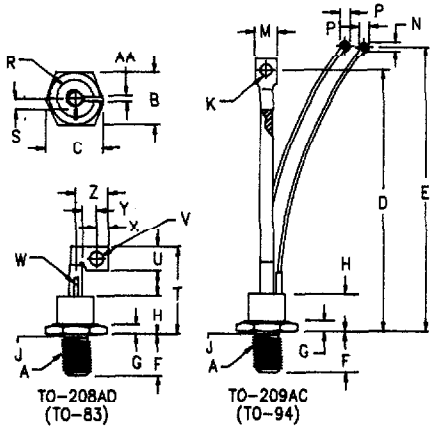


Silicon Controlled Rectifier Series 052



Note 1: 1/2-20 UNF-3A
Note 2: Full thread within 2 1/2 threads

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	.260	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	
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	.080	.000	2.26	2.51	

Microsemi Catalog Number		Forward & Reverse Repetitive Blocking	Reverse Transient Blocking
Standard Lead	Flag Lead		
05202GOA	05202GOD	200	300
05203GOA	05203GOD	300	400
05204GOA	05204GOD	400	500
05205GOA	05205GOD	500	600
05206GOA	05206GOD	600	700

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

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Electrical Characteristics

Max. RMS on-state current	$I_T(\text{RMS})$ 86 Amps	$T_C = 87^\circ\text{C}$
Max. average on-state cur.	$I_T(\text{AV})$ 55 Amps	$T_C = 87^\circ\text{C}$
Max. peak on-state voltage	V_{TM} 1.8 Volts	$I_{TM} = 220 \text{ A(peak)}$
Max. holding current	I_H 200 mA	$T_C = 87^\circ\text{C}, 60 \text{ Hz}$
Max. peak one cycle surge current	I_{TSM} 1200 A	$t = 8.3 \text{ ms}$
Max. i^2t capability for fusing	i^2t 6000A ² S	

Thermal and Mechanical Characteristics

Operating junction temp range	T_J	-40°C to 125°C
Storage temperature range	T_{STG}	-40°C to 150°C
Maximum thermal resistance	$R_{\theta JC}$	0.40°C/W Junction to case
Typical thermal resistance	$R_{\theta CS}$	0.20°C/W Case to sink
Max mounting torque		130 inch pounds maximum
Weight		GOA Approx. 3.6 ounces (102.0 grams) typical GOD Approx. 3.24 ounces (91.8 grams) typical

Microsemi Corp.
Colorado

PH: 303-469-2161
FAX: 303-466-3775

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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.	$T_J = 125^\circ\text{C}$
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	$T_J = 25^\circ\text{C}$
Typical gate voltage to trigger	V_{GT}	1.0V	$T_J = 25^\circ\text{C}$
Max. nontriggering gate voltage	V_{GD}	0.25V	$T_J = 125^\circ\text{C}$
Max. gate current to trigger	I_{GT}	100mA	$T_J = 25^\circ\text{C}$
Typical gate current to trigger	I_{GT}	48mA	$T_J = 25^\circ\text{C}$
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}	20V	
Max. peak gate voltage (reverse)	V_{GM}	10V	

Blocking			
Max. leakage current	I_{DRM}	10mA	$T_J = 125^\circ\text{C} \ \& \ V_{DRM}$
Max. reverse leakage	I_{RRM}	10mA	$T_J = 125^\circ\text{C} \ \& \ V_{RRM}$
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

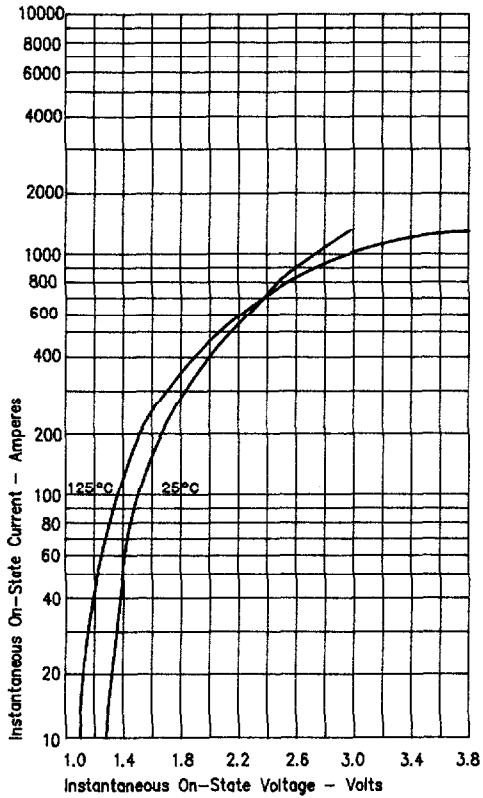


Figure 3
Maximum Power Dissipation

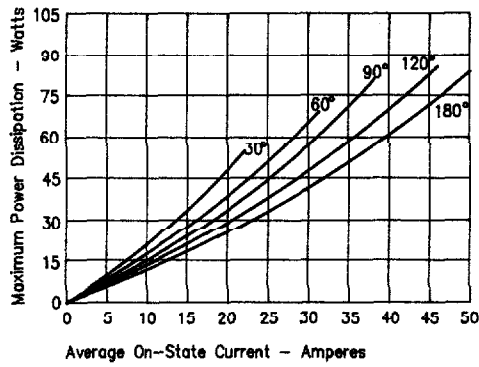


Figure 4
Transient Thermal Impedance

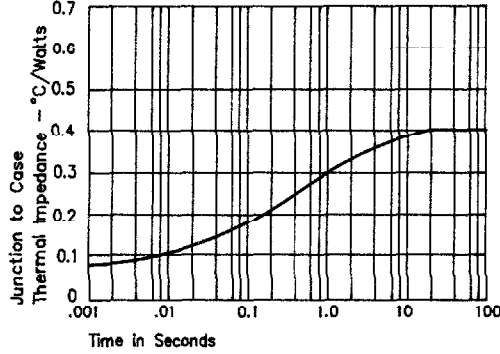


Figure 2
Forward Current Derating

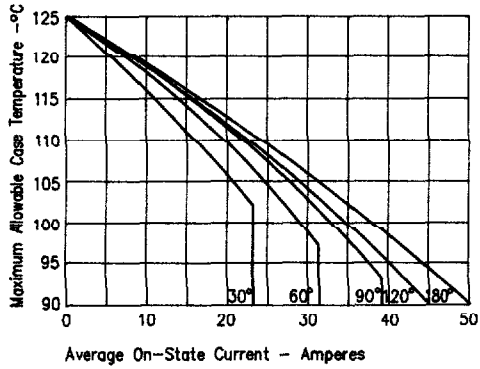


Figure 5
Maximum Nonrepetitive Surge Current

