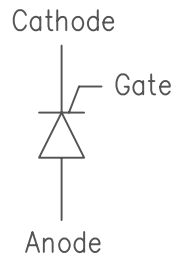
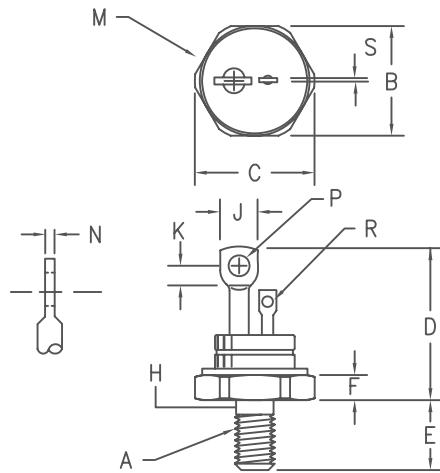


Silicon Controlled Rectifier Series 051



Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	---	---	---	---	1
B	.677	.685	17.20	17.40	
C	---	.770	---	19.56	
D	1.200	1.350	30.48	34.29	
E	.427	.455	10.84	11.55	
F	.115	.155	2.92	3.94	
G	---	.600	---	15.24	
H	.220	.249	5.58	6.32	2
J	.200	.300	5.08	7.62	
K	.120	---	3.05	---	
M	---	.680	---	17.27	Dia.
N	.030	.060	.762	1.52	
P	.170	.180	4.32	4.57	Dia.
R	.055	.065	1.40	1.65	Dia.
S	.025	.030	.64	.76	

Note 1: 1/4-28 UNF-3A

Note 2: Full thread within 2 1/2 threads

TO-208AC (TO-65) CERAMIC

Microsemi
Catalog Number

Forward & Reverse
Repetitive Blocking
VDRM, VRRM

Reverse Transient
Blocking

05102GOF	200	300
05104GOF	400	500
05106GOF	600	700
05108GOF	800	900
05110GOF	1000	1100
05112GOF	1200	1300

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

- dv/dt-200 V/usec
- 1200 Amperes surge current
- Hi-Rel Ceramic Header

Electrical Characteristics

Max. RMS on-state current	$I_{T(RMS)}$ 80 Amps	$T_C = 94^\circ C$
Max. average on-state cur.	$I_{T(AV)}$ 50 Amps	$T_C = 94^\circ C$
Max. peak on-state voltage	V_{TM} 2.5 Volts	$I_{TM} = 500 A(peak)$
Max. holding current	I_H 200 mA	$T_C = 94^\circ C$ 60Hz
Max. peak one cycle surge current	I_{TSM} 1200 Amps	
Max. I^2t capability for fusing	I^2t 6000A ² S	$t = 8.3 ms$

Thermal and Mechanical Characteristics

Operating junction temp range	T_J	-65°C to 150°C
Storage temperature range	T_{STG}	-65°C to 150°C
Maximum thermal resistance	$R_{\theta JC}$	0.35°C/W Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.20°C/W Case to sink
Mounting torque		25-30 inch pounds
Weight		0.63 ounces (18 grams) typical

LAWRENCE
Microsemi
6 Lake Street
Lawrence, MA 01841
PH: (978) 620-2600
FAX: (978) 689-0803
www.microsemi.com

04-24-07 Rev. 2

051

 $T_J = 25^\circ\text{C}$ unless otherwise indicated

Switching

Critical rate of rise of on-state current (note 1)	di/dt	200A/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 timeNote 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	$T_J = 125^\circ\text{C}$
Max. nontriggering gate voltage	V_{GD}	0.25V	
Max. gate current to trigger	I_{GT}	100mA	
Max. peak gate power	P_{GM}	10W	
Average gate power	$P_{G(AV)}$	1.0W	$t_p = 10\text{ usec.}$
Max. peak gate current	I_{GM}	3.0A	
Max. peak gate voltage (forward)	V_{GM}	20V	
Max. peak gate voltage (reverse)	V_{GM}	10V	

Blocking

Max. leakage current	I_{DRM}	6mA	$T_J = 125^\circ\text{C}$ & V_{DRM}
Max. reverse leakage	I_{RRM}	6mA	$T_J = 125^\circ\text{C}$ & 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

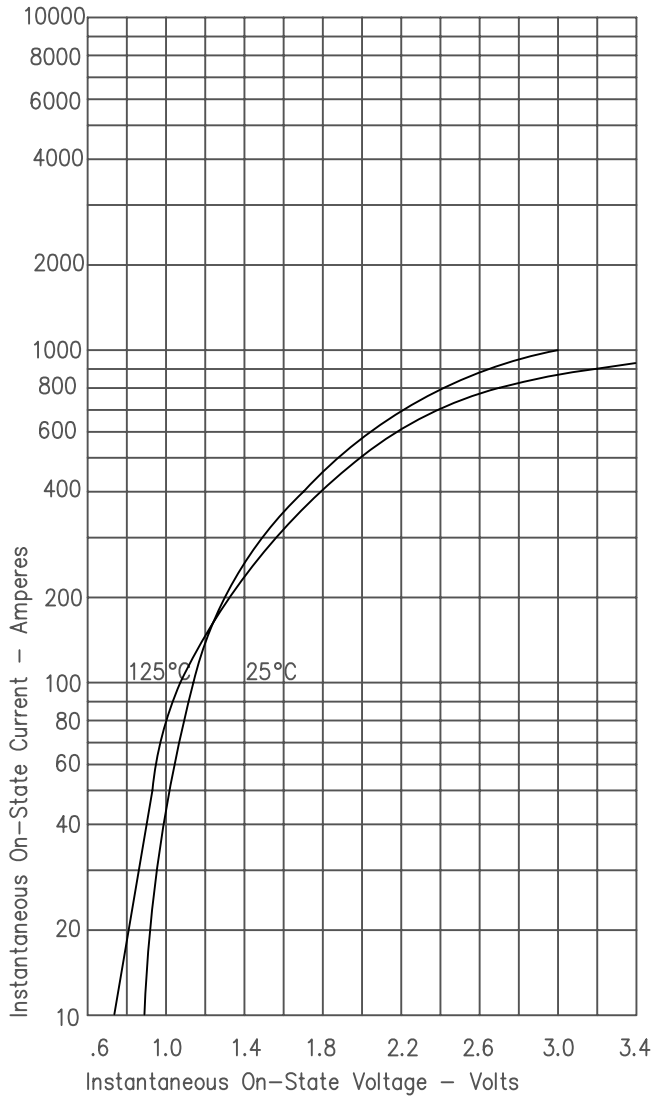


Figure 3
Maximum Power Dissipation

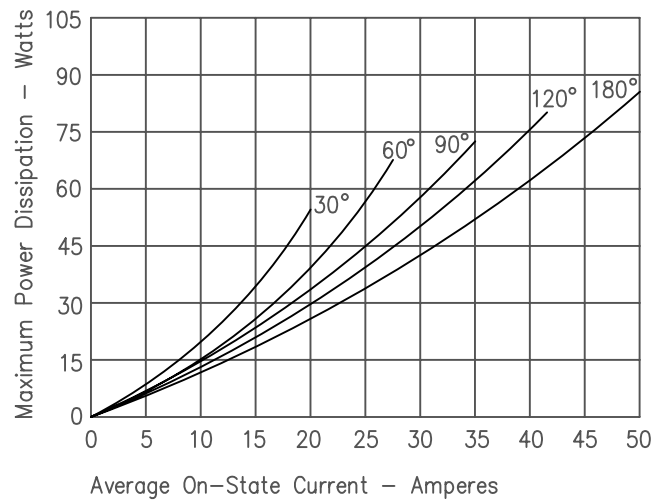


Figure 4
Transient Thermal Impedance

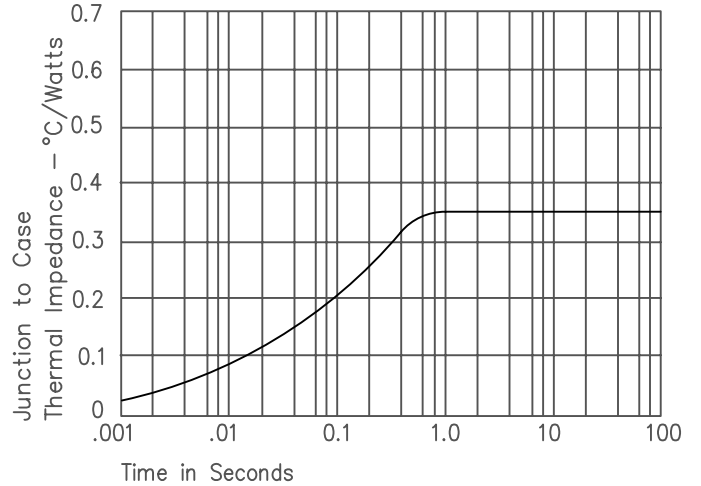


Figure 2
Forward Current Derating

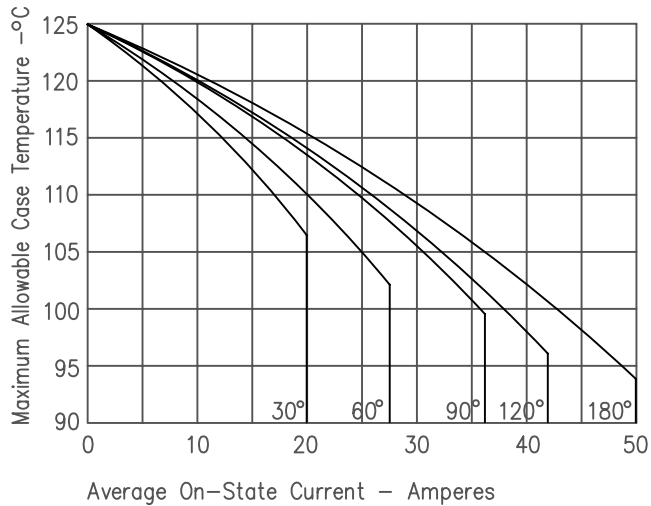


Figure 5
Maximum Nonrepetitive Surge Current

