Thyristors
Silicon Controlled Rectifiers

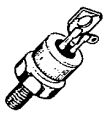
S6200
S6210
S6220
Series

SCRs
20 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} = 200 Amps
- Low Forward "On" Voltage — 1.2 V (Typ) @ I_{TM} = 20 Amps
- Practical Level Triggering and Holding Characteristics — 10 mA (Typ) @ T_C = 25°C
- Rugged Construction in Either Pressfit, Stud or Isolated Stud Package
- Glass Passivated Junctions for Maximum Reliability

CASE 174-04
(TO-203)
STYLE 1
S6200 SERIES



CASE 263-04
STYLE 1
S6210 SERIES

CASE 311-02
STYLE 1
S6220 SERIES

MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Repetitive Peak Off-State Voltage, Note 1 Repetitive Peak Reverse Voltage, Note 1		V_{DROM} V_{RROM}		Volts
S6200, S6210, S6220	A		100	
S6200, S6210, S6220	B		200	
S6200, S6210, S6220	D		400	
S6200, S6210, S6220	M		600	
Non-Repetitive Peak Off-State Voltage, Note 1 Non-Repetitive Peak Reverse Voltage, Note 1		V_{DSOM} V_{DROM}		Volts
S6200, S6210, S6220	A		150	
S6200, S6210, S6220	B		250	
S6200, S6210, S6220	D		500	
S6200, S6210, S6220	M		700	
RMS On-State Current (T_C = 75°C)		$I_{T(RMS)}$	20	Amps
Peak Non-Repetitive Surge Current (One Full Cycle of surge current at 60 Hz, preceded and followed by rated current, T_C = 75°C)		I_{TSM}	200	Amps
Circuit Fusing Considerations (T_J = −65 to +100°C, t = 1 to 8.3 ms)		I^2t	170	A^2s
Peak Gate Power (10 μs Max)		P_{GM}	40	Watts
Average Gate Power		$P_{G(AV)}$	0.5	Watt
Operating Junction Temperature Range		T_J	−65 to +100	°C
Storage Temperature Range		T_{stg}	−65 to +150	°C
Stud Torque		—	30	in. lb.

THERMAL CHARACTERISTICS

Characteristic		Symbol	Max	Unit
Thermal Resistance, Junction to Case	S6200	$R_{\theta JC}$	1.2	°C/W
	S6210, S6220		1.4	

Note 1. Ratings apply for open gate conditions. Thyristor devices shall not be tested with a constant current source for blocking capability such that the voltage applied exceeds the rated blocking voltage.

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

Characteristic		Symbol	Min	Typ	Max	Unit
Intantaneous Forward Breakover Voltage (Gate Open, T_C = 100°C)		$V_{(BO)O}$				Volts
S6200, S6210, S6220	A		100	—	—	
S6200, S6210, S6220	B		200	—	—	
S6200, S6210, S6220	D		400	—	—	
S6200, S6210, S6220	M		600	—	—	
Peak Blocking Current (Rated V_{DROM} @ T_C = 100°C)	T_C = 25°C	I_{DOM} I_{RROM}	— —	— —	10 2	μA mA
Peak On-State Voltage (I_T = 100 A Peak)		V_T	—	—	2.4	Volts
Gate Trigger Current (Continuous dc) (Main Terminal Voltage = 12 Vdc, R_L = 30 Ohms)		I_{GT}	—	—	15	mA
Gate Trigger Voltage (Continuous dc) (Main Terminal Voltage = 12 Vdc, R_L = 30 Ohms)		V_{GT}	—	—	2	Volts
Holding Current (Either Direction) (Main Terminal Voltage = 12 Vdc, Gate Open)		I_{HO}	—	—	20	mA
Gate Controlled Turn-On Time (V_D = $V_{(BO)O}$, I_T = 30 A Peak, I_{GT} = 200 mA, Rise Time = 0.1 μs)		t_{gt}	—	2	—	μs
Critical Rate-of-Rise of Off-State Voltage (V_D = $V_{(BO)O}$, Exponential Voltage Rise, Gate Open, T_C = 100°C)		dv/dt				V/μs
S6200, S6210, S6220	A,D		10	100	—	
S6200, S6210, S6220	B		10	150	—	
S6200, S6210, S6220	M		10	75	—	

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