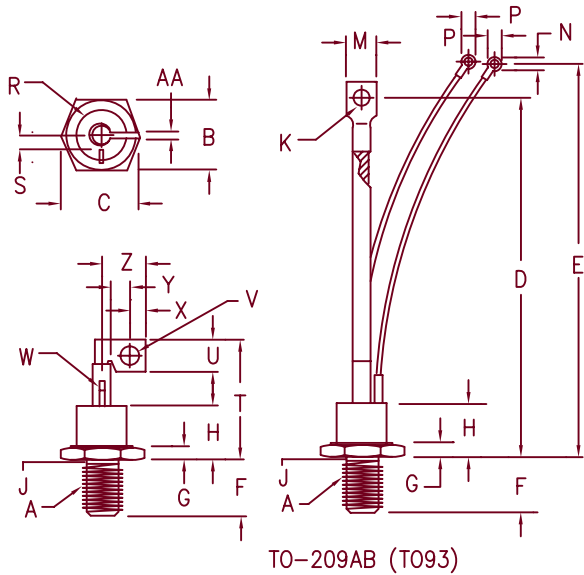


# Silicon Controlled Rectifier Series 151



**Notes:**

1. 3/4-16 UNF-3A
2. Full thread within 2 1/2 threads
3. For insulated cathode lead, add suffix "IL" to catalog number

Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	---	---	---	---	1
B	1.237	1.243	31.42	31.57	
C	1.350	1.360	34.29	34.54	
D	7.428	7.671	188.67	194.84	
E	7.382	8.100	187.50	205.74	
F	1.047	1.077	26.59	27.36	
G	.365	.385	9.27	9.78	
H	---	1.383	---	35.13	
J	.660	.749	16.76	19.02	2
K	.338	.348	8.59	8.84	Dia.
M	.625	.687	15.88	17.45	
N	.140	.150	3.56	3.81	
P	---	.295	---	7.49	
R	---	1.125	---	28.56	Dia.
S	.295	.305	7.49	7.75	
T	---	2.550	---	64.77	
U	.620	.630	15.75	16.00	
V	.276	.286	7.01	7.26	Dia.
W	.065	.075	1.65	1.91	Dia.
X	.245	.255	6.22	6.48	
Y	.243	---	6.17	---	
Z	.770	.790	19.56	20.07	
AA	.120	.130	3.05	3.30	

Microsemi Catalog Number	Forward & Reverse Repetitive Blocking	Reverse Transient Blocking
15102GOA	200	300
15104GOA	400	500
15106GOA	600	700
15108GOA	800	900
15110GOA	1000	1100
15112GOA	1200	1300

Change "A" suffix to "D" for flag lead  
To specify dv/dt higher than 200V/usec., contact factory.

- High dv/dt-200 V/usec.
- 3500 Amperes surge current capability
- Low forward on-state voltage
- Primarily for line commutated converters
- Economical for general purpose phase control applications

### Electrical Characteristics

Max. RMS on-state current	$I_T(RMS)$ 235 Amps	$T_C = 74^\circ C$
Max. average on-state cur.	$I_T(AV)$ 150 Amps	$T_C = 74^\circ C$
Max. peak on-state voltage	$V_{TM}$ 1.7 Volts	$I_{TM} = 500 A(peak)$
Max. holding current	$I_H$ 200 mA	
Max. peak one cycle surge current	$I_{TSM}$ 3500 A	$T_C = 74^\circ C, 60Hz$
Max. $I^2t$ capability for fusing	$I^2t$ 50,000A <sup>2</sup> S	$t = 8.3 ms$

### Thermal and Mechanical Characteristics

Operating junction temp range	$T_J$	-65°C to 125°C
Storage temperature range	$T_{STG}$	-65°C to 150°C
Maximum thermal resistance	$R_{\theta JC}$	0.20°C/W Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.40°C/W Case to sink
Mounting torque		250-300 inch pounds
Weight		7.4 ounces (211.1 grams) typical

## Switching

Critical rate of rise of on-state current (note 1)	$di/dt$	100A/usec.	$T_J = 125^\circ\text{C}$
Typical delay time (note 1)	$t_d$	3.0 usec.	
Typical circuit commuted turn-off time (note 2)	$t_q$	100 usec.	$T_J = 125^\circ\text{C}$

Note 1:  $I_{TM} = 100\text{A}$ ,  $V_D = V_{DRM}$ ,  $V_{GT} = 12\text{V}$  open circuit, 20 ohm-0.1 usec rise time  
 Note 2:  $I_{TM} = 100\text{A}$ ,  $di/dt = 5\text{A/usec}$ ,  $V_R$  during turn-off internal = 50V min,  
 reapplied  $dv/dt = 20\text{V/usec.}$ , linear to rated  $V_{DRM}$ ,  $V_{GT} = 0\text{V}$

## Triggering

Max. gate voltage to trigger	$V_{GT}$	3.0V	$T_J = 25^\circ\text{C}$
Max. nontriggering gate voltage	$V_{GD}$	0.25V	$T_J = 125^\circ\text{C}$
Max. gate current to trigger	$I_{GT}$	150mA	$T_J = 25^\circ\text{C}$
Max. peak gate power	$P_{GM}$	10W	
Average gate power	$P_{G(AV)}$	2.0W	$t_p = 10 \text{ usec.}$
Max. peak gate current	$I_{GM}$	2.0A	
Max. peak gate voltage (forward)	$V_{GM}$	10V	
Max. peak gate voltage (reverse)	$V_{GM}$	5.0V	

## Blocking

Max. leakage current	$I_{DRM}$	15mA	$T_J = 125^\circ\text{C} \ \& \ V_{DRM}$
Max. reverse leakage	$I_{RRM}$	15mA	$T_J = 125^\circ\text{C} \ \& \ V_{RRM}$
Critical rate of rise of off-state voltage	$dv/dt$	200V/usec.	$T_J = 125^\circ\text{C}$

Figure 1  
Typical Forward On-State Characteristics

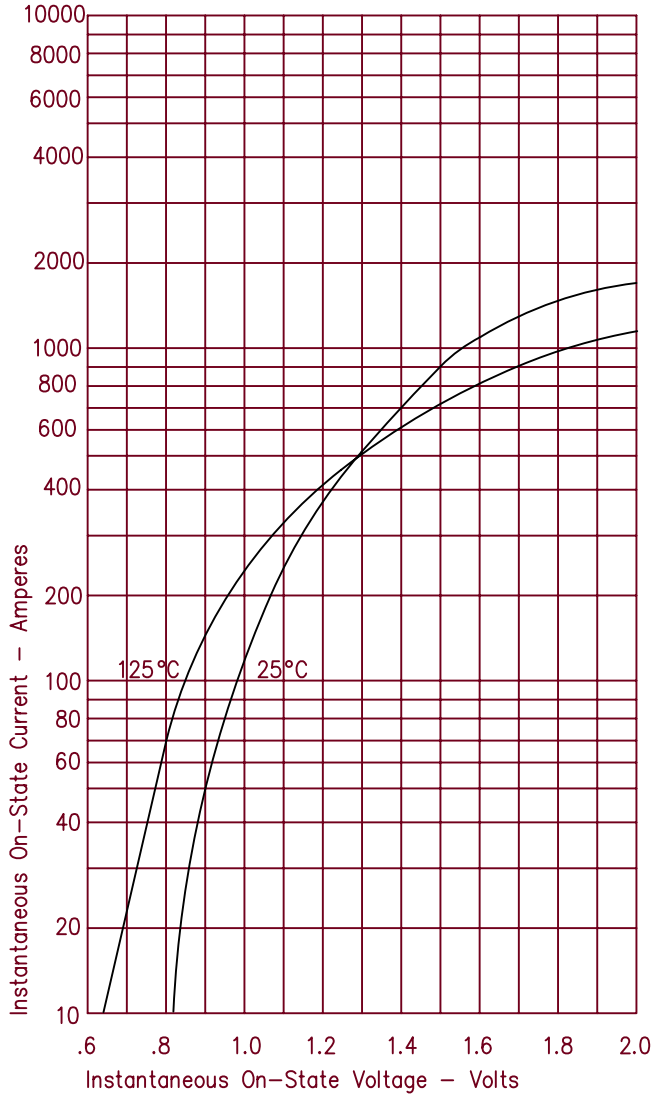


Figure 3  
Maximum Power Dissipation

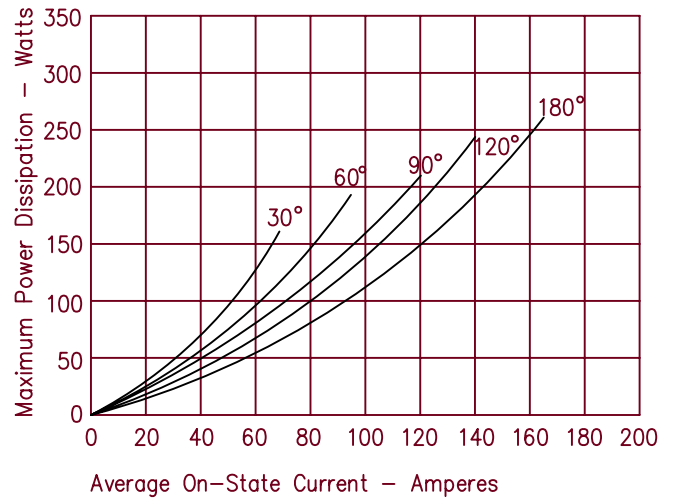


Figure 4  
Transient Thermal Impedance

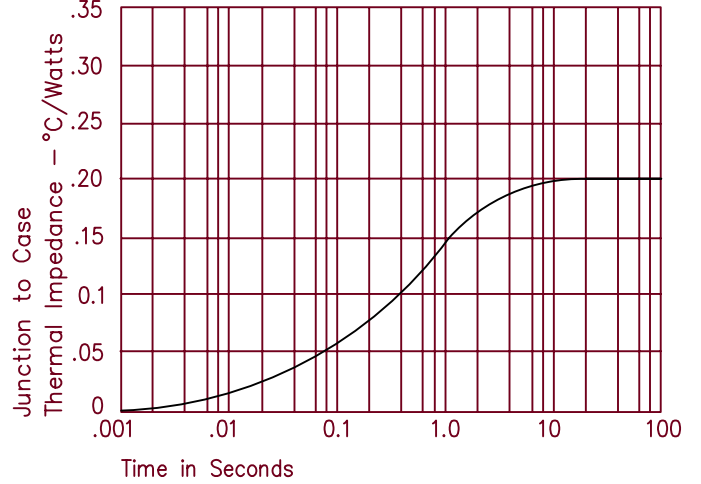


Figure 2  
Forward Current Derating

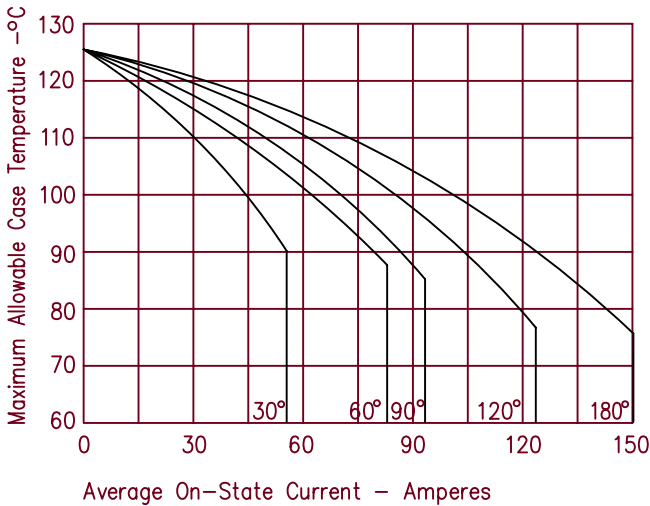


Figure 5  
Maximum Nonrepetitive Surge Current

