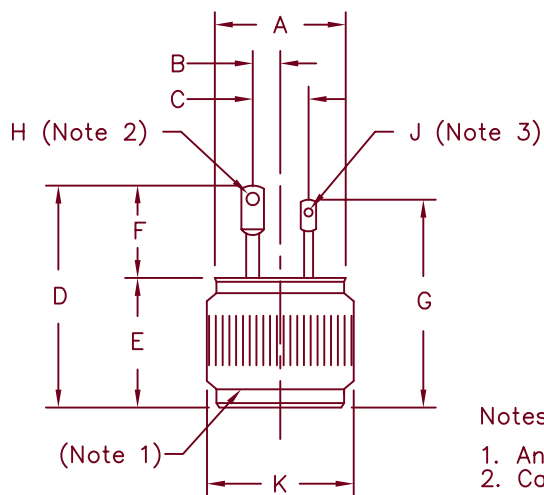


Silicon Controlled Rectifier Series 023



Notes:

1. Anode connected to case
2. Cathode terminal
3. Gate terminal

	Dim. Inches		Millimeters		Notes
	Min.	Max.	Min.	Max.	
A	0.495	0.505	12.57	12.83	
B	0.068	0.080	1.73	2.03	
C	0.150	0.160	3.81	4.06	
D	0.705	0.754	17.91	19.15	
E	0.350	0.374	8.89	9.50	
F	0.345	0.380	8.76	9.65	
G	0.600	0.714	15.24	18.14	
H	0.070	0.087	1.78	2.21	Dia.
J	0.050	0.065	1.27	1.65	Dia.
K	0.500	0.503	12.54	12.78	Dia.

Microsemi Catalog Number	Forward & Reverse Repetitive Blocking	Reverse Transient Blocking
0230200L	200V	200V
0230300L	300V	300V
0230400L	400V	400V
0230500L	500V	500V
0230600L	600V	600V

- dv/dt – 200V/ μ S
- 300 Amperes surge current
- Low forward on-state voltage
- Economical for medium power applications
- V_{DRM}/V_{RRM} 200V to 600V

Electrical Characteristics

Max average on-state current
Max peak on-state voltage
Max holding current
Max peak one cycle surge current
Max I^2t capability for fusing

$I_{T(AV)}$ 23 Amps
 V_{FM} 1.8 Volts
 I_H 80 mA
 I_{TSM} 300 A
 I^2t 370 A²s

$T_C = 68^\circ\text{C}$ sine wave, $R_{\theta JC} = 1.65^\circ\text{C/W}$
 $I_T = 100\text{A}; T_J = 25^\circ\text{C}$
 $T_J = 125^\circ\text{C}$, 8.3mS pulse
 $t = 8.3\text{mS}$

Thermal and Mechanical Characteristics

Storage temp range
Operating junction temp range
Max thermal resistance
Typical thermal resistance
Weight

T_{STG}
 T_J
 $R_{\theta JC}$
 $R_{\theta CS}$

-55°C to 125°C
 -55°C to 125°C
 1.65°C/W junction to case
 1.0°C/W case to sink
0.255 ounces (7.23 grams) typical



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04-24-07 Rev.4

Series 023

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	0.5 usec.	
Typical rise time (note 1)	t_r	3.0 usec.	
Typical turn-on time	t_o	3.5 usec.	
Typical circuit commuted turn-off time (note 2)	t_q	50 usec.	$T_J = 125^\circ\text{C}$

Note 1: $I_{TM} = 20\text{A}$, $V_D = V_{DRM}$, $V_{GT} = 12\text{V}$ open circuit, 20 ohm—0.1 usec. rise time
 Note 2: $I_{TM} = 20\text{A}$, $di/dt = 5\text{A/usec.}$, $V_R = 50\text{V}$, $dv/dt = 20\text{V/usec.}$, Rated V_{DRM}

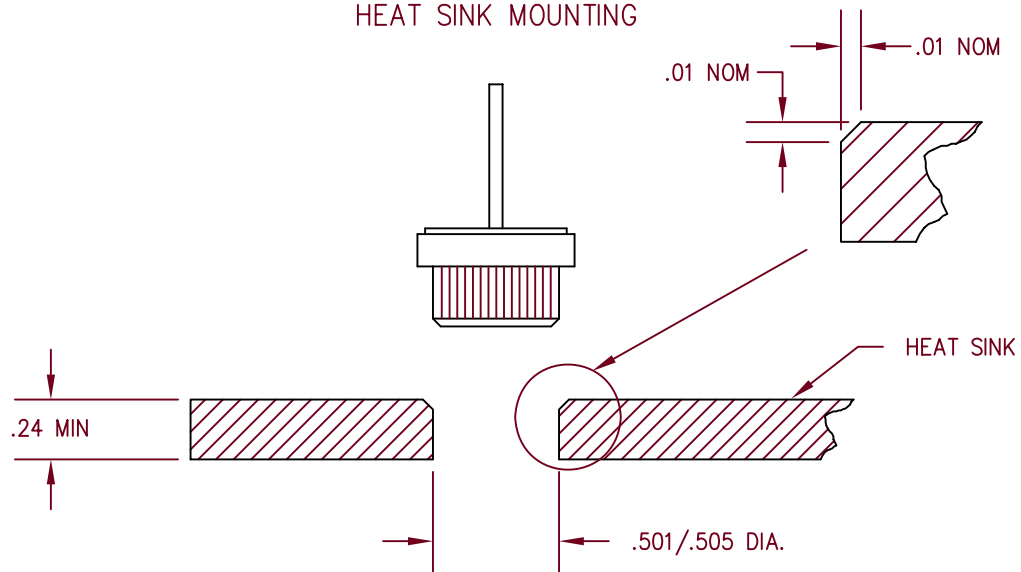
Triggering

Max. gate trigger voltage	V_{GT}	2.0V	$T_J = 125^\circ\text{C}$
Max. nontriggering gate voltage	V_{GD}	0.25V	
Max. gate trigger current	I_{GT}	40mA	
Max. peak gate power	P_{GM}	5.0W	
Average gate power	$P_{G(AV)}$	0.5W	
Max. peak gate current	I_{GM}	3.0A	
Max. peak gate voltage (forward)	V_{GM}	10.0V	
Max. peak gate voltage (reverse)	V_{GM}	5.0V	

Blocking

Max. forward leakage current	I_{DRM}	10uA	V_{DRM} , $T_J = 25^\circ\text{C}$
Max. reverse leakage current	I_{RRM}	10uA	V_{RRM} , $T_J = 25^\circ\text{C}$
Max. forward leakage current	I_{DRM}	3.0mA	V_{DRM} , $T_J = 125^\circ\text{C}$
Max. reverse leakage current	I_{RRM}	3.0mA	V_{RRM} , $T_J = 125^\circ\text{C}$
Critical rate of rise of off-state voltage	dv/dt	200V/usec.	$T_J = 125^\circ\text{C}$

HEAT SINK MOUNTING



Series 023

Figure 1
Typical Forward Characteristics

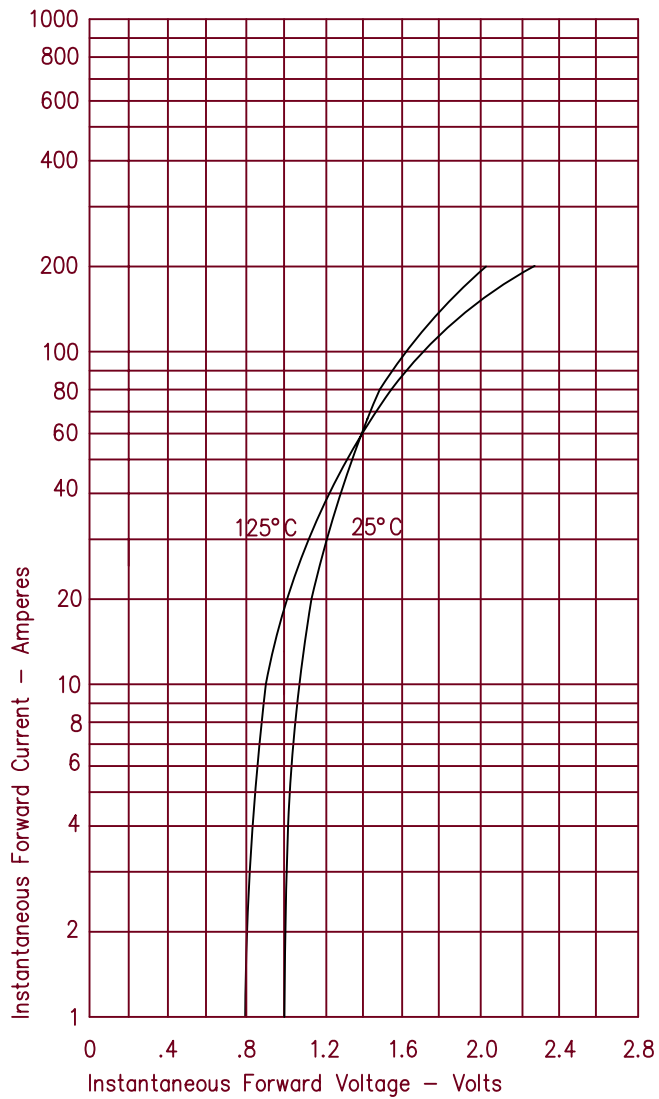


Figure 3
Maximum Forward Power Dissipation

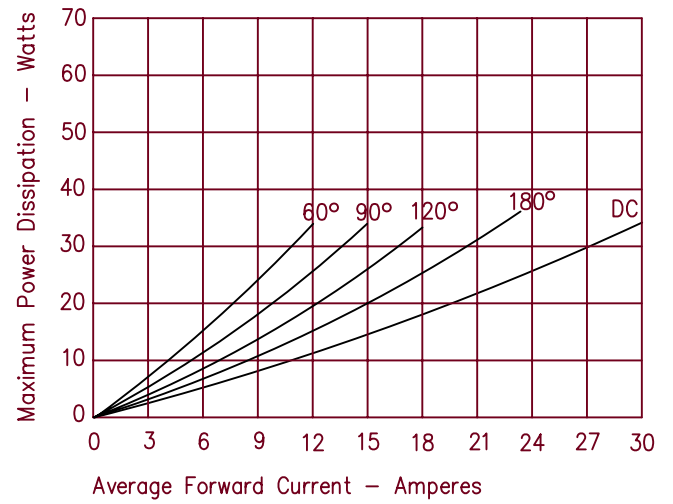


Figure 2
Forward Current Derating

