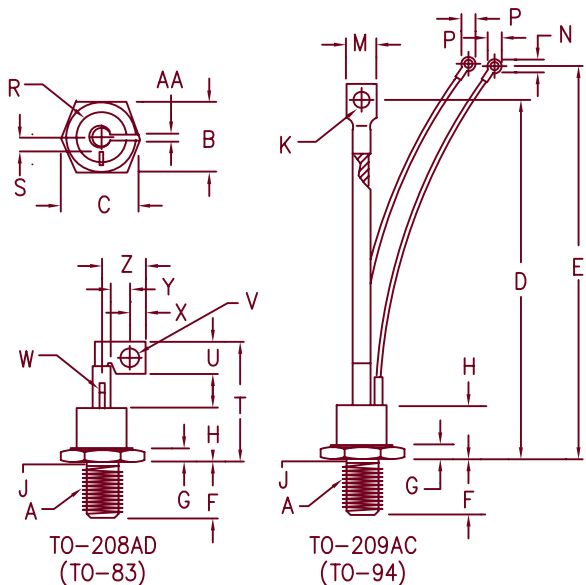


Silicon Controlled Rectifier Series 70C



Note 1: 1/2-20 UNF-3A

Note 2: Full thread within 2 1/2 threads

Note 3: For insulated cathode lead,
add suffix "IL" to catalog number

Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	---	---	---	---	1
B	1.050	1.060	26.67	26.92	
C	---	1.161	---	29.49	
D	5.850	6.144	149.10	156.06	
E	6.850	7.375	173.99	187.33	
F	.797	.827	20.24	21.01	
G	.276	.286	.701	7.26	
H	---	.948	---	24.08	
J	.425	.499	10.80	12.67	2
K	.260	.280	6.60	7.11	Dia.
M	.500	.600	12.70	15.24	
N	.140	.150	3.56	3.81	
P	---	.295	---	7.49	
R	---	.900	---	22.86	Dia.
S	.225	.275	6.48	6.99	
T	---	1.750	---	44.45	
U	.370	.380	9.40	9.65	
V	.213	.223	5.41	5.66	Dia.
W	.065	.075	1.65	1.91	Dia.
X	.215	.225	5.46	5.72	
Y	.290	.315	7.37	8.00	
Z	.514	.530	13.06	13.46	
AA	.089	.099	2.26	2.51	

Microsemi Catalog Number		Forward & Reverse Repetitive Blocking	Reverse Transient Blocking
Standard Lead	Flag Lead		
70C50B	70C50BF	500	600
70C60B	70C60BF	600	700
70C80B	70C80BF	800	900
70C100B	70C100BF	1000	1100
70C120B	70C120BF	1200	1300

To specify dv/dt other than 200V/usec., contact factory.

- High dv/dt—200 V/usec.
- 1200 Amperes surge current
- Low forward on-state voltage
- Package conforming to either TO-209AC or TO-208AD outline
- Economical for general purpose phase control applications

Electrical Characteristics

Max. RMS on-state current	$I_T(\text{RMS})$ 110 Amps	$T_C = 78^\circ\text{C}$
Max. average on-state cur.	$I_T(\text{AV})$ 70 Amps	$T_C = 78^\circ\text{C}$
Max. peak on-state voltage	V_{TM} 1.4 Volts	$I_{TM} = 220 \text{ A(peak)}$
Max. holding current	I_H 200 mA	
Max. peak one cycle surge current	I_{TSM} 1600 A	$T_C = 78^\circ\text{C}, 60\text{Hz}$
Max. I^2t capability for fusing	I^2t 6000A 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	$R_{\theta JC}$	0.28°C/W Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.20°C/W Case to sink
Max mounting torque		100-130 inch pounds
Weight		70C-B Approx. 3.6 ounces (102.0 grams) typical 70C-BF Approx. 3.24 ounces (91.8 grams) typical

70C

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: $I_{TM} = 50\text{A}$, $V_D = V_{DRM}$, $V_{GT} = 12\text{V}$ open circuit, 20 ohm-0.1 usec. rise time

Note 2: $I_{TM} = 50\text{A}$, $di/dt = 5\text{A/usec.}$, 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}	100mA	$T_J = 25^\circ\text{C}$
Max. peak gate power	P_{GM}	15W	
Average gate power	$P_{G(AV)}$	3.0W	$t_p = 10 \text{ usec.}$
Max. peak gate current	I_{GM}	4.0A	
Max. peak gate voltage (forward)	V_{GM}	10V	
Max. peak gate voltage (reverse)	V_{GM}	5.0V	

Blocking

Max. leakage current	I_{DRM}, I_{RRM}	10mA	$T_J = 125^\circ\text{C} \ \& \ V_{DRM}, V_{RRM}$
Max. reverse leakage	I_{DRM}, I_{RRM}	100uA	$T_J = 25^\circ\text{C} \ \& \ V_{DRM}, V_{RRM}$
Critical rate of rise of off-state voltage	dv/dt	200V/usec.	$T_J = 125^\circ\text{C}$

70C

Figure 1
Typical Forward On-State Characteristics

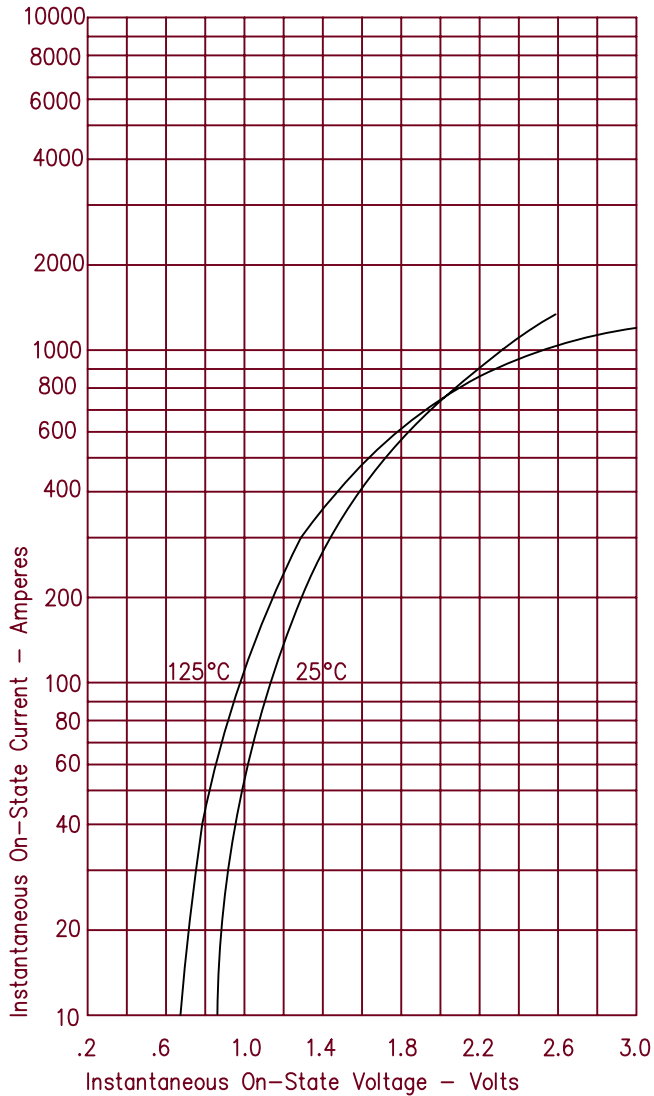


Figure 3
Maximum Power Dissipation

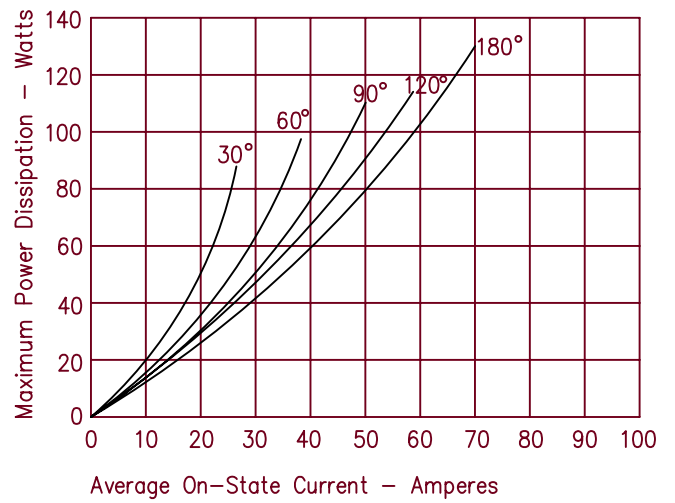


Figure 4
Transient Thermal Impedance

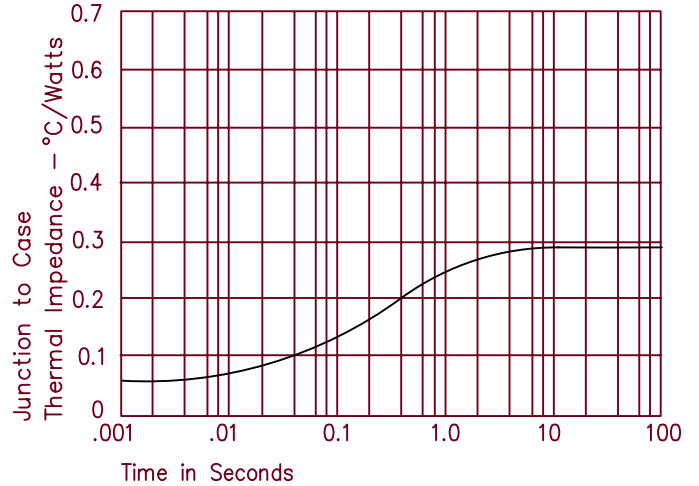


Figure 2
Forward Current Derating

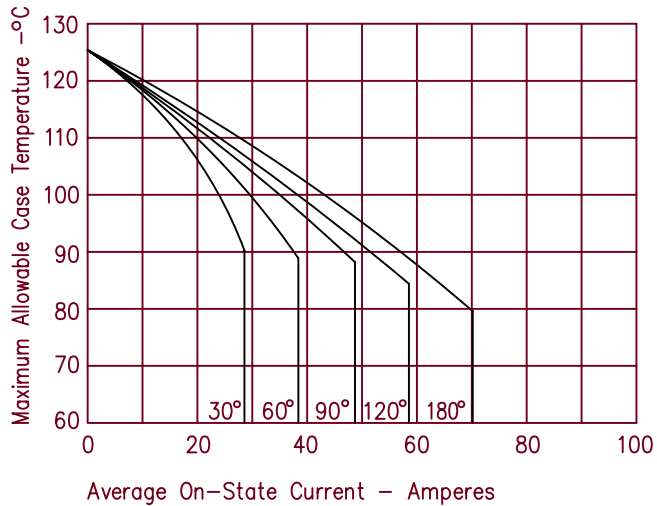
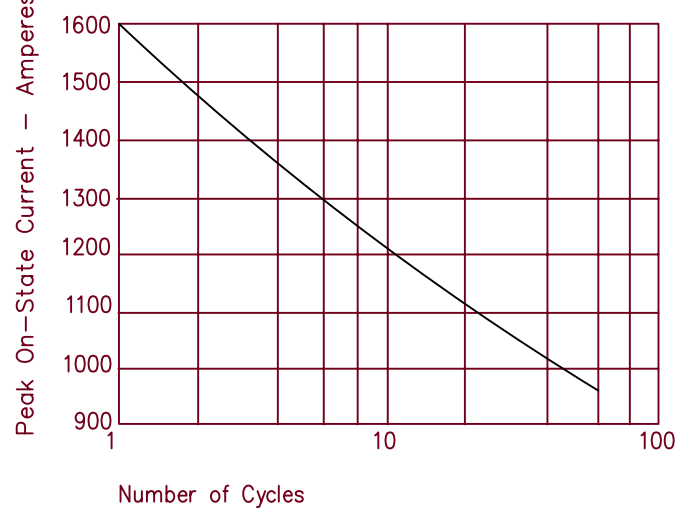


Figure 5
Maximum Nonrepetitive Surge Current



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Microsemi:](#)

[70C80B](#) [70C120B](#) [70C100B](#) [70C120BF](#) [70C80BF](#) [70C50B](#) [70C100BF](#) [70C50BF](#) [70C60B](#) [70C60BF](#)