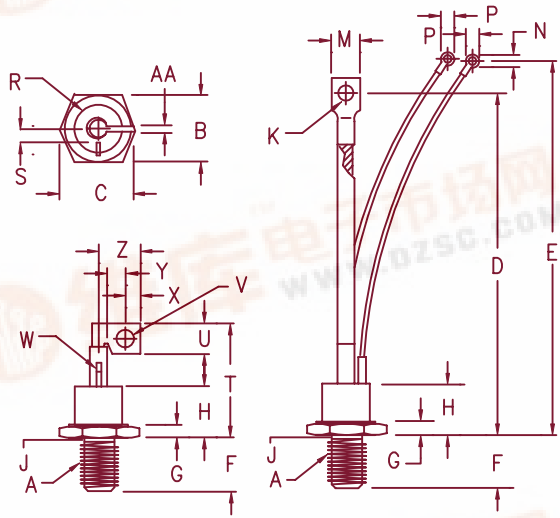


Silicon Controlled Rectifier Series 151



TO-209AB (TO93)

Notes:

- 3/4-16 UNF-3A
- Full thread within 2 1/2 threads
- 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	$I_T(\text{RMS})$ 235 Amps	$T_C = 74^\circ\text{C}$
Max. average on-state cur.	$I_T(\text{AV})$ 150 Amps	$T_C = 74^\circ\text{C}$
Max. peak on-state voltage	V_{TM} 1.7 Volts	$I_{TM} = 500 \text{ A(peak)}$
Max. holding current	I_H 200 mA	
Max. peak one cycle surge current	I_{TSM} 3500A	$T_C = 74^\circ\text{C}, 60\text{Hz}$
Max. I^2t capability for fusing	I^2t 50,000A ² S	$t = 8.3 \text{ ms}$

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



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10-6-00 Rev. 1

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 interval = 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

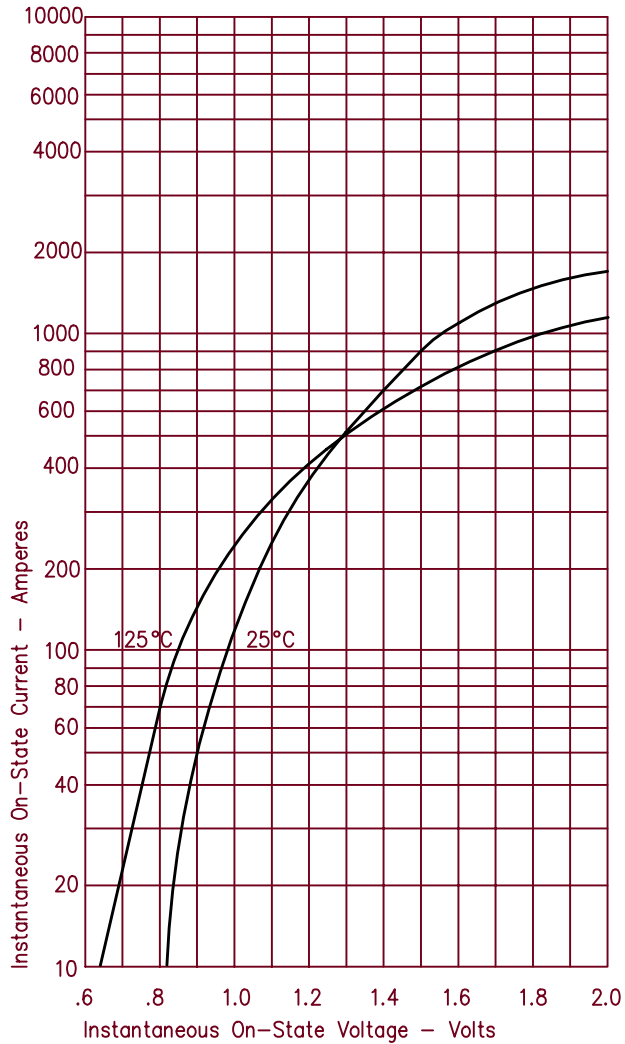


Figure 2
Forward Current Derating

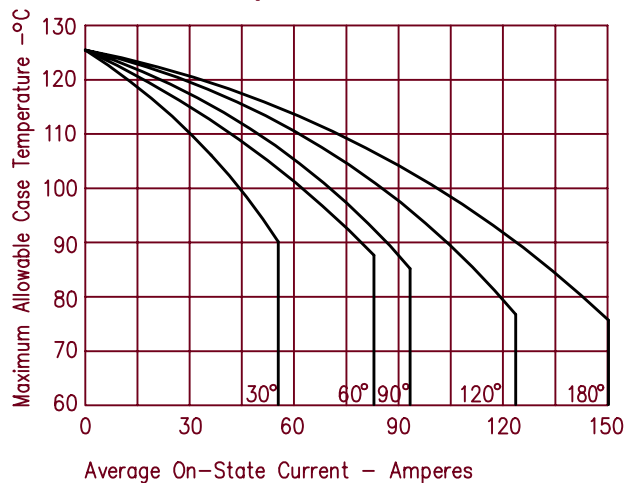


Figure 3
Maximum Power Dissipation

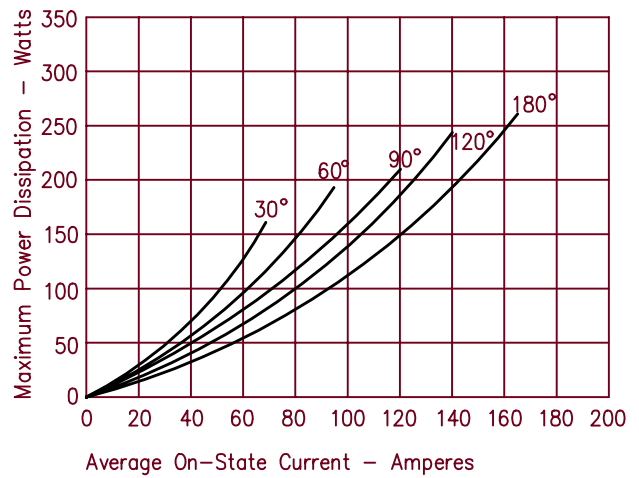


Figure 4
Transient Thermal Impedance

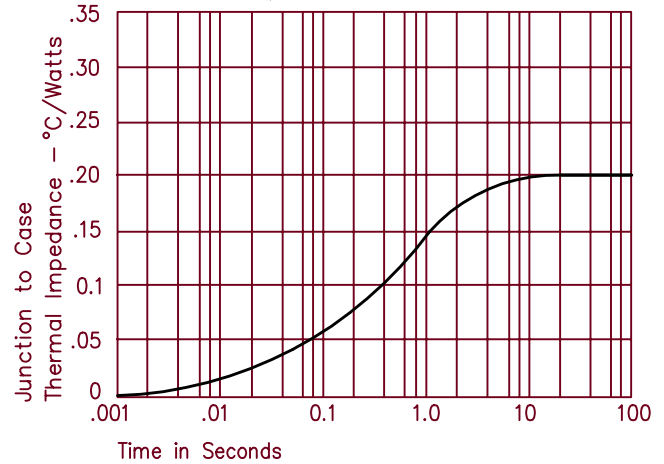


Figure 5
Maximum Nonrepetitive Surge Current

