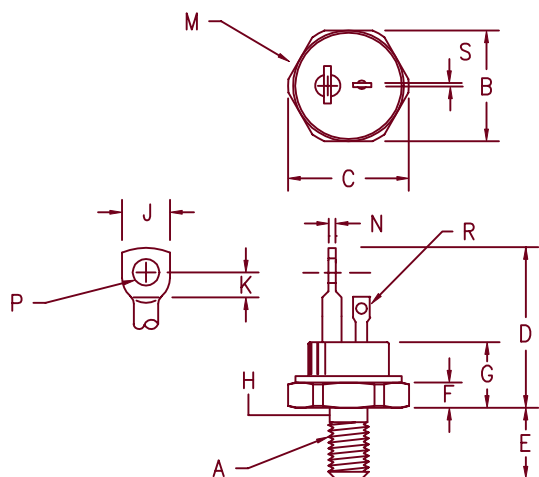


# Silicon Controlled Rectifier Series 050



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

Note 2: Full thread within 2 1/2 threads

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	

TO-208AC (TO-65)

Microsemi Catalog Number	Forward & Reverse Repetitive Blocking VDRM, VRRM	Reverse Transient Blocking
05002GOF	200	300
05004GOF	400	500
05006GOF	600	700
05008GOF	800	900
05010GOF	1000	1100
05012GOF	1200	1300

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	$V_{TM}$ 2.3 Volts	$I_{TM} = 500 \text{ A(peak)}$
Max. holding current	$I_H$ 200 mA	$T_C = 94^\circ C$ 60Hz
Max. peak one cycle surge current	$I_{TSM}$ 1200 Amps	$t = 8.3 \text{ ms}$
Max. $I^2t$ capability for fusing	$I^2t$ 6000A <sup>2</sup> S	

## 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

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$T_J = 25^\circ\text{C}$  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:  $I_{TM} = 50\text{A}$ ,  $V_D = V_{DRM}$ .  $GT = 12\text{V}$  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	$T_J = 125^\circ\text{C}$
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

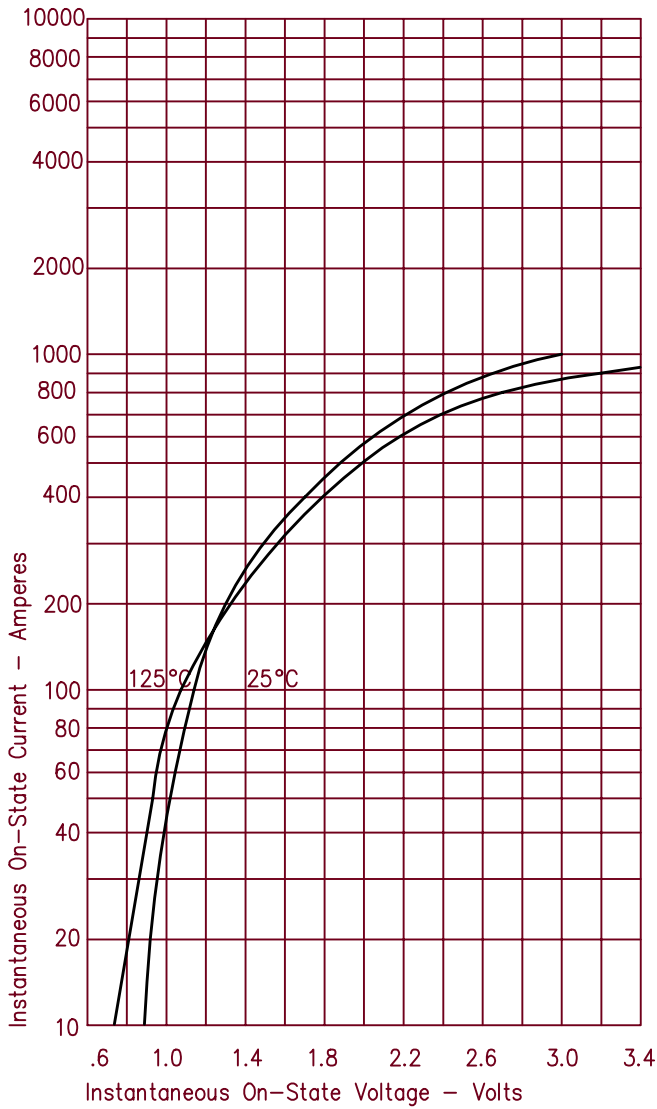


Figure 3  
Maximum Power Dissipation

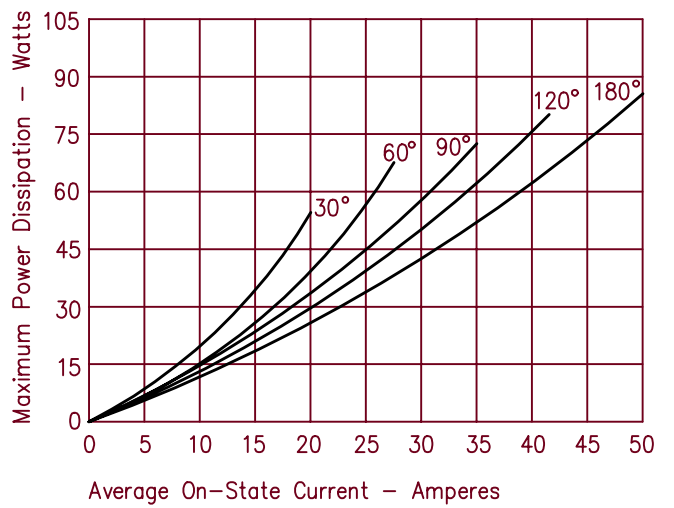


Figure 4  
Transient Thermal Impedance

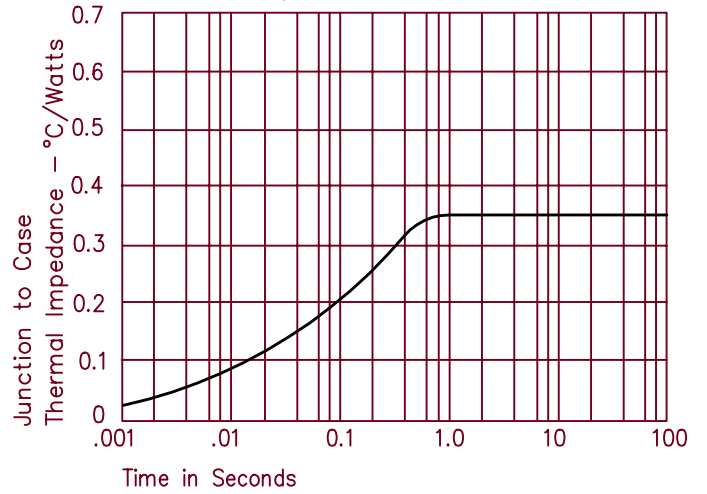


Figure 2  
Forward Current Derating

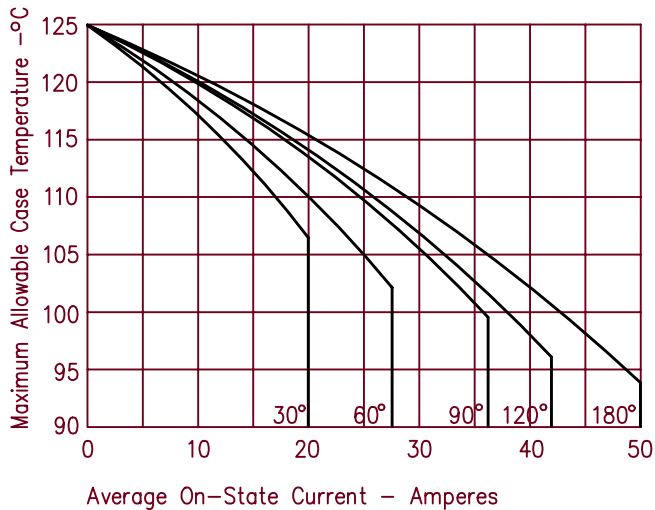


Figure 5  
Maximum Nonrepetitive Surge Current

