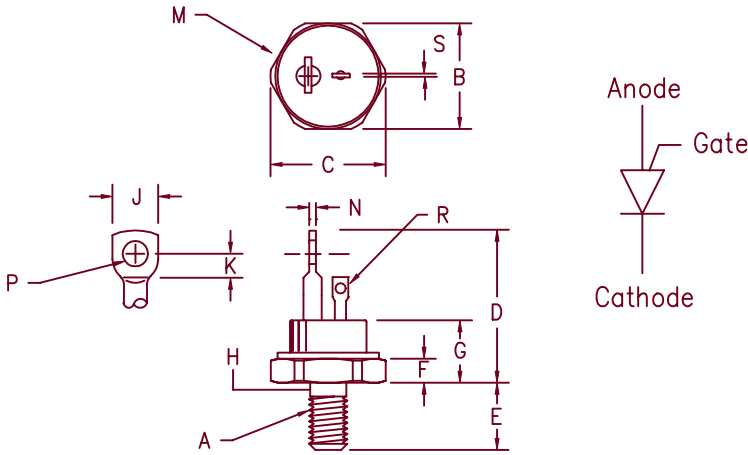


Anode Gate Silicon Controlled Rectifier Series 050R



Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	---	---	---	---	1
B	.677	.685	17.20	17.40	
C	---	.770	---	19.56	
D	1.200	1.250	30.48	31.75	
E	.427	.447	10.84	11.35	
F	.115	.155	2.92	3.94	
G	---	.515	---	13.08	
H	.220	.249	5.58	6.32	2
J	.200	.300	5.08	7.62	
K	.120	---	3.05	---	
M	---	.667	---	16.94	Dia.
N	.065	.085	1.65	2.15	
P	.145	.155	3.68	3.93	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)

Microsemi
Catalog Number

050R02GOF
050R04GOF
050R06GOF
050R08GOF
050R10GOF
050R12GOF

Forward & Reverse
Repetitive Blocking
VDRM, VRRM

200
400
600
800
1000
1200

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

- dv/dt-200 V/usec
- 1200 Amperes surge current
- Economical for medium power applications
- Compact TO-208AC package

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} 1.5 Volts	$I_{TM} = 200 A(peak)$
Max. holding current	I_H 200 mA	
Max. peak one cycle surge current	I_{TSM} 1200 Amps	$T_C = 94^\circ C$ 60Hz
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 125°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		0.56 ounces (16 grams) typical

3-31-03 Rev. 2



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Broomfield, CO. 80020
PH: (303) 469-2161
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www.microsemi.com

050R

$T_J = 25^\circ\text{C}$ 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: $I_{TM} = 50\text{A}$, $V_D = V_{DRM}$. $G_T = 12\text{V}$ 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 – Third Quadrant

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	PGM	10W	
Average gate power	PG(AV)	1.0W	$t_p = 10$ usec.

NOTE: Triggering in the third quadrant requires a series gate current limiting resistor for 200mA and diode protection.

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.	$T_J = 125^\circ\text{C}$

050R

Figure 1
Typical Forward On-State Characteristics

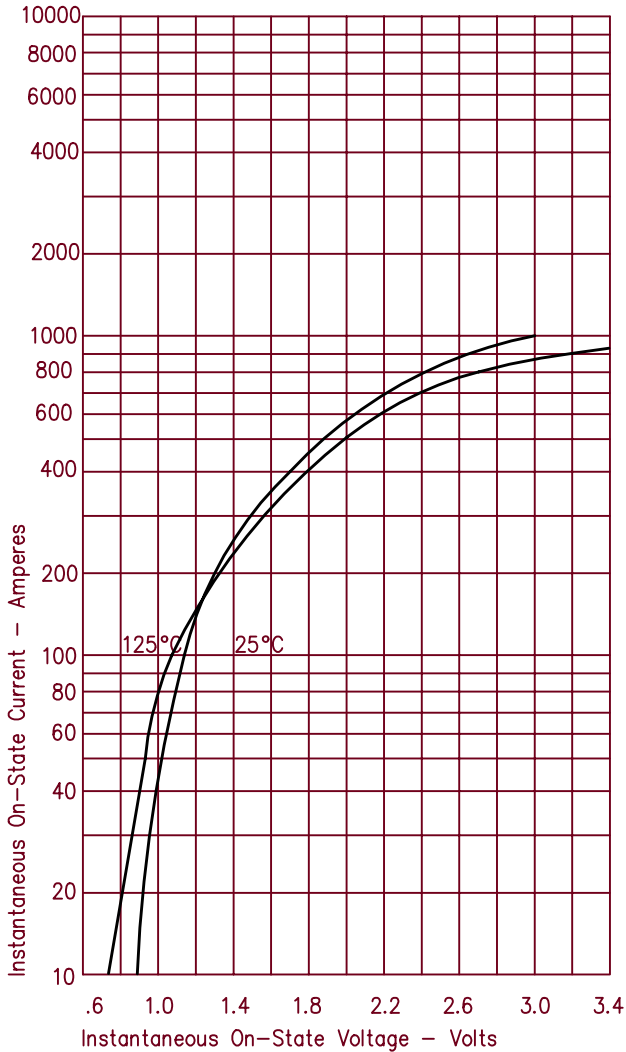


Figure 3
Maximum Power Dissipation

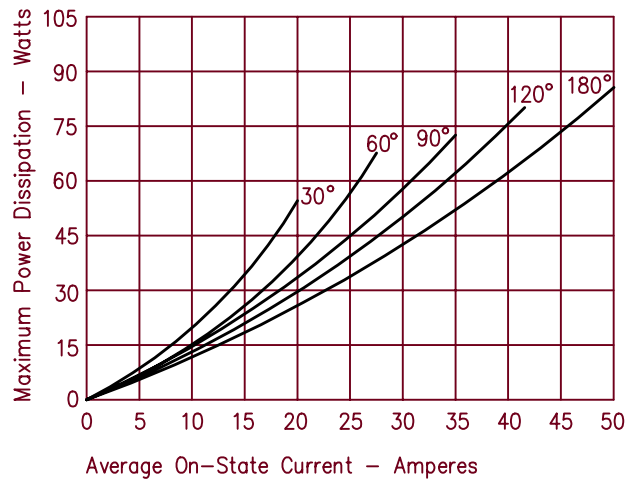


Figure 4
Transient Thermal Impedance

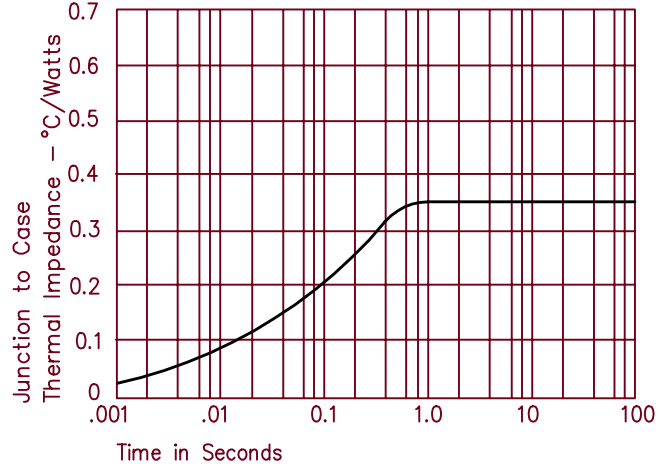


Figure 2
Forward Current Derating

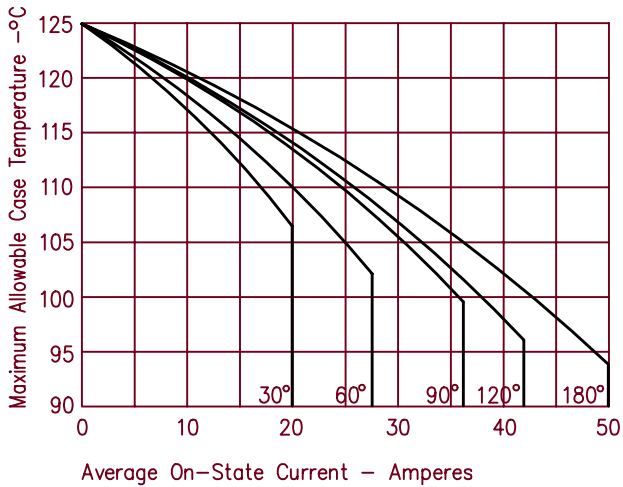


Figure 5
Maximum Nonrepetitive Surge Current

