THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	1.5	°C/W
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	60	°C/W
Maximum Lead Temperature for Soldering Purposes 1/8 in from Case for 10 Seconds	T_L	260	°C

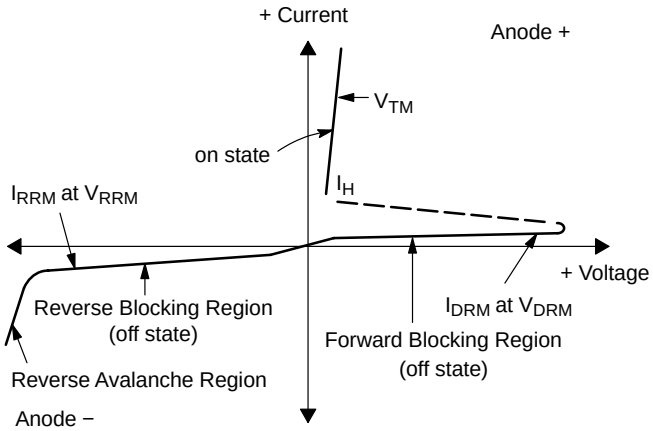
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Peak Repetitive Forward or Reverse Blocking Current (V_{AK} = Rated V_{DRM} or V_{RRM}, Gate Open) T_J = 25°C T_J = 125°C	I_{DRM}, I_{RRM}	− −	− −	10 2.0	μA mA
ON CHARACTERISTICS					
Peak Forward On-State Voltage (I_{TM} = 50 A) (Note 4) (I_{TM} = 750 A, t_w = 1 ms) (Note 5)	V_{TM}	− −	− 6.0	1.8 −	V
Gate Trigger Current (Continuous dc) (V_D = 12 V, R_L = 100 Ω)	I_{GT}	2.0	7.0	30	mA
Gate Trigger Voltage (Continuous dc) (V_D = 12 V, R_L = 100 Ω)	V_{GT}	−	0.65	1.5	V
Gate Non−Trigger Voltage (V_D = 12 Vdc, R_L = 100 Ω, T_J = 125°C)	V_{GD}	0.2	0.40	−	V
Holding Current (V_D = 12 V, Initiating Current = 200 mA, Gate Open)	I_H	3.0	15	50	mA
Latching Current (V_D = 12 Vdc, I_G = 150 mA)	I_L	−	−	60	mA
Gate Controlled Turn-On Time (Note 6) (V_D = Rated V_{DRM}, I_G = 150 mA) (I_{TM} = 50 A Peak)	t_{gt}	−	1.0	−	μs
DYNAMIC CHARACTERISTICS					
Critical Rate-of-Rise of Off-State Voltage (V_D = Rated V_{DRM}, Gate Open, Exponential Waveform, T_J = 125°C)	dv/dt	10	−	−	V/μs
Critical Rate-of-Rise of On-State Current I_G = 150 mA T_J = 125°C	di/dt	−	−	100	A/μs

4. Pulse duration ≤ 300 μs, duty cycle ≤ 2%.
5. Ratings apply for t_w = 1 ms. See Figure 1 for I_{TM} capability for various durations of an exponentially decaying current waveform. t_w is defined as 5 time constants of an exponentially decaying current pulse.
6. The gate controlled turn-on time in a crowbar circuit will be influenced by the circuit inductance.

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



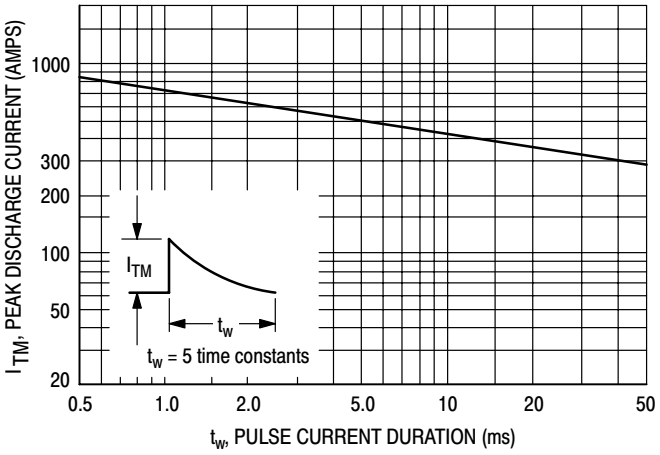


Figure 1. Peak Capacitor Discharge Current

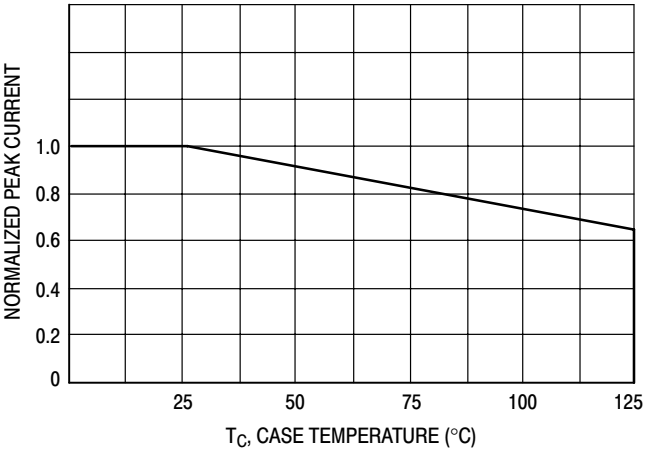


Figure 2. Peak Capacitor Discharge Current Derating

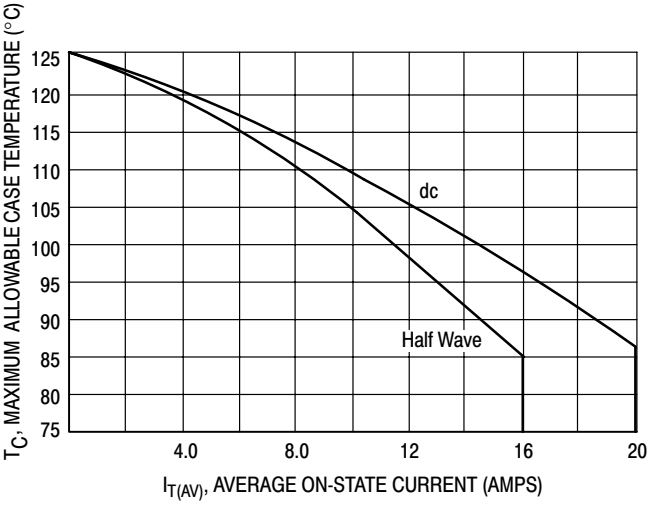


Figure 3. Current Derating

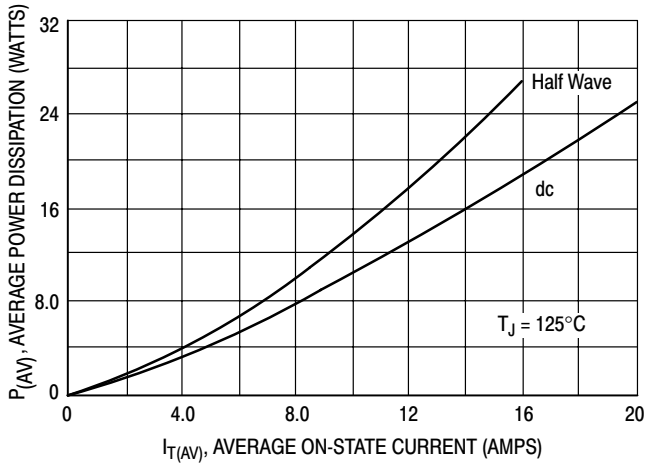


Figure 4. Maximum Power Dissipation

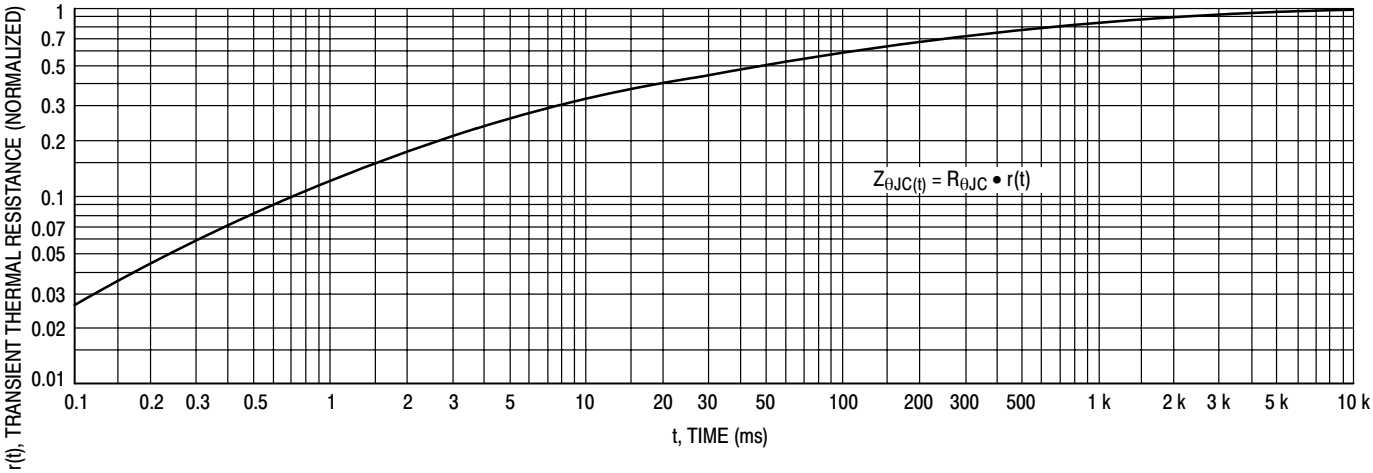


Figure 5. Thermal Response

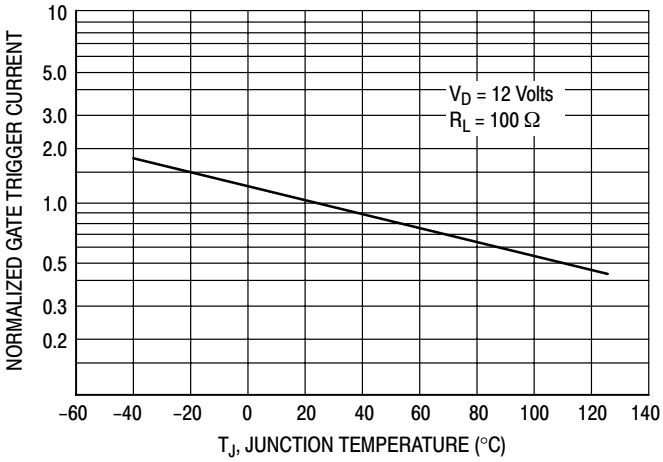


Figure 6. Gate Trigger Current

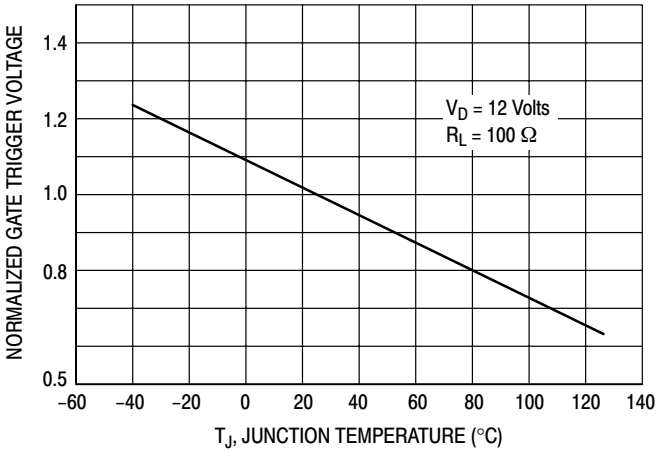


Figure 7. Gate Trigger Voltage

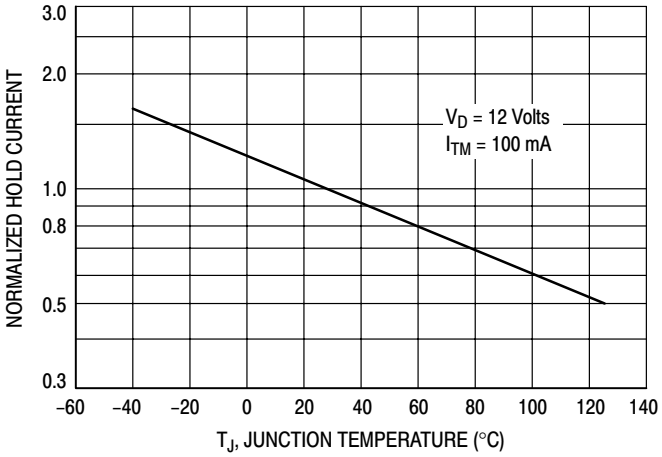
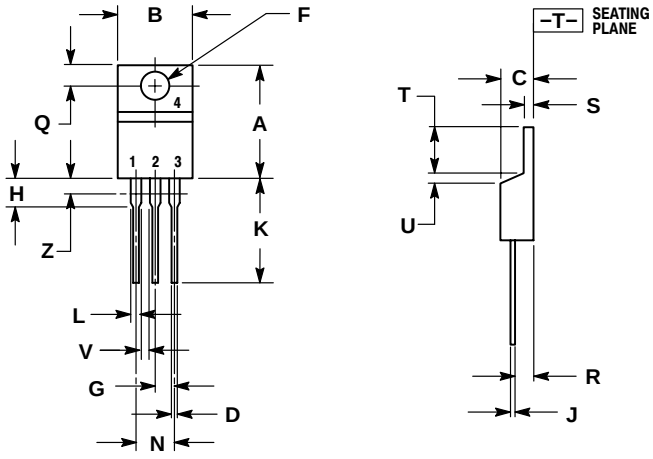


Figure 8. Holding Current

PACKAGE DIMENSIONS

TO−220AB
CASE 221A−07
ISSUE AA



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.014	0.022	0.36	0.55
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

STYLE 3:
PIN 1. CATHODE
2. ANODE
3. GATE
4. ANODE

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