- Low "On-Voltage": 2V Max. at 1A
- Operation: to 150°C Junction Temperature
- All Leads Isolated for Design Flexibility

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DESCRIPTION
These types are useful in AC and DC static switching, proportioning control, relay and thyratron replacement, DC to AC converters, servo motor driving, protective circuits, and related applications.
This series is available in a TO-9 package, with all leads isolated from the case, providing a maximum thermal resistance of 20°C/Watt between junction and case.

ABSOLUTE MAXIMUM RATINGS

	2N1881	2N1882	2N1883	2N1884	2N1
Repetitive Peak Off-State Voltage, V_{DRM}	30V	60V	100V	150V	20
Repetitive Peak Reverse Voltage, V_{RRM}	30V	60V	100V	150V	20
D.C. On-State Current, I_T					
100°C Ambient			250mA		
100°C Case			1.0A		
Repetitive Peak On-State Current, I_{TRM}			up to 30A		
Peak One Cycle Surge (Non-Rep.) On-State Current, I_{TSM}			15A		
Peak Gate Current, I_{GM}			250mA		
Average Gate Current $I_{G(AV)}$			25mA		
Reverse Gate Voltage, V_{GR}			3V		
Thermal Resistance, Junction to Case, $R\theta_{J-C}$			20°C/W		
Operating and Storage Temperature Range			−65°C to +150°C		

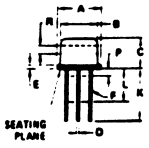
ELECTRICAL SPECIFICATIONS (at 25°C unless noted)†

Test	Symbol	Min.	Typical	Max.	Units	Test Conditions
Subgroup 1 (Visual and Mechanical)						
Subgroup 2 (25°C Tests)						
Off-State Current	I_{DRM}	—	0.5	10	μA	R_{GK} = 1K, V_{DRM} = Rating
Reverse Current	I_{RRM}	—	0.5	10	μA	R_{GK} = 1K, V_{RRM} = Rating
Reverse Gate Current	I_{GR}	—	0.5	10	μA	V_{GRM} = 2V
Gate Trigger Current	I_{GT}	—	0.2	2	mA	R_{GS} = 10K, V_D = 5V
Gate Trigger Voltage	V_{GT}	0.40	1	2	V	R_{GS} = 100Ω, V_D = 5V
On-State Voltage	V_T	—	1.5	2	V	I_T = 1A (pulse test)
Holding Current	I_H	—	2	—	mA	I_G = −150μA, V_D = 5V
Anode Trigger Current	I_{AT}	—	0.5	—	mA	R_{GS} = 10K, V_D = 5V
Subgroup 3 (25°C Tests)						
Turn-on Time	t_{on}	—	0.2	—	μs	I_G = 20mA, I_T = 0.5A, V_D = 30V
Gate Trigger — on Pulse Width	t_{pg} (on)	—	1	—	μs	I_G = 20mA, I_T = 0.5A, V_D = 30V
Turn-off Time	t_{off}	—	1	—	μs	I_T = 1A, I_R = IA, R_{GK} = IK
Circuit Commutated Turn-off Time	t_q	—	10	—	μs	I_T = 1A, I_R = IA, R_{GK} = IK
Subgroup 3 (125°C Tests)						
High Temp. Off-State Current	I_{DRM}	—	15	200	μA	R_{GK} = 1K, V_{DRM} = Rating
High Temp. Reverse Current	I_{RRM}	—	15	200	μA	R_{GK} = 1K, V_{RRM} = Rating

† All values in this table are JEDEC registered.

Note: Voltage ratings apply over the operating temperature range, provided the gate is connected to the cathode through an appropriate resistor, or adequate gate bias is used.

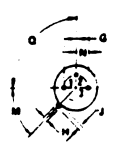
PIN 1. CATHODE
2. GATE
3. ANODE



TO-39

DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES MAX
A	8.89	9.40	0.350	0.370
B	8.00	8.51	0.315	0.335
C	6.10	6.60	0.240	0.260
D	0.406	0.533	0.016	0.021
E	0.229	0.178	0.009	0.175
F	0.406	0.483	0.016	0.019
G	4.83	5.33	0.190	0.210
H	0.711	0.864	0.028	0.034
J	0.737	1.02	0.029	0.040
K	12.70	-	0.500	-
L	6.35	-	0.250	-
M	45° NOM		45° NOM	
P	-	1.27	-	0.050
Q	90° NOM		90° NOM	
R	2.54	-	0.100	-

An JEDEC dimensions and notes apply.



Quality Semi-Conductors