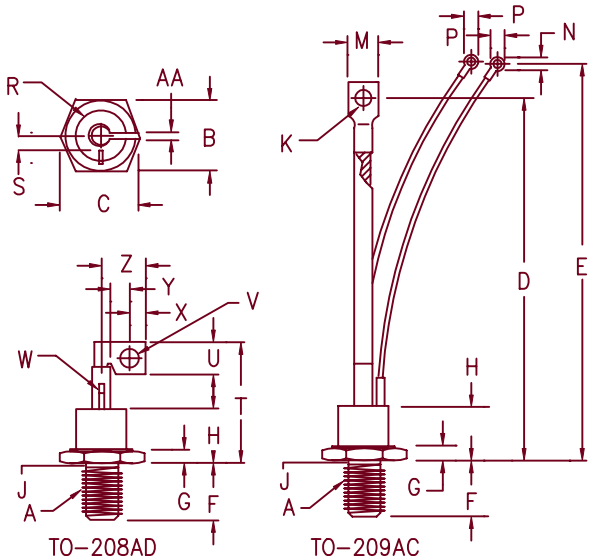
Silicon Controlled Rectifier
Series 080



Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
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	

Note 1: 1/2-20 UNF-3A
Note 2: Full thread within 2 1/2 threads
Note 3: To specify package designation other than standard lead enter appropriate letter in place of "A".
"B" = Insulated lead
"D" = Flag Terminal
"C" = Top Stud (consult factory)

Microsemi Catalog Number	Forward & Reverse Repetitive Blocking	Reverse Transient Blocking
Standard Lead		
08003G0A	300	400
08004G0A	400	500
08005G0A	500	600
08006G0A	600	700

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

- High dv/dt-200 V/usec.
- 1800 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	$I_{T(RMS)}$	125 Amps	T_C = 87°C
Max. average on-state cur.	$I_{T(AV)}$	80 Amps	T_C = 87°C
Max. peak on-state voltage	V_{TM}	1.4 Volts	I_{TM} = 220 A(peak)
Max. holding current	I_H	200 mA	
Max. peak one cycle surge current	I_{TSM}	1800 A	T_C = 87°C, 60 Hz
Max. I^2t capability for fusing	I^2t	13,500A^2S	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	$R_{\theta JC}$	0.40°C/W Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.20°C/W Case to sink
Mounting torque		100-130 inch pounds
Weight		080-G0A Approx. 3.6 ounces (102.0 grams) typical 080-G0D Approx. 3.24 ounces (91.8 grams) typical

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9-8-00 Rev. 1

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Switching

Critical rate of rise of on-state current (note 1)	di/dt	100A/usec.	T_J = 125°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°C

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

Triggering

Max. gate voltage to trigger	V_{GT}	3.0V	T_J = 25°C
Max. nontriggering gate voltage	V_{GD}	0.25V	T_J = 125°C
Max. gate current to trigger	I_{GT}	100mA	T_J = 25°C
Max. peak gate power	P_{GM}	15W	
Average gate power	$P_{G(AV)}$	3.0W	t_p = 10 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}	10mA	T_J =125°C & V_{DRM}
Max. reverse leakage	I_{RRM}	10mA	T_J =125°C & V_{RRM}
Critical rate of rise of off-state voltage	dv/dt	200V/usec.	T_J =125°C

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Figure 1
Typical Forward On-State Characteristics

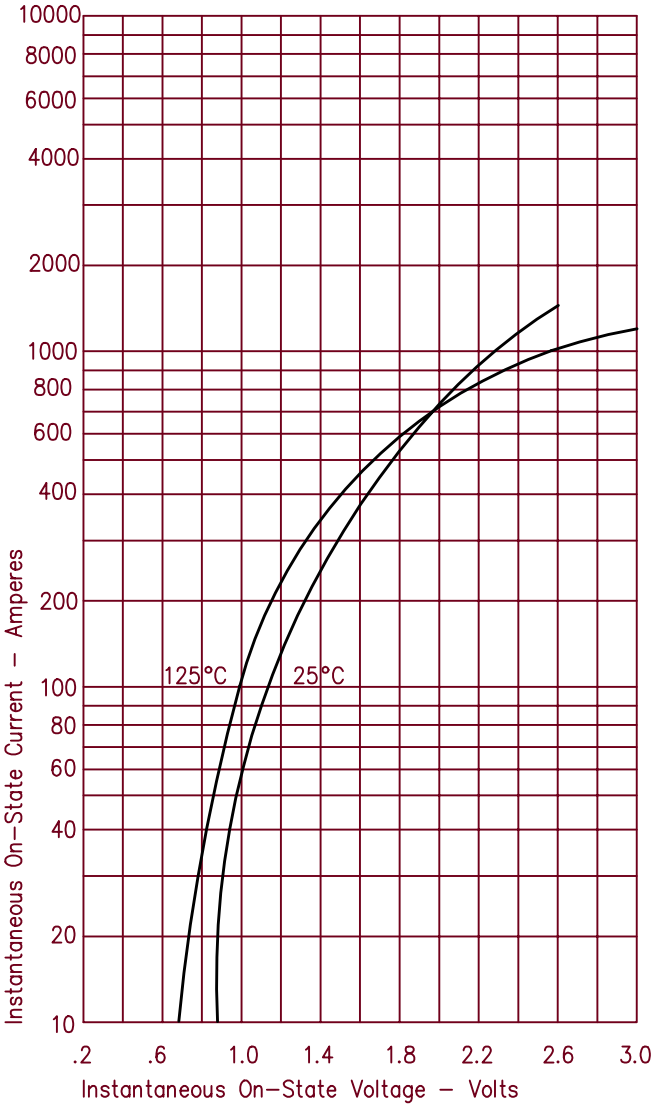

Figure 3
Maximum Power Dissipation

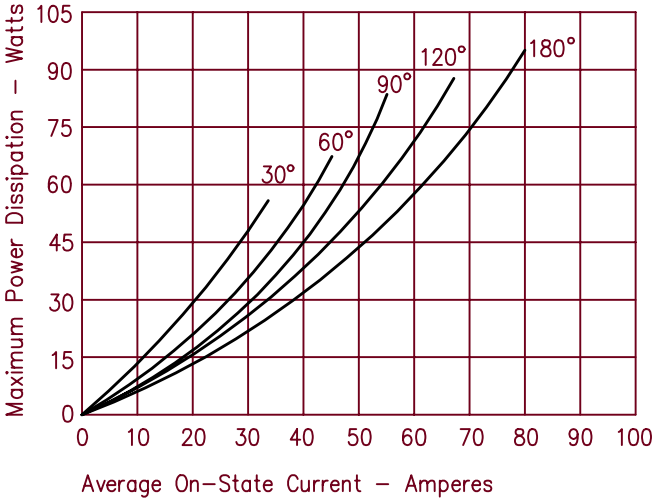

Figure 4
Transient Thermal Impedance

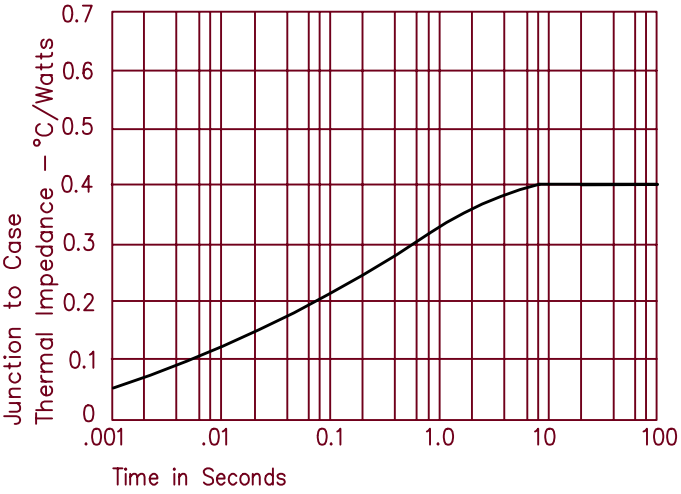

Figure 2
Forward Current Derating

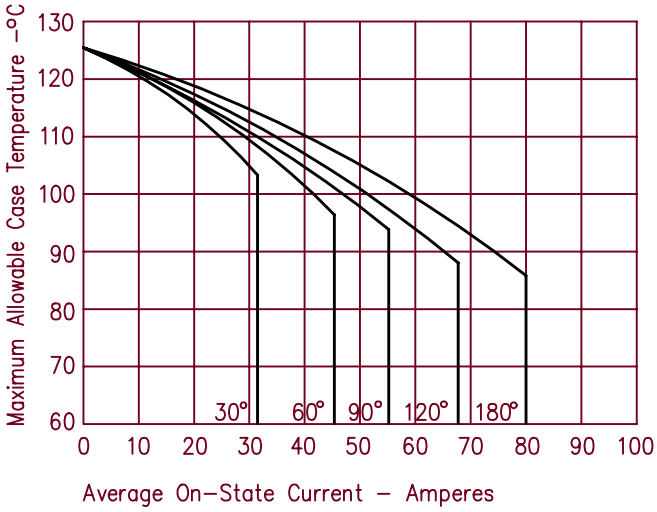

Figure 5
Maximum Nonrepetitive Surge Current