

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Peak forward or reverse blocking current⁽²⁾ ($V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}, R_{GK} = 1k\Omega$) $T_C = 25^\circ\text{C}$ $T_C = 110^\circ\text{C}$	I_{DRM} I_{RRM}	- -	- -	10 500	μA
ON CHARACTERISTICS					
Peak forward on-state voltage ($I_{TM} = 16\text{A}$, pulse width $\leq 1\text{ms}$, duty cycle $\leq 2\%$)	V_{TM}	-	1.7	2.0	V
Gate trigger current (continuous dc)⁽³⁾ ($V_D = 12\text{V}$, $R_L = 100\Omega$)	I_{GT}	-	30	200	μA
Gate trigger voltage (continuous dc)⁽³⁾ ($V_D = 12\text{V}$, $R_L = 100\Omega$)	V_{GT}	-	0.5	1.5	V
Gate non-trigger voltage ($V_D = 12\text{V}$, $R_L = 100\Omega$, $T_J = 110^\circ\text{C}$)	V_{GD}	0.1	-	-	V
Holding current ($V_D = 12\text{V}$, gate open, initiating current = 200mA)	I_H	-	-	6.0	mA
Gate controlled turn-on time ($V_D = \text{Rated } V_{DRM}$, $I_{TM} = 16\text{A}$, $I_G = 2\text{mA}$)	t_{gt}	-	1.0	-	μs
DYNAMIC CHARACTERISTICS					
Critical rate of rise of off-state voltage ($V_D = \text{rated } V_{DRM}$, $R_{GK} = 1k\Omega$, $T_J = 110^\circ\text{C}$, exponential waveform)	dv/dt	-	10	-	V/ μs

THERMAL CHARACTERISTICS

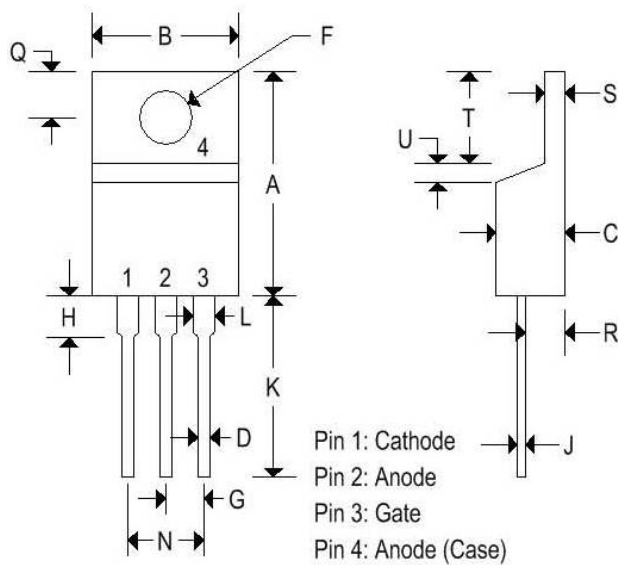
Characteristic	Symbol	Maximum	Unit
Thermal resistance, junction to case	$R_{\theta JC}$	2.0	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
Peak forward or reverse blocking current ($V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}, \text{ gate open}$) $T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	I_{DRM} or I_{RRM}	- -	- -	10 2.0	μA mA
ON CHARACTERISTICS					
Peak forward on-state voltage ($I_{TM} = 24\text{A peak}$)	V_{TM}	-	1.7	2.2	Volts
Gate trigger current (continuous dc) ($V_D = 12\text{ Vdc}, R_L = 100\ \Omega$)	I_{GT}	-	5.0	30	mA
Gate trigger voltage (continuous dc) ($V_D = 12\text{ Vdc}, R_L = 100\ \Omega$)	V_{GT}	-	0.7	1.5	Volts
Gate non-trigger voltage ($V_D = \text{Rated } V_{DRM}, R_L = 100\ \Omega, T_J = 125^\circ\text{C}$)	V_{GD}	0.2	-	-	Volts
Holding current ($V_D = 12\text{Vdc}$)	I_H	-	6.0	40	mA
Turn on time ($I_{TM} = 12\text{A}, I_{GT} = 40\text{mAdc}, V_D = \text{rated } V_{DRM}$)	t_{gt}	-	1.0	2.0	μs
Turn-off time ($V_D = \text{rated } V_{DRM}$) ($I_{TM} = 12\text{A}, I_R = 12\text{A}$) ($I_{TM} = 12\text{A}, I_R = 12\text{A}, T_J = 125^\circ\text{C}$)	t_q	- -	15 35	- -	μs
DYNAMIC CHARACTERISTICS					
Critical rate of rise of off-state voltage exponential ($V_D = \text{rated } V_{DRM}, T_J = 125^\circ\text{C}$)	dv/dt	-	50	-	$\text{V}/\mu\text{s}$

MECHANICAL CHARACTERISTICS

Case:	TO-220AB
Marking:	Body painted, alpha-numeric
Pin out:	See below



	TO-220AB			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.575	0.620	14.600	15.750
B	0.380	0.405	9.650	10.290
C	0.160	0.190	4.060	4.820
D	0.025	0.035	0.640	0.890
F	0.142	0.147	3.610	3.730
G	0.095	0.105	2.410	2.670
H	0.110	0.155	2.790	3.930
J	0.014	0.022	0.360	0.560
K	0.500	0.562	12.700	14.270
L	0.045	0.055	1.140	1.390
N	0.190	0.210	4.830	5.330
Q	0.100	0.120	2.540	3.040
R	0.080	0.110	2.040	2.790
S	0.045	0.055	1.140	1.390
T	0.235	0.255	5.970	6.480
U	-	0.050	-	1.270
V	0.045	-	1.140	-
Z	-	0.080	-	2.030

Voltage Current Characteristic of SCR

Symbol	Parameter
V_{DRM}	Peak Repetitive Off State Forward Voltage
I_{DRM}	Peak Forward Blocking Current
V_{RRM}	Peak Repetitive Off State Reverse Voltage
I_{RRM}	Peak Reverse Blocking Current
V_{TM}	Peak On State Voltage
I_H	Holding Current

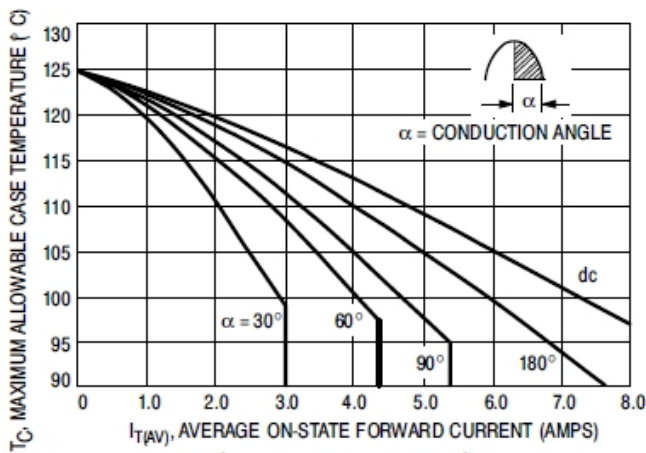
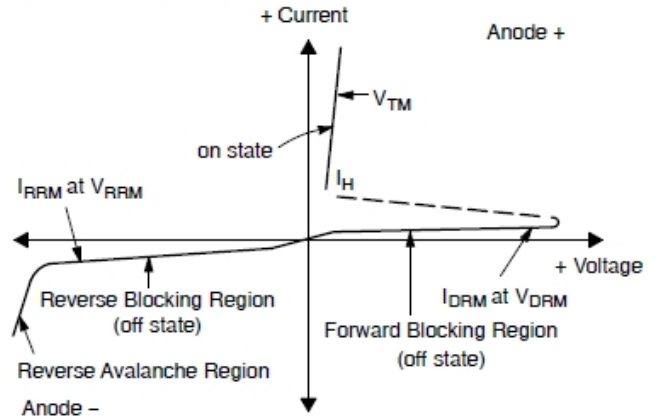


Figure 1. Current Derating

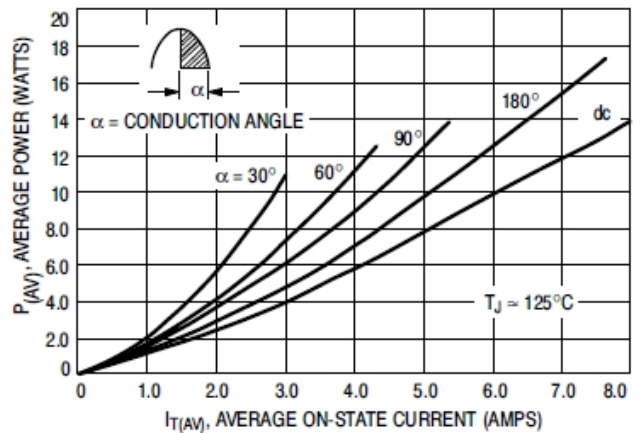


Figure 2. Maximum On-State Power Dissipation

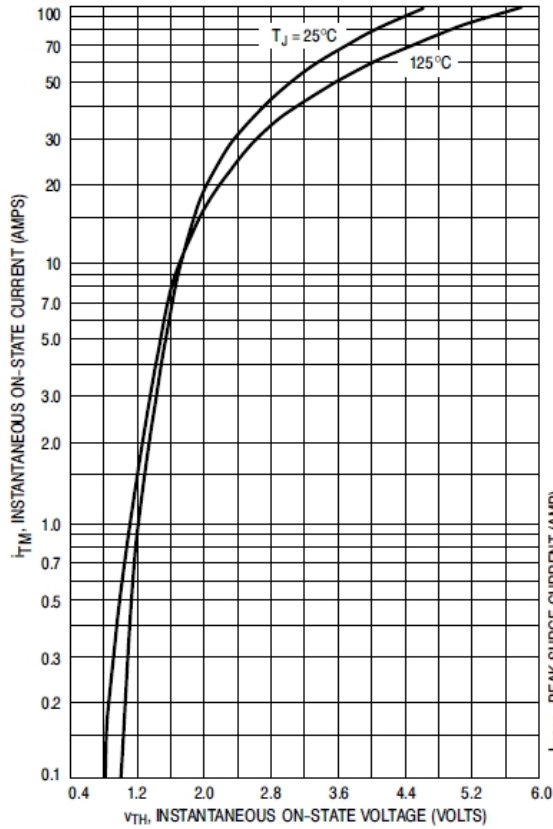


Figure 3. On-State Characteristics

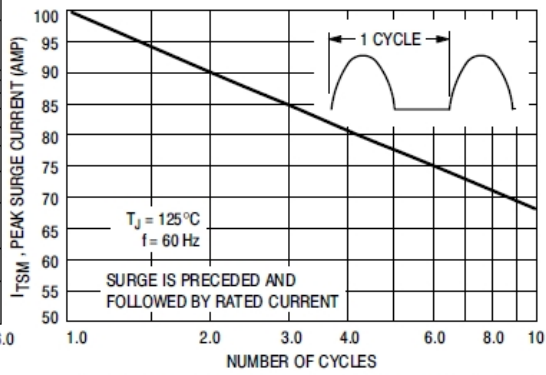


Figure 4. Maximum Non-Repetitive Surge Current

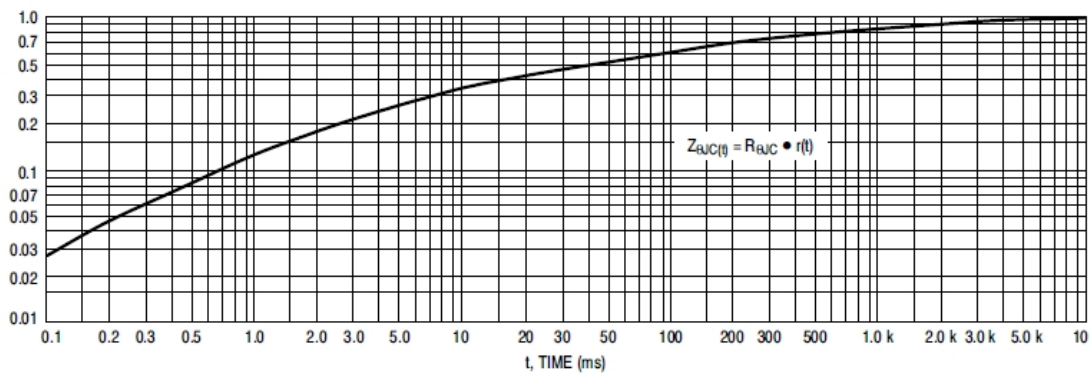


Figure 5. Thermal Response

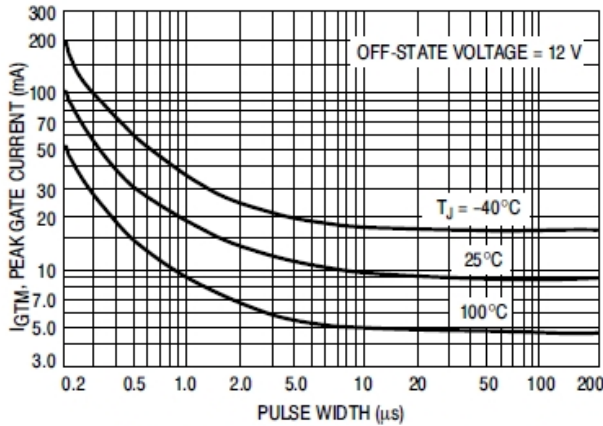


Figure 6. Typical Gate Trigger Current versus Pulse Width

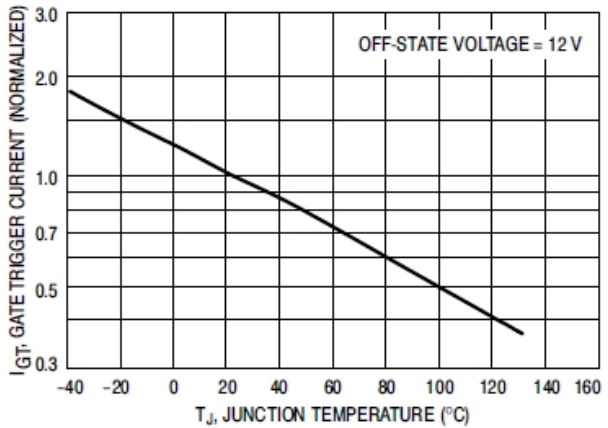


Figure 7. Typical Gate Trigger Current versus Temperature

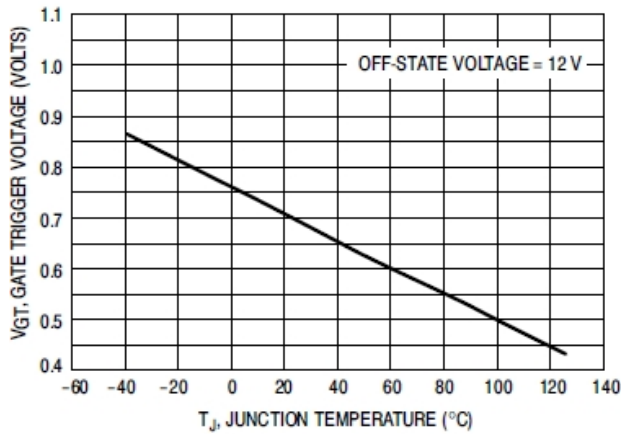


Figure 8. Typical Gate Trigger Voltage versus Temperature

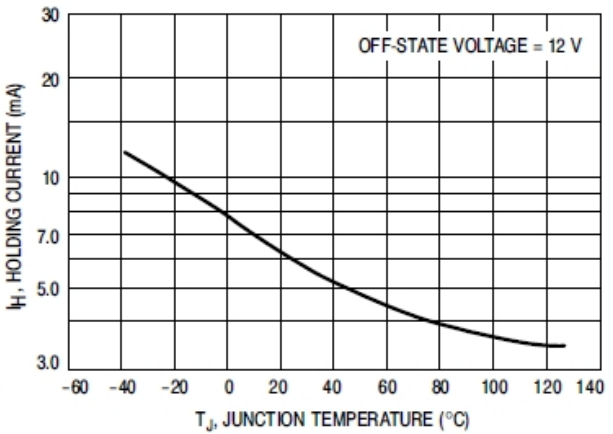


Figure 9. Typical Holding Current versus Temperature