ELECTRONICS, INC.
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NTE5440
Silicon Controlled Rectifier (SCR)
800V, 12A, TO220 Isolated Tab

Applications:

- Motor Control
- Overvoltage Crowbar Protection
- Capacitive Discharge Ignition
- Voltage Regulation
- Welding Equipment
- Capacitive Filter Soft–Start (Inrush Current Control)

Absolute Maximum Ratings:

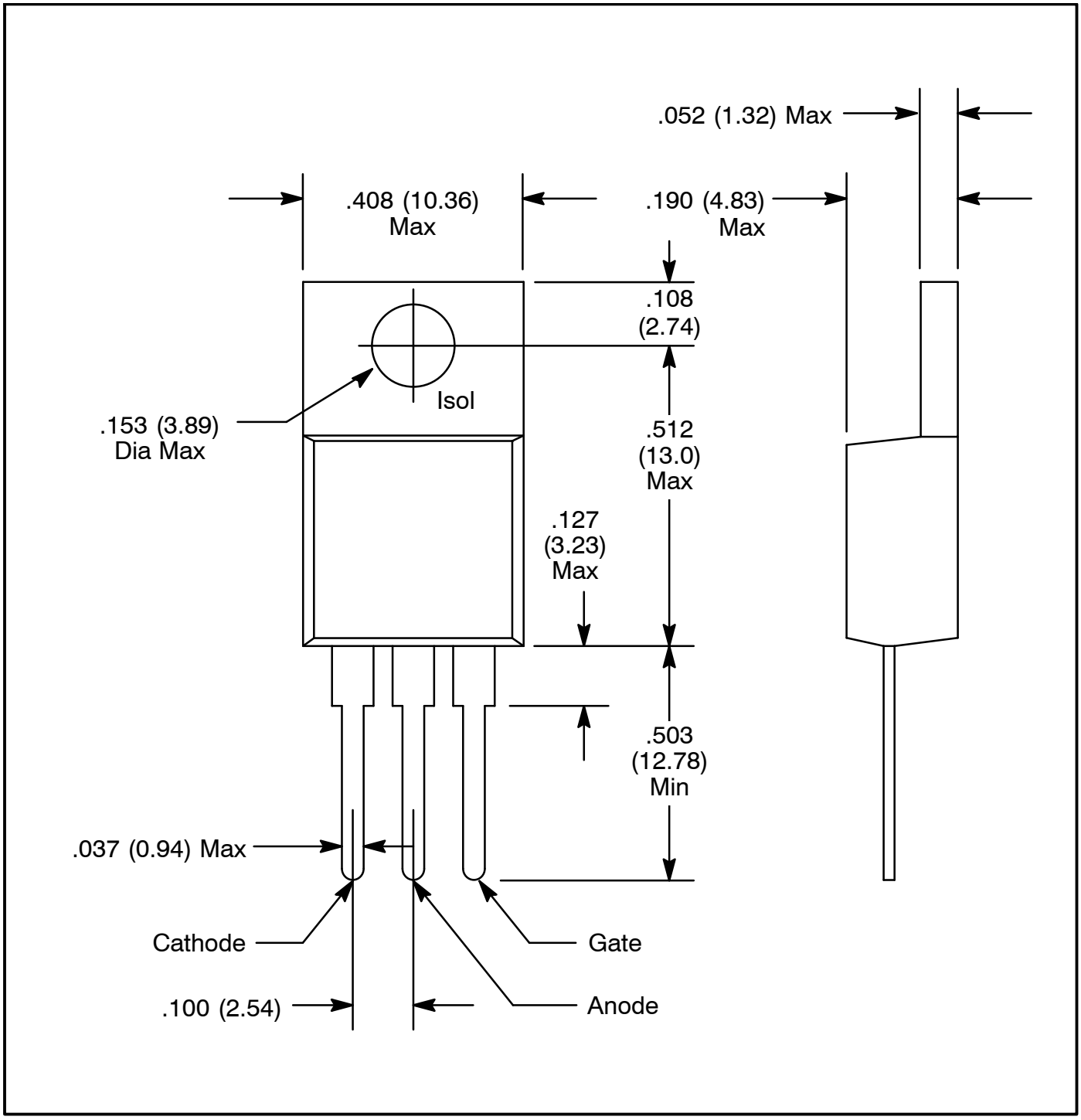
Repetitive Peak Voltages, V_{DRM}, V_{RRM} 800V
RMS On–State Current (Full Sine Wave, T_C = +95°C), $I_{T(RMS)}$ 12A
Average On–State Current (T_C = +95°C), $I_{T(AV)}$ 10A
Non–Repetitive Surge Peak On–State Current (Full Cycle, T_J Initial = +25°C), I_{TSM}
F = 50Hz 100A
F = 60Hz 120A
I^2t Value for Fusing (t_p= 10ms), I^2t . . . . . $60A^2s$
Critical Rate of Rise of On–State Current (I_G = 2 x I_{GT}, t_r < 100ns, T_J = +125°C), di/dt . . . 100A/µs
Peak Gate Current (t_p = 20µs, T_J = +125°C), I_{GM} 4A
Average Gate Power Dissipation (T_J = +125°C), $P_{G(AV)}$ 1W
Maximum Peak Reverse Gate Voltage, V_{RGM} 5V
Isolation Voltage, V_{ISO} . . . . . $2500V_{rms}$
Operating Junction Temperature Range, T_J . . . . . –40° to +125°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 2.1°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 60°C/W

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate–Trigger Current	I_{GT}	V_D = 12V, R_L = 30Ω	–	–	25	mA
Gate–Trigger Voltage	V_{GT}	V_D = 12V, R_L = 30Ω	–	–	1.5	V
Voltage that will not Trigger any Device	V_{GD}	V_D = 800V, R_L = 3.3kΩ, T_J = +125°C	200	–	–	mV
Holding Current	I_H	I_T = 500mA, Gate Open	–	–	40	mA

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Latching Current	I_L	I_G = 1.2 I_{GT}	–	–	60	mA
Rate of Rise of Off−State Voltage that will not Trigger any Device	dv/dt	V_D = 67% V_{DRM}, T_J = +125°C, Gate Open	500	–	–	V/μs
On−State Voltage	V_{TM}	I_{TM} = 32A, t_p = 380μs, T_J = +25°C	–	–	1.6	V
Off−State Current	I_{DRM}	V_{DRM} = 800V, T_J = +25°C	–	–	5	μA
Reverse Current	I_{RRM}	V_{DRM} = 800V, T_J = +125°C	–	–	2	mA



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