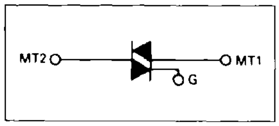
Triacs
Bidirectional Triode Thyristors

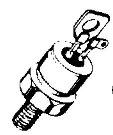
SC260 SC260( )3 MAC261

TRIACs
25 AMPERES RMS
200 thru 600 VOLTS

. . . designed primarily for industrial and military applications for the control of ac loads in applications such as light dimmers, power supplies, heating controls, motor controls, welding equipment and power switching systems; or wherever full-wave, silicon gate controlled solid-state devices are needed.

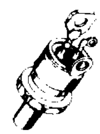
- All Diffused and Glass Passivated Junctions for Greater Stability
- Pressfit, Stud and Isolated Stud Packages
- Gate Triggering Guaranteed In All 3 Quadrants





CASE 263-04
STYLE 2
SC260

CASE 174-04
(TO-203AA)
STYLE 3
MAC261



CASE 311-02
STYLE 2
SC260( )3

3

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Repetitive Peak Off-State Voltage (T_C = −40°C to +115°C) SC260B, SC260B3, MAC261B SC260D, SC260D3, MAC261D SC260M, SC260M3, MAC261M	V_{DRM}	 200 400 600	Volts
RMS On-State Current	$I_{T(RMS)}$	25	Amps
Peak Non-Repetitive Surge Current (One Cycle, 60 Hz)	I_{TSM}	250	Amps
Circuit Fusing Considerations t = 1 ms t = 8.3 ms	I^2t	 150 260	A^2s
Peak Gate Power (Pulse Width = 10 μs)	P_{GM}	10	Watts
Average Gate Power	$P_{G(AV)}$	0.5	Watt
Peak Gate Power	I_{GM}	2	Amps
Operating Junction Temperature Range	T_J	40 to +115	°C
Storage Temperature Range	T_{stg}	40 to +125	°C
Stud Torque	—	30	in. lb.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case SC260, MAC261 SC260( )3	$R_{\theta JC}$	 1.8 1.95	°C/W

ELECTRICAL CHARACTERISTICS (T_C = +25°C unless otherwise noted. Values apply for either polarity of Main Terminal 2 Characteristics referenced to Main Terminal 1.)

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 = +115°C	I_{DRM}, I_{RRM}	— —	— —	10 1	μA mA
Peak On-State Voltage (I_{TM} = 35 A Peak, Pulse Width = 1 ms, Duty Cycle ≤ 2%)	V_{TM}	—	—	1.58	Volts
Critical Rate of Rise of Off-State Voltage (Rated V_{DRM}, Gate Open-Circuited, Exponential Waveform) T_C = +115°C	dv/dt	50	—	—	V/μs
Critical Rate-of-Rise of Commutating Off-State Voltage ($I_{T(RMS)}$ = Rated RMS On-State Current) (V_{DRM} = Rated Peak Off-State Voltage, Gate Open-Circuited, Commutating di/dt = 13.5 A/ms) T_C = +80°C	dv/dt(c)	5	—	—	V/μs
DC Gate Trigger Current (Continuous dc) (V_D = 12 Vdc) MT2(+), G(+); MT2(−), G(−); R_L = 100 Ohms MT2(+), G(−); R_L = 50 Ohms	I_{GT}	— —	— —	50 50	mAdc
DC Gate Trigger Current (Continuous dc) (V_D = 12 Vdc) T_C = −40°C MT2(+), G(+); MT2(−), G(−); R_L = 50 Ohms MT2(+), G(−); R_L = 25 Ohms	I_{GT}	— —	— —	80 80	mAdc
DC Gate Trigger Voltage (Continuous dc) (V_D = 12 Vdc) MT2(+), G(+); MT2(−), G(−); R_L = 100 Ohms MT2(+), G(−); R_L = 50 Ohms	V_{GT}	— —	— —	2.5 2.5	Vdc
DC Gate Trigger Voltage (Continuous dc) (V_D = 12 Vdc) T_C = −40°C MT2(+), G(+); MT2(−), G(−); R_L = 50 Ohms MT2(+), G(−); R_L = 25 Ohms	V_{GT}	— —	— —	3.5 3.5	Vdc
DC Gate Non-Trigger Voltage (V_D = Rated V_{DRM}, R_L = 1K Ohms, T_C = 115°C All Trigger Modes)	V_{GD}	0.25	—	—	Vdc
Holding Current (V_D = 24 Vdc, Peak Initiating Current = 0.5 A, Pulse Width = 0.1 to 10 ms, Gate Trigger Source = 7 V, 20 Ohms) T_C = +25°C T_C = −40°C	I_H	— —	— —	75 100	mAdc
Latching Current (V_D = 24 Vdc, Gate Trigger Source = 15 V, 100 Ohms, Pulse Width = 50 μs, 5 μs Maximum Rise and Fall Times) MT2(+), G(+); MT2(−), G(−) T_C = 25°C MT2(+), G(−) T_C = 25°C MT2(+), G(+); MT2(−), G(−) T_C = −40°C MT2(+), G(−) T_C = −40°C	I_L	— — — —	— — — —	100 200 200 400	mAdc

FIGURE 1 — CURRENT DERATING

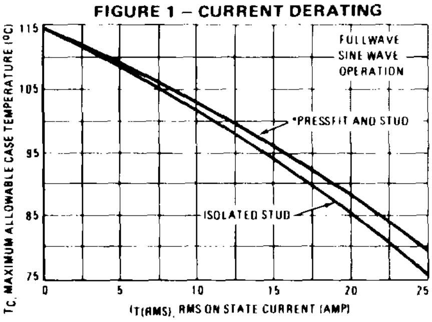


FIGURE 2 — MAXIMUM ON-STATE POWER DISSIPATION