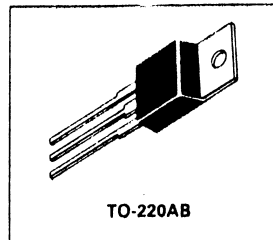*New Jersey Semi-Conductor Products, Inc.*

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
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2N6342
thru
2N6349

TO-220AB

TELEPHONE: (201) 376-2922
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MAXIMUM RATINGS

Rating	Symbol	Value	Unit
*Peak Repetitive Off-State Voltage (T_J = −40 to +100°C) 1/2 Sine Wave 50 to 60 Hz, Gate Open 2N6342, 2N6346 2N6343, 2N6347 2N6344, 2N6348 2N6345, 2N6349	V_{DRM}	200 400 600 800	Volts
*RMS On-State current (T_C = +80°C) Full Cycle Sine Wave 50 to 60 Hz (T_C = +90°C)	$I_{T(RMS)}$	8 4	Amps
*Peak Non-Repetitive Surge Current (One Full Cycle, 60 Hz, T_J = +80°C) Preceded and followed by 10 Rated Current	I_{TSM}	100	Amps
Circuit Fusing (T_J = −40 to +100°C, t = 1 to 8.3 ms)	I^2t	40	A^2s
*Peak Gate Power (T_C = +80°C, Pulse Width = 2 μs)	P_{GM}	20	Watts
*Average Gate Power (T_C = +80°C, t = 8.3 ms)	$P_{G(AV)}$	0.5	Watt
*Peak Gate Current	I_{GM}	2	Amps
*Peak Gate Voltage	V_{GM}	10	Volts
*Operating Junction Temperature Range	T_J	−40 to +125	°C
*Storage Temperature Range	T_{stg}	−40 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.2	°C/W

*Indicates JEDEC Registered Data.

ELECTRICAL CHARACTERISTICS (T_C = 25°C, and Either Polarity of MT2 to MT1 Voltage, unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
*Peak Forward or Reverse Blocking Current (Rated V_{DRM} or V_{RRM}, gate open) T_J = 25°C T_J = 100°C	I_{DRM}, I_{RRM}	— —	— —	10 2	μA mA
*Peak On-State Voltage (I_{TM} = 11 A Peak; Pulse Width = 1 to 2 ms, Duty Cycle ≤ 2%)	V_{TM}	—	1.3	1.55	Volts
Gate Trigger Current, Continuous dc (V_D = 12 Vdc, R_L = 100 Ohms) (Minimum Gate Pulse Width = 2 μs) MT2(+), G(+) All Types MT2(+), G(−) 2N6346 thru 49 MT2(−), G(−) All Types MT2(−), G(+) 2N6346 thru 49 *MT2(+), G(+); MT2(−), G(−) T_C = −40°C All Types *MT2(+), G(−); MT2(−), G(+) T_C = −40°C 2N6346 thru 49, MAC221	I_{GT}	— — — — — —	12 12 20 35 — —	50 75 50 75 100 125	mA
Gate Trigger Voltage, Continuous dc (V_D = 12 Vdc, R_L = 100 Ohms) (Minimum Gate Pulse Width = 2 μs) MT2(+), G(+) All Types MT2(+), G(−) 2N6346 thru 49 MT2(−), G(−) All Types MT2(−), G(+) 2N6346 thru 49 *MT2(+), G(+); MT2(−), G(−) T_C = −40°C All Types *MT2(+), G(−); MT2(−), G(+) T_C = −40°C 2N6346 thru 49, MAC221 (V_D = Rated V_{DRM}, R_L = 10 k Ohms, T_J = 100°C) *MT2(+), G(+); MT2(−), G(−) All Types *MT2(+), G(−); MT2(−), G(−) 2N6346 thru 49, MAC221	V_{GT}	— — — — — — 0.2 0.2	0.9 0.9 1.1 1.4 — — — —	2 2.5 2 2.5 2.5 3 — —	Volts
*Holding Current (V_D = 12 Vdc, Gate Open) T_C = 25°C (I_T = 200 mA) *T_C = −40°C	I_H	— —	6 —	40 75	mA
*Turn-On Time (V_D = Rated V_{DRM}, I_{TM} = 11 A, I_{GT} = 120 mA, Rise Time = 0.1 μs, Pulse Width = 2 μs)	t_{gt}	—	1.5	2	μs
Critical Rate of Rise of Commutation Voltage (V_D = Rated V_{DRM}, I_{TM} = 11 A, Commutating di/dt = 4.3 A/ms, Gate Unenergized, T_C = 80°C)	dv/dt(c)	—	5	—	V/μs