ELECTRONICS, INC.
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BLOOMFIELD, NJ 07003
(973) 748–5089
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NTE5460 and NTE5460–12
Silicon Controlled Rectifier (SCR)
25 Amp, TO–220 Full Pack (Isolated)

Features:

- Thyristor for Frequencies up to 400Hz
- Long–Term Stability of Leakage Current and Blocking Voltage

Applications:

- Motor Control
- Power Converter
- AC Power Controller
- Light and Temperature Control
- SCR for Inrush Current Limiting in Power Supplies for AC Drive

Maximum Ratings and Electrical Characteristics:

Repetitive Peak Off–State Voltage, V_{DRM}
- NTE5460 . . . . . 800V
- NTE5460–12 . . . . . 1200V

Non–Repetitive Peak Off–State Voltage, V_{DSM}
- NTE5460 . . . . . 800V
- NTE5460–12 . . . . . 1200V

Repetitive Peak Reverse Voltage, V_{RRM}
- NTE5460 . . . . . 800V
- NTE5460–12 . . . . . 1200V

Non–Repetitive Peak Reverse Blocking Voltage, V_{RSM}
- NTE5460 . . . . . 800V
- NTE5460–12 . . . . . 1200V

On–State RMS Current (180° Sine Wave), $I_{T(AV)}$
- T_C = +85°C, Note 1 . . . . . 16A
- T_A = +25°C, Note 2 . . . . . 2.5A

Peak Non–Repetitive Surge Current (V_R = 0V), I_{TSM}
- T_{VJ} = +45°C
  - t = 10ms (50Hz), Sine 300A
  - t = 8.3ms (60Hz), Sine 320A
- T_{VJ} = +150°C
  - t = 10ms (50Hz), Sine 260A
  - t = 8.3ms (60Hz), Sine 280A

Note 1. Mounted on a heatsink.

Note 2. Without a heatsink.

RoHS 2002/95/EC

Maximum Ratings and Electrical Characteristics (Cont'd):

Circuit Fusing, I^2t

T_{VJ} = +45°C

t = 10ms (50Hz), Sine . . . . . 450A^2s

t = 8.3ms (60Hz), Sine . . . . . 430A^2s

T_{VJ} = +150°C

t = 10ms (50Hz), Sine . . . . . 340A^2s

t = 8.3ms (60Hz), Sine . . . . . 330A^2s

Critical Rate of Rise of Off−State Current, di/dt

T_{VJ} = +150°C, f = 50Hz, t_p = 200μs, V_D = 2/3 V_{DRM}, I_G = 0.08A, di_G/dt = 0.08A/μs

Repetitive, I_T = 20A 150A/μs

Non−Repetitive, $I_T = I_{T(AV)}$ 500A/μs

Critical Rate of Rise of Off−State Voltage, dv/dt

T_{VJ} = +150°C, V_{DR} = 2/3 V_{DRM}, R_{GK} = , Method 1 (Linear Voltage Rise) 500V/μs

Peak Gate Power (T_{VJ} = +150°C, $I_T = I_{T(AV)}$), P_{GM}

t_p = 30μs 10W

t_p = 300μs 5W

Average Gate Power, $P_{G(AV)}$ 0.5W

Peak Gate Current (T_C = +70°C, Pulse Width = 10μs), I_{GM} 2A

Maximum Peak Forward and Reverse Blocking Current, I_R, I_D

T_{VJ} = +150°C, $V_R = V_{RRM}$, $V_D = V_{DRM}$ 4mA

Maximum Forward "ON" Voltage (I_T = 30A, T_{VJ} = +25°C), V_T 1.4V

Maximum DC Gate Trigger Voltage (V_D = 6V), V_{GT}

T_{VJ} = +25°C 2.5V

T_{VJ} = −40°C 5V

Maximum DC Gate Trigger Current (V_D = 6V), I_{GT}

T_{VJ} = +25°C 30mA

T_{VJ} = −40°C 50mA

Maximum Gate Non−Trigger Voltage (T_{VJ} = +150°C, V_D = 2/3 V_{DRM}), V_{GD} 0.2V

Maximum Gate Non−Trigger Current (T_{VJ} = +150°C, V_D = 2/3 V_{DRM}), I_{GD} 1mA

Maximum Latching Current (T_{VJ} = +25°C, t_p = 10μs, I_G = 0.08A, di_G/dt = 0.08A/μs), I_L 100mA

Maximum Holding Current (T_{VJ} = +25°C, V_D = 6V, R_{GK} = ∞), I_H 80mA

Maximum Turn−On Time (T_{VJ} = +25°C, V_D = 1/2 V_{DRM}, I_G = 0.08A, di_G/dt = 0.08A/μs), t_{gd} . . . 2μs

Operating Junction Temperature Range, T_{VJ} . . . . . −40° to +150°C

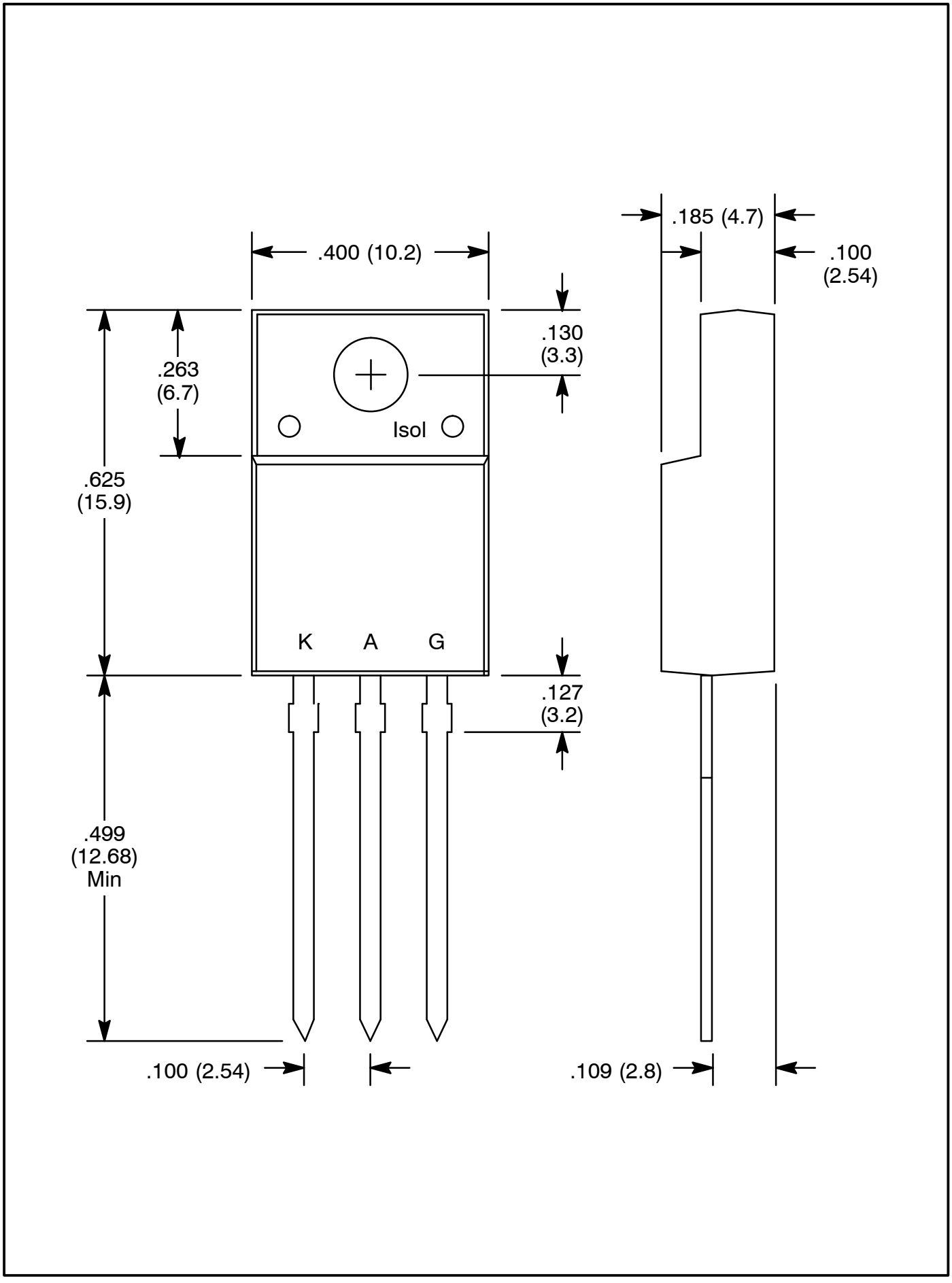
Maximum Junction Temperature, T_{VJM} . . . . . +150°C

Storage Temperature Range, T_{stg} . . . . . −40° to +125°C

Maximum Thermal Resistance, Junction−to−Case, R_{thJC} 2.5K/W

Typical Thermal Resistance, Case−to−Sink, R_{thCS} 0.5K/W

Maximum Thermal Resistance, Junction−to−Ambient, R_{thJA} 50K/W


.400 (10.2)
.185 (4.7)
.100
(2.54)
.130
(3.3)
.263
(6.7)
Isol
.625
(15.9)
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G
.127
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.499
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Min
.100 (2.54)
.109 (2.8)