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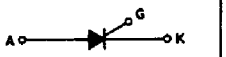
Silicon Controlled Rectifier
Reverse Blocking Triode Thyristor

C228
C228( )3
C229
Series

SCRs
35 AMPERES RMS
100 thru 600 VOLTS

. . . designed for industrial and consumer applications such as power supplies, battery chargers, temperature, motor, light and welder controls.

- Economical for a Wide Range of Uses
- High Surge Current — I_{TSM} = 300 Amps
- Low Forward "On" Voltage — 1.2 V (Typ) @ I_{TM} = 35 Amps
- Practical Level Triggering and Holding Characteristics — 10 mA (Typ) @ T_C = 25°C
- Rugged Construction in Either Pressfit, Stud, or Isolated Stud Packages
- Glass Passivated Junctions for Maximum Reliability



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Repetitive Peak Off-State Voltage, Note 1 (T_J = −40 to +125°C) C228A, C228A3, C229A C228B, C228B3, C229B C228D, C228D3, C229D C228M, C228M3, C229M	V_{DRM} and V_{RRM}	 100 200 400 600	Volts
Non-Repetitive Reverse Voltage (T_J = −40 to +125°C) C228A, C228A3, C229A C228B, C228B3, C229B C228D, C228D3, C229D C228M, C228M3, C229M	V_{RSM}	 150 300 500 720	Volts
Forward Current RMS	$I_{T(RMS)}$	35	Amps
Peak Surge Current (One Cycle, 60 Hz, T_C = −40 to +125°C)	I_{TSM}	300	Amps
Circuit Fusing Considerations (T_C = −40 to +125°C, t = 1 to 8.3 ms)	I^2t	370	A^2s
Peak Gate Power	P_{GM}	5	Watts
Average Gate Power	$P_{G(AV)}$	0.5	Watt
Peak Forward Gate Current	I_{GM}	2	Amps
Operating Junction Temperature Range	T_J	−40 to +125	°C
Storage Temperature Range	T_{stg}	−40 to +150	°C
Stud Torque	—	30	in. lb.

Note 1. V_{DRM} and V_{RRM} for all types can be applied on a continuous dc basis without incurring damage. Ratings apply for zero or negative gate voltage. Devices shall not have a positive bias applied to the gate concurrently with a negative potential on the anode.



CASE 310-02
C229 Series



CASE 263-04
C228 Series



CASE 311-02
C228( )3 Series

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

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THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case C228 and C229 Series C228( )3 Series	$R_{\theta JC}$	 1.7 1.85	°C/W

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

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current (Rated V_{DRM} or V_{RRM}, gate open) T_C = 25°C T_C = 125°C	I_{DRM}, I_{RRM}	 —	 —	10 3	μA mA
Forward "On" Voltage (I_{TM} = 100 A Peak)	V_{TM}	—	—	1.9	Volts
Gate Trigger Current (Continuous dc) (V_D = 12 Vdc, R_L = 80 Ohms, T_C = 25°C) (V_D = 6 Vdc, R_L = 50 Ohms, T_C = −40°C)	I_{GT}	 — —	 — —	 40 80	mA
Gate Trigger Voltage (Continuous dc) (V_D = 12 Vdc, R_L = 80 Ohms, T_C = 25°C) (V_D = 6 Vdc, R_L = 80 Ohms, T_C = −40°C)	V_{GT}	 — —	 — —	 2.5 3	Volts
Gate Trigger Voltage (Rated V_{DRM}, R_L = 1000 Ohms, T_C = +125°C)	V_{GT}	0.2	—	—	Volts
Holding Current T_C = 25°C (Anode Voltage = 24 V, gate open) T_C = −40°C	I_H	— —	— —	75 150	mA
Turn-On Time (t_d + t_r) (I_{TM} = 35 Adc, I_{GT} = 40 mAdc)	t_{on}	—	1	—	μs
Turn-Off Time (I_{TM} = 10 A, I_R = 10 A) (I_{TM} = 10 A, I_R = 10 A, T_C = 100°C)	t_{off}	 — —	 20 35	 — —	μs
Forward Voltage Application Rate (T_C = 100°C)	dv/dt	—	50	—	V/μs

FIGURE 1 – CURRENT DERATING (HALF-WAVE RECTIFIED SINE WAVE)

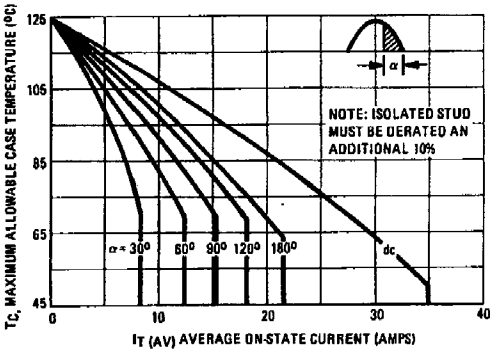
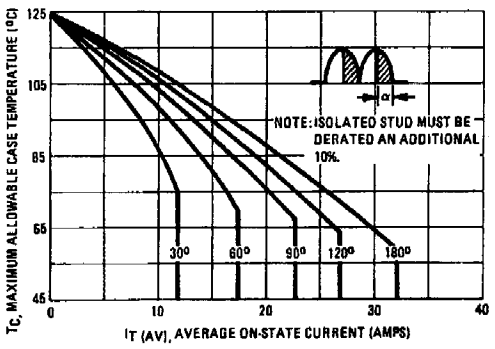


FIGURE 2 – CURRENT DERATING (FULL-WAVE RECTIFIED SINE WAVE)



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