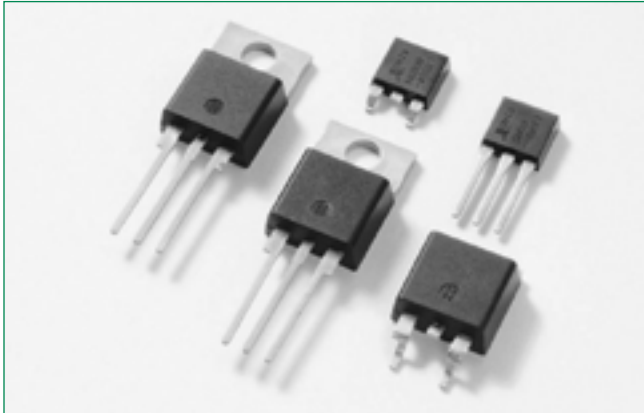


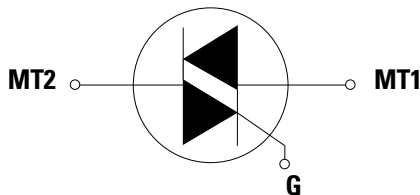
# LJxx08xx & QJxx08xHx & QJxx08xx Series

## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

HF RoHS (L package: E71639)



### Schematic Symbol



**MT1:** Main Terminal 1; **MT2:** Main Terminal 2; **G:** Gate

### Description

This 8 A High Temperature Alternistor TRIAC solid state switch series is designed for AC switching and phase control applications such as motor speed and temperature modulation controls, lighting controls, and static switching relays.

**Sensitive** type components guarantee gate control in Quadrants I & IV as needed for digital control circuitry.

**Alternistor** type components only operate in quadrants I, II, & III and are used in circuits requiring high dv/dt capability.

Standard type devices normally operate in Quadrants I & III triggered from AC line

### Features & Benefits

- 150°C maximum junction temperature
- Voltage capability up to 800 V
- Surge capability up to 100 A at 60 Hz
- Solid-state switching eliminates arcing or contact bounce that create voltage transients
- No contacts to wear out from reaction of switching events
- Restricted (or limited) RFI generation, depending on activation point of sine wave
- Requires only a short gate activation pulse in each half-cycle
- Recognized to UL 1557 as an Electrically Isolated Semiconductor Device
- Halogen-free and RoHS compliant

### Applications

Excellent for AC switching and phase control applications such as heating, lighting, and motor speed controls.

Typical applications are AC solid-state switches, light dimmers, power tools, home/brown goods and white goods appliances.

Alternistor TRIACs (no snubber required) are used in applications with high inductive loads requiring the highest commutation performance.

### Product Summary

| Characteristic    | Value             | Unit |
|-------------------|-------------------|------|
| $I_{T(RMS)}$      | 8                 | A    |
| $V_{DRM}/V_{RRM}$ | 400 or 600 or 800 | V    |
| $I_{GT(Q1)}$      | 10 to 50          | mA   |

# LJxx08xx & QJxx08xHx & QJxx08xx Series

## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

### Absolute Maximum Ratings — Sensitive TRIAC (4 Quadrants)

| Symbol            | Parameter                                                                                     |                        |                     | Value      | Unit       |
|-------------------|-----------------------------------------------------------------------------------------------|------------------------|---------------------|------------|------------|
| $V_{DSM}/V_{RSM}$ | Peak non-repetitive blocking voltage                                                          | $P_W = 100 \mu s$      | 600 V               | 700        | V          |
| $I_{T(RMS)}$      | RMS on-state current (full sine wave)                                                         | LJxx08Vy/LJxx08Dy      | $T_C = 130^\circ C$ | 8          | A          |
| $I_{TSM}$         | Non repetitive surge peak on-state current (full cycle, $T_J$ initial = $25^\circ C$ )        | f = 50 Hz              | t = 20 ms           | 70         | A          |
|                   |                                                                                               | f = 60 Hz              | t = 16.7 ms         | 84         |            |
| $I^2t$            | $I^2t$ Value for fusing                                                                       | $t_p = 8.3 \text{ ms}$ |                     | 29         | $A^2s$     |
| di/dt             | Critical rate of rise of on-state current<br>$I_G = 50 \text{ mA}$ with 0.1 $\mu s$ rise time | f = 60 Hz              | $T_J = 150^\circ C$ | 150        | A/ $\mu s$ |
| $I_{GTM}$         | Peak gate trigger current                                                                     | $t_p = 20 \mu s$       | $T_J = 150^\circ C$ | 4          | A          |
| $P_{G(AV)}$       | Average gate power dissipation                                                                |                        | $T_J = 150^\circ C$ | 0.3        | W          |
| $T_{stg}$         | Storage temperature range                                                                     |                        |                     | -40 to 150 | $^\circ C$ |
| $T_J$             | Operating junction temperature range                                                          |                        |                     | -40 to 150 | $^\circ C$ |

Note: xx=voltage/10,  $\gamma$  = sensitivity

### Absolute Maximum Ratings — Alternistor (3 Quadrants)

| Symbol            | Parameter                                                                        |                     |            | Value                         | Unit       |        |
|-------------------|----------------------------------------------------------------------------------|---------------------|------------|-------------------------------|------------|--------|
| $V_{DSM}/V_{RSM}$ | Peak non-repetitive blocking vlotage                                             | $P_W = 100\ \mu s$  |            | 600 V                         | 700        | V      |
|                   |                                                                                  |                     |            | 800 V                         | 1000       | V      |
| $I_{T(RMS)}$      | RMS on-state current (full sine wave)                                            | QJxx08VHy/QJxx08DHy |            | $T_c = 130^{\circ}C$          | 8          | A      |
|                   |                                                                                  | QJxx08LHy           |            | $T_c = 125^{\circ}C$          |            |        |
|                   |                                                                                  | QJxx08RHy/QJxx08NHy |            | $T_c = 135^{\circ}C$          |            |        |
| $I_{TSM}$         | Non repetitive surge peak on-state current<br>(full cycle, $T_j$ initial= 25 °C) | f = 50 Hz           | t = 20 ms  | QJxx08VHy/QJxx08DHy           | 70         | A      |
|                   |                                                                                  |                     |            | QJxx08LHy/QJxx08RHy/QJxx08NHy | 83         |        |
|                   |                                                                                  | f = 60 Hz           | t =16.7 ms | QJxx08VHy/QJxx08DHy           | 84         |        |
|                   |                                                                                  |                     |            | QJxx08LHy/QJxx08RHy/QJxx08NHy | 100        |        |
| $I^2t$            | $I^2t$ Value for fusing                                                          | $t_p = 8.3\ ms$     |            | QJxx08VHy/QJxx08DHy           | 29         | $A^2s$ |
|                   |                                                                                  |                     |            | QJxx08LHy/QJxx08RHy/QJxx08NHy | 26.5       |        |
| di/dt             | Critical rate of rise of on-state current                                        | f = 60 Hz           |            | $T_j = 150^{\circ}C$          | 70         | A/us   |
| $I_{GTM}$         | Peak gate trigger current                                                        | $t_p = 20\ \mu s$   |            | $T_j = 150^{\circ}C$          | 4          | A/us   |
| $P_{G(AV)}$       | Average gate power dissipation                                                   |                     |            | $T_j = 150^{\circ}C$          | 0.5        | W      |
| $T_{STG}$         | Storage temperature range                                                        |                     |            |                               | -40 to 150 | °C     |
| $T_j$             | Operating junction temperature range                                             |                     |            |                               | -40 to 150 | °C     |

Note: xx=voltage/10,  $\gamma$  = sensitivity

### Absolute Maximum Ratings - Standard TRIAC (4 Quadrants)

| Symbol            | Parameter                                                                              |                        |                     | Value      | Unit       |
|-------------------|----------------------------------------------------------------------------------------|------------------------|---------------------|------------|------------|
| $V_{DSM}/V_{RSM}$ | Peak non-repetitive blocking vlotage                                                   | $P_W = 100 \mu s$      | 800 V               | 1000       | V          |
| $I_{T(RMS)}$      | RMS on-state current (full sine wave)                                                  | QJxx08L5               | $T_C = 125^\circ C$ | 8          | A          |
|                   |                                                                                        | QJxx08R5/QJxx08N5      | $T_C = 135^\circ C$ |            |            |
| $I_{TSM}$         | Non repetitive surge peak on-state current (full cycle, $T_J$ initial = $25^\circ C$ ) | f = 50 Hz              | t = 20 ms           | 83         | A          |
|                   |                                                                                        | f = 60 Hz              | t = 6.7 ms          | 100        |            |
| $I^2t$            | $I^2t$ Value for fusing                                                                | $t_p = 8.3 \text{ ms}$ | QJxx08x5            | 26.5       | $A^2s$     |
| di/dt             | Critical rate of rise of on-state current                                              | f = 60 Hz              | $T_J = 150^\circ C$ | 70         | A/us       |
| $I_{GTM}$         | Peak gate trigger current                                                              | $t_p = 20 \mu s$       | $T_J = 150^\circ C$ | 4          | A/us       |
| $P_{G(AV)}$       | Average gate power dissipation                                                         |                        | $T_J = 150^\circ C$ | 0.5        | W          |
| $T_{STG}$         | Storage temperature range                                                              |                        |                     | -40 to 150 | $^\circ C$ |
| $T_J$             | Operating junction temperature range                                                   |                        |                     | -40 to 150 | $^\circ C$ |

Note: xx=voltage/10, x = package

# LJxx08xx & QJxx08xHx & QJxx08xx Series

## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

### Electrical Characteristics ( $T_J = 25^\circ\text{C}$ , unless otherwise specified) — Sensitive TRIAC (4 Quadrants)

| Symbol     | Test Conditions                                                        | Quadrant           |      | LJxx08x8 | Unit             |
|------------|------------------------------------------------------------------------|--------------------|------|----------|------------------|
| $I_{GT}$   | $V_D = 12\text{ V } R_L = 60\ \Omega$                                  | I – II – III<br>IV | MAX. | 10<br>20 | mA               |
| $V_{GT}$   |                                                                        | ALL                | MAX. | 1.3      | V                |
| $V_{GD}$   | $V_D = V_{DRM} R_L = 3.3\text{ k}\Omega T_J = 150^\circ\text{C}$       | ALL                | MIN. | 0.15     | V                |
| $I_H$      | Initial $I_T = 100\text{ mA}$                                          |                    | MAX. | 25       | mA               |
| $dv/dt$    | $V_D = V_{DRM}$ Gate Open $T_J = 150^\circ\text{C}$                    | 400V               | TYP. | 80       | V/ $\mu\text{s}$ |
|            |                                                                        | 600V               |      | 50       |                  |
| $(dv/dt)c$ | $(di/dt)c = 4.3\text{ A/ms } T_J = 150^\circ\text{C}$                  |                    | TYP. | 2        | V/ $\mu\text{s}$ |
| $t_{gt}$   | $I_G = 2 \times I_{GT} P_W = 15\ \mu\text{s } I_T = 11.3\text{ A(pk)}$ |                    | TYP. | 12       | $\mu\text{s}$    |

Note: xx=voltage/10, x = package,

### Electrical Characteristics ( $T_J = 25^\circ\text{C}$ , unless otherwise specified) — Alternistor TRIAC (3 Quadrants)

| Symbol     | Test Conditions                                                        | Quadrant     |      | QJxx08xH2 | QJxx08xH3 | QJxx08xH4 | Unit             |
|------------|------------------------------------------------------------------------|--------------|------|-----------|-----------|-----------|------------------|
| $I_{GT}$   | $V_D = 12\text{ V } R_L = 60\ \Omega$                                  | I – II – III | MAX. | 10        | 20        | 35        | mA               |
| $V_{GT}$   |                                                                        | I – II – III | MAX. | 1.3       |           |           | V                |
| $V_{GD}$   | $V_D = V_{DRM} R_L = 3.3\text{ k}\Omega T_J = 150^\circ\text{C}$       | I – II – III | MIN. | 0.15      |           |           | V                |
| $I_H$      | Initial $I_T = 100\text{ mA}$                                          |              | MAX. | 25        | 30        | 35        | mA               |
| $dv/dt$    | $V_D = V_{DRM}$ Gate Open $T_J = 150^\circ\text{C}$                    | 400 V        | MIN. | 150       | 250       | 350       | V/ $\mu\text{s}$ |
|            |                                                                        | 600 V        |      | 100       | 200       | 250       |                  |
|            |                                                                        | 800 V        |      | -         | -         | 450       |                  |
| $(dv/dt)c$ | $(di/dt)c = 4.3\text{ A/ms } T_J = 150^\circ\text{C}$                  |              | MIN. | 15        | 18        | 20        | V/ $\mu\text{s}$ |
| $t_{gt}$   | $I_G = 2 \times I_{GT} P_W = 15\ \mu\text{s } I_T = 11.3\text{ A(pk)}$ |              | TYP. | 10        | 10        | 10        | $\mu\text{s}$    |

Note: xx=voltage/10, x = package

### Electrical Characteristics ( $T_J = 25^\circ\text{C}$ , unless otherwise specified) — Standard TRIAC

| Symbol     | Test Conditions                                                     | Quadrant     |      | Valye    | Unit             |
|------------|---------------------------------------------------------------------|--------------|------|----------|------------------|
|            |                                                                     |              |      | QJxx08x5 |                  |
| $I_{GT}$   | $V_D = 12\text{ V } R_L = 60\ \Omega$                               | I – II – III | MAX. | 50       | mA               |
|            |                                                                     | IV           | TYP. | 75       |                  |
| $V_{GT}$   | $V_D = V_{DRM} R_L = 3.3\text{ k}\Omega T_J = 150^\circ\text{C}$    | ALL          | MAX. | 1.3      | V                |
| $V_{GD}$   |                                                                     | ALL          | MIN. | 0.2      | V                |
| $I_H$      | Initial $I_T = 100\text{ mA}$                                       |              | MAX. | 50       | mA               |
| $dv/dt$    | $V_D = V_{DRM}$ Gate Open $T_J = 150^\circ\text{C}$                 |              | MIN. | 1000     | V/ $\mu\text{s}$ |
| $(dv/dt)c$ | $(di/dt)c = 4.3\text{ A/ms } T_J = 150^\circ\text{C}$               |              | MIN. | 4        | V/ $\mu\text{s}$ |
| $t_{gt}$   | $I_G = 2X I_{GT} P_W = 15\ \mu\text{s } I_T = 11.3\text{ A}_{(pk)}$ |              | TYP. | 11       | $\mu\text{s}$    |

# LJxx08xx & QJxx08xHx & QJxx08xx Series

## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

### Static Characteristics

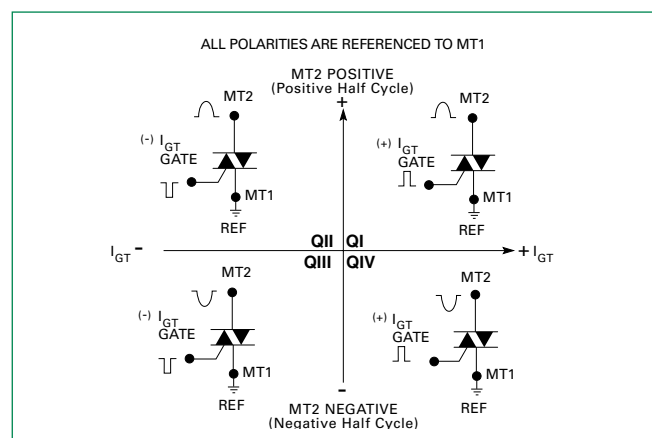
| Symbol                             | Test Conditions                                   |           |                        |           | Value | Unit |    |
|------------------------------------|---------------------------------------------------|-----------|------------------------|-----------|-------|------|----|
| V <sub>TM</sub>                    | I <sub>TM</sub> = 11.3 A, t <sub>p</sub> = 380 μs |           |                        | MAX       | 1.5   | V    |    |
| I <sub>DRM</sub> /I <sub>RRM</sub> | V <sub>DRM</sub> = V <sub>RRM</sub>               | LJxx08xy  | T <sub>J</sub> = 25°C  | 400-600 V | MAX   | 10   | μA |
|                                    |                                                   |           | T <sub>J</sub> = 125°C | 400-600 V |       | 0.5  | mA |
|                                    |                                                   |           | T <sub>J</sub> = 150°C | 400-600 V |       | 3    |    |
|                                    |                                                   | QJxx08xHy | T <sub>J</sub> = 25°C  | 400-800 V |       | 10   | μA |
|                                    |                                                   |           | T <sub>J</sub> = 125°C | 400-800 V |       | 0.5  | mA |
|                                    |                                                   |           | T <sub>J</sub> = 150°C | 400-800 V |       | 3    |    |
|                                    |                                                   | QJxx08x5  | T <sub>J</sub> = 25°C  | 800 V     |       | 10   | μA |
|                                    |                                                   |           | T <sub>J</sub> = 125°C |           |       | 0.5  | mA |
|                                    |                                                   |           | T <sub>J</sub> = 150°C |           |       | 4    |    |

Note: xx=voltage/10, x=package, y = sensitivity

### Thermal Resistances

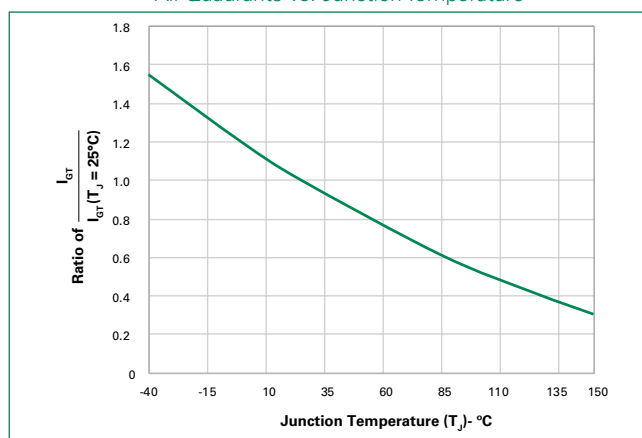
| Symbol     | Parameter             |                   | Value | Unit                      |
|------------|-----------------------|-------------------|-------|---------------------------|
| $R_{thJC}$ | Junction to case (AC) | LJ/QJxx08Vyy      | 1.5   | $^\circ\text{C}/\text{W}$ |
|            |                       | LJ/QJxx08Dyy      |       |                           |
|            |                       | QJxx08R5/QJxx08N5 | 1.2   |                           |
|            |                       | QJxx08L5          | 2.3   |                           |
| $R_{thJA}$ | Junction to ambient   | LJ/QJxx08Vyy      | 70    | $^\circ\text{C}/\text{W}$ |
|            |                       | LJ/QJxx08Dyy      |       |                           |
|            |                       | QJxx08R5/QJxx08N5 | 45    |                           |
|            |                       | QJxx08L5          | 90    |                           |

**Figure 1:**  
Definition of Quadrants



Note: Alternistors will not operate in QIV

**Figure 2:**  
Normalized DC Gate Trigger Current for  
All Quadrants vs. Junction Temperature

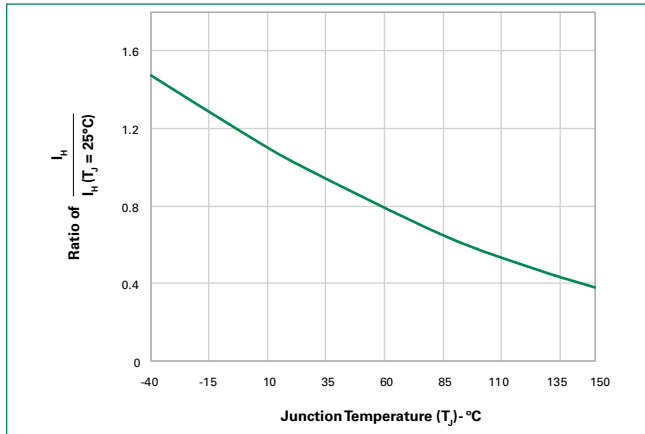


# LJxx08xx & QJxx08xHx & QJxx08xx Series

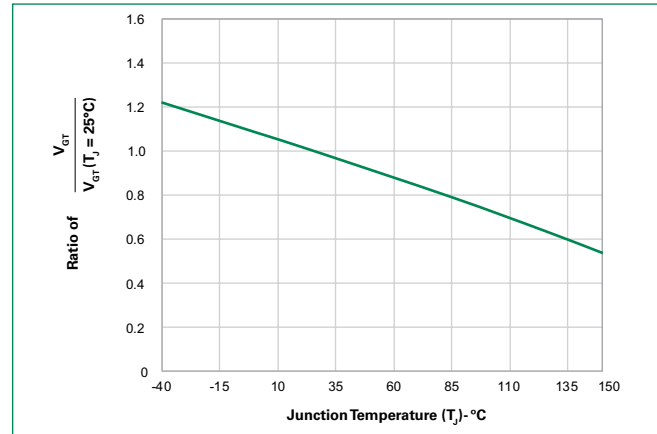
## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

**Figure 3:**

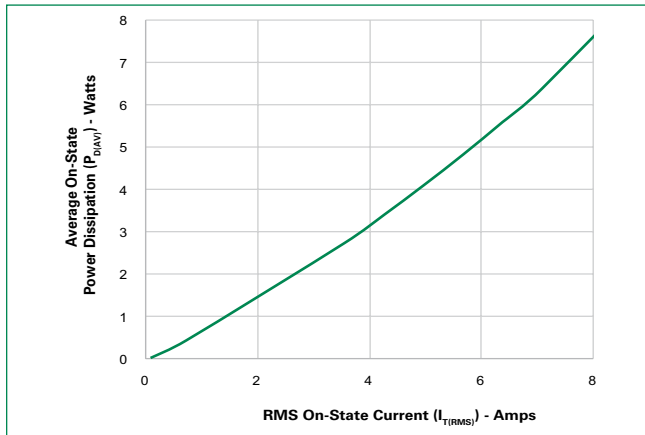
Normalized DC Holding Current vs. Junction Temperature

**Figure 4:**

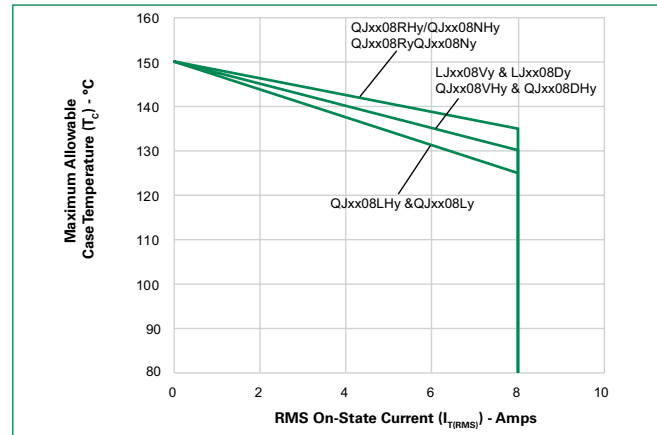
Normalized DC Gate Trigger Voltage for All Quadrants vs. Junction Temperature

**Figure 5:**

Power Dissipation (Typical) vs. RMS On-State Current

**Figure 6:**

Maximum Allowable Case Temperature vs. On-State Current

**Figure 7:**

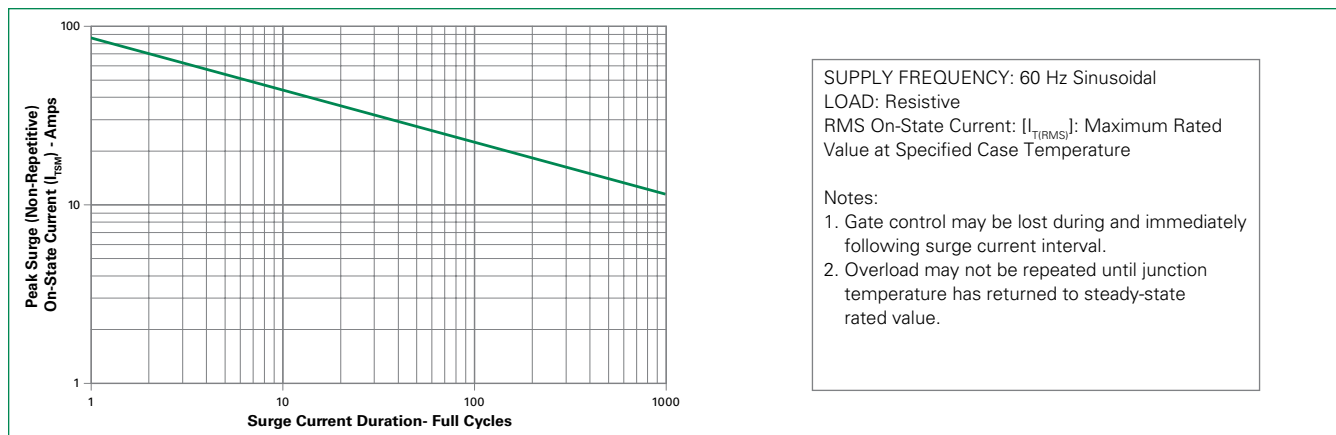
On-State Current vs. On-State Voltage (Typical)



# LJxx08xx & QJxx08xHx & QJxx08xx Series

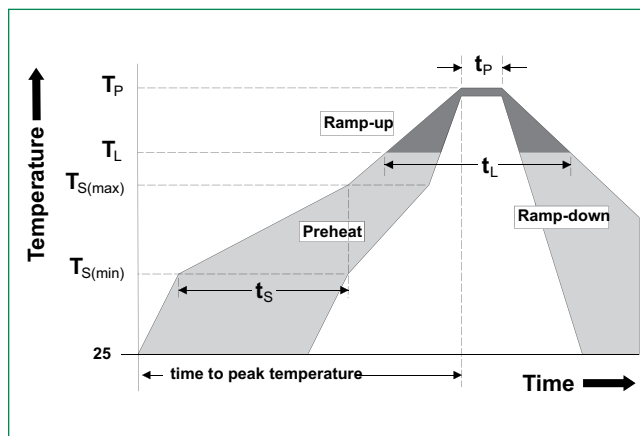
## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

Figure 8: Surge Peak On-State Current vs. Number of Cycles



### Soldering Parameters

|                                                                        |                                   |                         |
|------------------------------------------------------------------------|-----------------------------------|-------------------------|
| <b>Reflow Condition</b>                                                |                                   | Pb – Free assembly      |
| <b>Pre Heat</b>                                                        | -Temperature Min ( $T_{s(min)}$ ) | 150°C                   |
|                                                                        | -Temperature Max ( $T_{s(max)}$ ) | 200°C                   |
|                                                                        | -Time (min to max) ( $t_s$ )      | 60 – 180 seconds        |
| <b>Average ramp up rate (Liquidus Temp) (<math>T_L</math>) to peak</b> |                                   | 5°C/second max.         |
| <b><math>T_{s(max)}</math> to <math>T_L</math> - Ramp-up Rate</b>      |                                   | 5°C/second max.         |
| <b>Reflow</b>                                                          | -Temperature ( $T_L$ ) (Liquidus) | 217°C                   |
|                                                                        | -Time ( $t_L$ )                   | 60 – 150 seconds        |
| <b>Peak Temperature (<math>T_P</math>)</b>                             |                                   | 260 <sup>+0/-5</sup> °C |
| <b>Time within 5°C of actual peak Temperature (<math>t_P</math>)</b>   |                                   | 20 – 40 seconds         |
| <b>Ramp-down Rate</b>                                                  |                                   | 5°C/second max.         |
| <b>Time 25°C to peak Temperature (<math>T_P</math>)</b>                |                                   | 8 minutes max.          |
| <b>Do not exceed</b>                                                   |                                   | 280°C                   |



### Physical Specifications

|                          |                                                         |
|--------------------------|---------------------------------------------------------|
| <b>Terminal Finish</b>   | 100% Matte Tin-plated                                   |
| <b>Body Material</b>     | UL Recognized compound meeting flammability rating V-0. |
| <b>Terminal Material</b> | Copper Alloy                                            |

## Design Considerations

Careful selection of the correct component for the application's operating parameters and environment will go a long way toward extending the operating life of the Thyristor. Good design practice should limit the maximum continuous current through the main terminals to 75% of the component rating. Other ways to ensure long life for a power discrete semiconductor are proper heat sinking and selection of voltage ratings for worst case conditions. Overheating, overvoltage (including dv/dt), and surge currents are the main killers of semiconductors. Correct mounting, soldering, and forming of the leads also help protect against component damage.

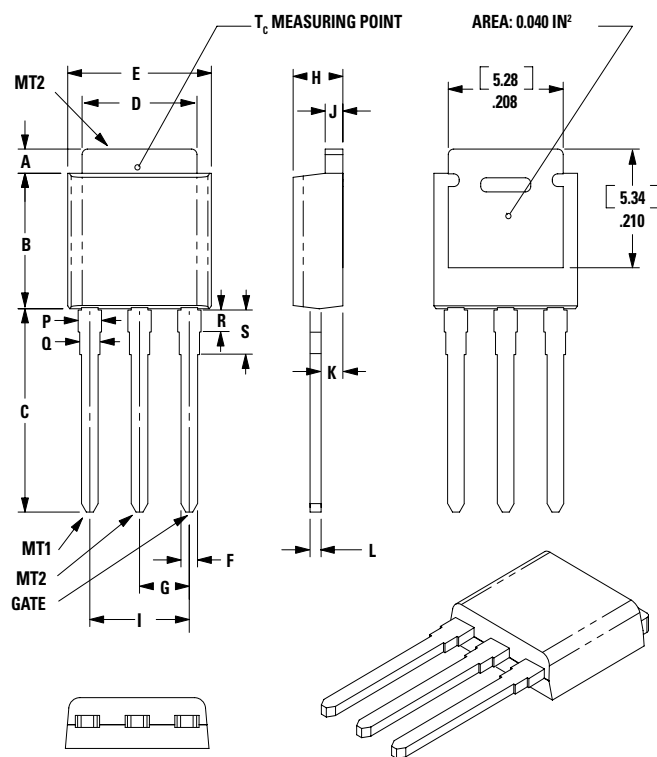
### Environmental Specifications

| Test                                      | Specifications and Conditions                                              |
|-------------------------------------------|----------------------------------------------------------------------------|
| <b>AC Blocking (<math>V_{DRM}</math>)</b> | MIL-STD-750, M-1040, Cond A Applied Peak AC voltage @ 150°C for 1008 hours |
| <b>Temperature Cycling</b>                | MIL-STD-750, M-1051, 1000 cycles; -55°C to +150°C; 15-min dwell-time       |
| <b>Temperature/Humidity</b>               | EIA / JEDEC, JESD22-A101 1008 hours; 320 V - DC: 85°C; 85% rel humidity    |
| <b>High Temp Storage</b>                  | MIL-STD-750, M-1031, 1008 hours; 150°C                                     |
| <b>Low-Temp Storage</b>                   | 1008 hours; -40°C                                                          |
| <b>Resistance to Solder Heat</b>          | MIL-STD-750 Method 2031                                                    |
| <b>Solderability</b>                      | ANSI/J-STD-002, category 3, Test A                                         |
| <b>Lead Bend</b>                          | MIL-STD-750, M-2036 Cond E                                                 |

# LJxx08xx & QJxx08xHx & QJxx08xx Series

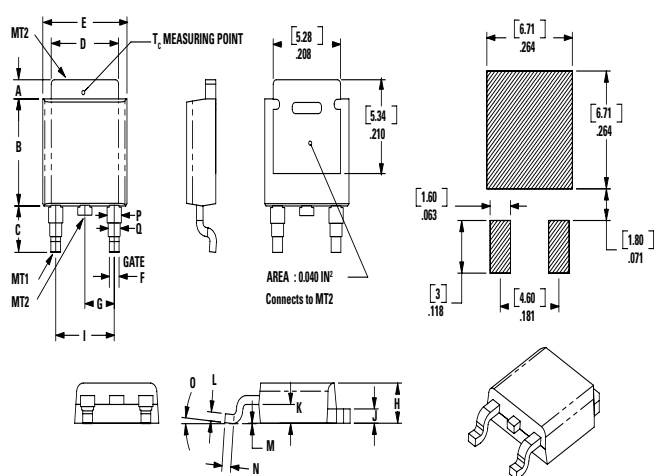
## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

### Dimensions — TO-251AA (V Package) — VPAK Through Hole



| Dimension | Inches |       |       | Millimeters |      |      |
|-----------|--------|-------|-------|-------------|------|------|
|           | Min    | Typ   | Max   | Min         | Typ  | Max  |
| A         | 0.037  | 0.040 | 0.043 | 0.94        | 1.01 | 1.09 |
| B         | 0.235  | 0.242 | 0.245 | 5.97        | 6.15 | 6.22 |
| C         | 0.350  | 0.361 | 0.375 | 8.89        | 9.18 | 9.53 |
| D         | 0.205  | 0.208 | 0.213 | 5.21        | 5.29 | 5.41 |
| E         | 0.255  | 0.262 | 0.265 | 6.48        | 6.66 | 6.73 |
| F         | 0.027  | 0.031 | 0.033 | 0.69        | 0.80 | 0.84 |
| G         | 0.087  | 0.090 | 0.093 | 2.21        | 2.28 | 2.36 |
| H         | 0.085  | 0.092 | 0.095 | 2.16        | 2.34 | 2.41 |
| I         | 0.176  | 0.180 | 0.184 | 4.47        | 4.57 | 4.67 |
| J         | 0.018  | 0.020 | 0.023 | 0.46        | 0.51 | 0.58 |
| K         | 0.035  | 0.037 | 0.039 | 0.90        | 0.95 | 1.00 |
| L         | 0.018  | 0.020 | 0.023 | 0.46        | 0.52 | 0.58 |
| P         | 0.042  | 0.047 | 0.052 | 1.06        | 1.20 | 1.32 |
| Q         | 0.034  | 0.039 | 0.044 | 0.86        | 1.00 | 1.11 |
| R         | 0.034  | 0.039 | 0.044 | 0.86        | 1.00 | 1.11 |
| S         | 0.074  | 0.079 | 0.084 | 1.86        | 2.00 | 2.11 |

### Dimensions — TO-252AA (D Package) — DPAK Surface Mount

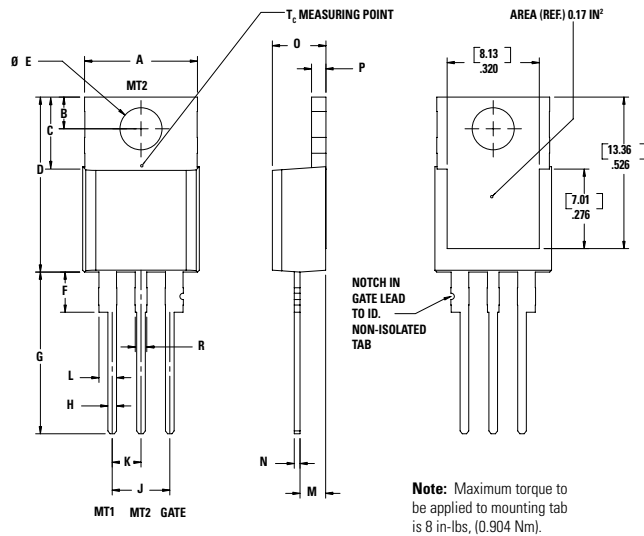


| Dimension | Inches |       |       | Millimeters |      |      |
|-----------|--------|-------|-------|-------------|------|------|
|           | Min    | Typ   | Max   | Min         | Typ  | Max  |
| A         | 0.037  | 0.040 | 0.043 | 0.94        | 1.01 | 1.09 |
| B         | 0.235  | 0.243 | 0.245 | 5.97        | 6.16 | 6.22 |
| C         | 0.106  | 0.108 | 0.113 | 2.69        | 2.74 | 2.87 |
| D         | 0.205  | 0.208 | 0.213 | 5.21        | 5.29 | 5.41 |
| E         | 0.255  | 0.262 | 0.265 | 6.48        | 6.65 | 6.73 |
| F         | 0.027  | 0.031 | 0.033 | 0.69        | 0.80 | 0.84 |
| G         | 0.087  | 0.090 | 0.093 | 2.21        | 2.28 | 2.36 |
| H         | 0.085  | 0.092 | 0.095 | 2.16        | 2.33 | 2.41 |
| I         | 0.176  | 0.179 | 0.184 | 4.47        | 4.55 | 4.67 |
| J         | 0.018  | 0.020 | 0.023 | 0.46        | 0.51 | 0.58 |
| K         | 0.035  | 0.037 | 0.039 | 0.90        | 0.95 | 1.00 |
| L         | 0.018  | 0.020 | 0.023 | 0.46        | 0.51 | 0.58 |
| M         | 0.000  | 0.000 | 0.004 | 0.00        | 0.00 | 0.10 |
| N         | 0.021  | 0.026 | 0.027 | 0.53        | 0.67 | 0.69 |
| O         | 0°     | 0°    | 5°    | 0°          | 0°   | 5°   |
| P         | 0.042  | 0.047 | 0.052 | 1.06        | 1.20 | 1.32 |
| Q         | 0.034  | 0.039 | 0.044 | 0.86        | 1.00 | 1.11 |

# LJxx08xx & QJxx08xHx & QJxx08xx Series

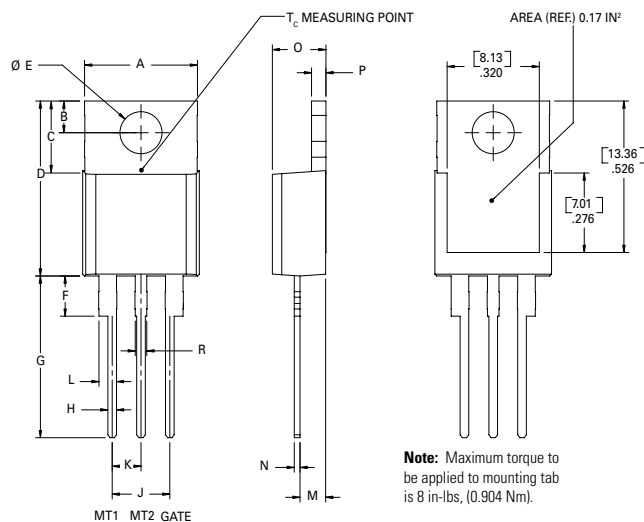
## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

### Dimensions — TO-220AB (R Package) — Non-Isolated Mounting Tab Common with Center Lead



| Dimension | Inches |       | Millimeters |       |
|-----------|--------|-------|-------------|-------|
|           | Min    | Max   | Min         | Max   |
| A         | 0.380  | 0.420 | 9.65        | 10.67 |
| B         | 0.105  | 0.115 | 2.67        | 2.92  |
| C         | 0.230  | 0.250 | 5.84        | 6.35  |
| D         | 0.590  | 0.620 | 14.99       | 15.75 |
| E         | 0.142  | 0.147 | 3.61        | 3.73  |
| F         | 0.110  | 0.130 | 2.79        | 3.30  |
| G         | 0.540  | 0.575 | 13.72       | 14.61 |
| H         | 0.025  | 0.035 | 0.64        | 0.89  |
| J         | 0.195  | 0.205 | 4.95        | 5.21  |
| K         | 0.095  | 0.105 | 2.41        | 2.67  |
| L         | 0.060  | 0.075 | 1.52        | 1.91  |
| M         | 0.085  | 0.095 | 2.16        | 2.41  |
| N         | 0.018  | 0.024 | 0.46        | 0.61  |
| O         | 0.178  | 0.188 | 4.52        | 4.78  |
| P         | 0.045  | 0.060 | 1.14        | 1.52  |
| R         | 0.038  | 0.048 | 0.97        | 1.22  |

### Dimensions — TO-220AB (L Package) — Isolated Mounting Tab



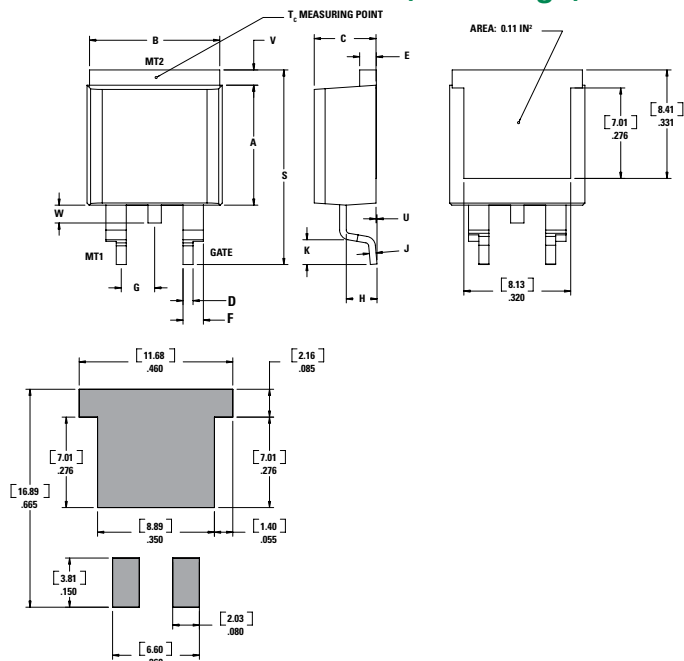
| Dimension | Inches |       | Millimeters |       |
|-----------|--------|-------|-------------|-------|
|           | Min    | Max   | Min         | Max   |
| A         | 0.380  | 0.420 | 9.65        | 10.67 |
| B         | 0.105  | 0.115 | 2.67        | 2.92  |
| C         | 0.230  | 0.250 | 5.84        | 6.35  |
| D         | 0.590  | 0.620 | 14.99       | 15.75 |
| E         | 0.142  | 0.147 | 3.61        | 3.73  |
| F         | 0.110  | 0.130 | 2.79        | 3.30  |
| G         | 0.540  | 0.575 | 13.72       | 14.61 |
| H         | 0.025  | 0.035 | 0.64        | 0.89  |
| J         | 0.195  | 0.205 | 4.95        | 5.21  |
| K         | 0.095  | 0.105 | 2.41        | 2.67  |
| L         | 0.060  | 0.075 | 1.52        | 1.91  |
| M         | 0.085  | 0.095 | 2.16        | 2.41  |
| N         | 0.018  | 0.024 | 0.46        | 0.61  |
| O         | 0.178  | 0.188 | 4.52        | 4.78  |
| P         | 0.045  | 0.060 | 1.14        | 1.52  |
| R         | 0.038  | 0.048 | 0.97        | 1.22  |



# LJxx08xx & QJxx08xHx & QJxx08xx Series

## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

### Dimensions — TO-263AB (N Package) — D2PAK Surface Mount



| Dimension | Inches |       | Millimeters |       |
|-----------|--------|-------|-------------|-------|
|           | Min    | Max   | Min         | Max   |
| A         | 0.360  | 0.370 | 9.14        | 9.40  |
| B         | 0.380  | 0.420 | 9.65        | 10.67 |
| C         | 0.178  | 0.188 | 4.52        | 4.78  |
| D         | 0.025  | 0.035 | 0.64        | 0.89  |
| E         | 0.045  | 0.060 | 1.14        | 1.52  |
| F         | 0.060  | 0.075 | 1.52        | 1.91  |
| G         | 0.095  | 0.105 | 2.41        | 2.67  |
| H         | 0.092  | 0.102 | 2.34        | 2.59  |
| J         | 0.018  | 0.024 | 0.46        | 0.61  |
| K         | 0.090  | 0.110 | 2.29        | 2.79  |
| S         | 0.590  | 0.625 | 14.99       | 15.88 |
| V         | 0.035  | 0.045 | 0.89        | 1.14  |
| U         | 0.002  | 0.010 | 0.05        | 0.25  |
| W         | 0.040  | 0.070 | 1.02        | 1.78  |

### Product Selector

| Part Number | Voltage |      |      | Gate Sensitivity Quadrants |       | Type              | Package                   |
|-------------|---------|------|------|----------------------------|-------|-------------------|---------------------------|
|             | 400V    | 600V | 800V | I – II – III               | IV    |                   |                           |
| LJxx08D8    | x       | x    | -    | 10 mA                      | 20 mA | Sensitive TRIAC   | TO-252 D-AK               |
| LJxx08V8    | x       | x    | -    | 10 mA                      | 20 mA | Sensitive TRIAC   | TO-251 VPAK               |
| QJxx08DH2   | x       | x    | -    | 10 mA                      | -     | Alternistor TRIAC | TO-252 DPAK               |
| QJxx08VH2   | x       | x    | -    | 10 mA                      | -     | Alternistor TRIAC | TO-251 VPAK               |
| QJxx08DH3   | x       | x    | -    | 20 mA                      | -     | Alternistor TRIAC | TO-252 DPAK               |
| QJxx08VH3   | x       | x    | -    | 20 mA                      | -     | Alternistor TRIAC | TO-251 VPAK               |
| QJxx08DH4   | x       | x    | -    | 35 mA                      | -     | Alternistor TRIAC | TO-252 DPAK               |
| QJxx08VH4   | x       | x    | -    | 35 mA                      | -     | Alternistor TRIAC | TO-251 VPAK               |
| QJxx08LH4   | -       | -    | x    | 35 mA                      | -     | Alternistor TRIAC | TO-220L                   |
| QJxx08RH4   | -       | -    | x    | 35 mA                      | -     | Alternistor TRIAC | TO-220R                   |
| QJxx08NH4   | -       | -    | x    | 35 mA                      | -     | Alternistor TRIAC | To-263 D <sup>2</sup> PAK |
| QJxx08L5    | -       | -    | x    | 50 mA                      | -     | Standard TRIAC    | TO-220L                   |
| QJxx08R5    | -       | -    | x    | 50 mA                      | -     | Standard TRIAC    | TO-220R                   |
| QJxx08N5    | -       | -    | x    | 50 mA                      | -     | Standard TRIAC    | To-263 D <sup>2</sup> PAK |

Note: xx=voltage/10

# LJxx08xx & QJxx08xHx & QJxx08xx Series

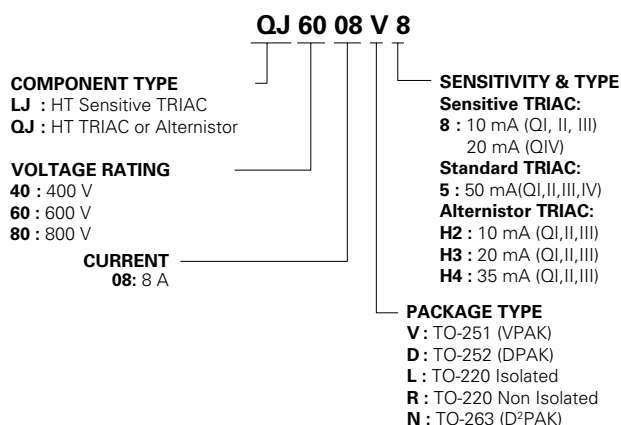
## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

### Packing Options

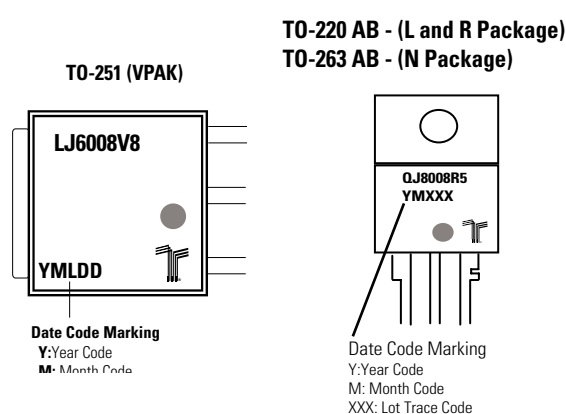
| Part Number | Marking   | Weight | Packing Mode     | Base Quantity      |
|-------------|-----------|--------|------------------|--------------------|
| LJxx08D8TP  | LJxx08D8  | 0.3g   | Tube Pack        | 750 (75 per tube)  |
| LJxx08D8RP  | LJxx08D8  | 0.3g   | Embossed Carrier | 2500               |
| LJxx08V8TP  | LJxx08V8  | 0.4g   | Tube Pack        | 750 (75 per tube)  |
| QJxx06VH2TP | QJxx08VH2 | 0.3g   | Tube Pack        | 750 (75 per tube)  |
| QJxx08DH2TP | QJxx08DH2 | 0.3g   | Tube Pack        | 750 (75 per tube)  |
| QJxx08DH2RP | QJxx08DH2 | 0.3g   | Embossed Carrier | 2500               |
| QJxx08DH3TP | QJxx08DH3 | 0.3g   | Tube Pack        | 750 (75 per tube)  |
| QJxx08DH3RP | QJxx08DH3 | 0.3g   | Embossed Carrier | 2500               |
| QJxx08VH3TP | QJxx08VH3 | 0.4g   | Tube Pack        | 750 (75 per tube)  |
| QJxx08DH4TP | QJxx08DH4 | 0.3g   | Tube Pack        | 750 (75 per tube)  |
| QJxx08DH4RP | QJxx08DH4 | 0.3g   | Embossed Carrier | 2500               |
| QJxx08VH4TP | QJxx08VH4 | 0.4g   | Tube Pack        | 750 (75 per tube)  |
| QJxx08LH4TP | QJxx08LH4 | 2.2g   | Tube Pack        | 1000 (50 per tube) |
| QJxx08RH4TP | QJxx08RH4 | 2.2g   | Tube Pack        | 1000 (50 per tube) |
| QJxx08NH4TP | QJxx08NH4 | 1.6g   | Tube Pack        | 1000 (50 per tube) |
| QJxx08NH4RP | QJxx08NH4 | 1.6g   | Embossed Carrier | 500                |
| QJxx08L5TP  | QJxx08L5  | 2.2g   | Tube Pack        | 1000 (50 per tube) |
| QJxx08R5TP  | QJxx08R5  | 2.2g   | Tube Pack        | 1000 (50 per tube) |
| QJxx08N5TP  | QJxx08N5  | 1.6g   | Tube Pack        | 1000 (50 per tube) |
| QJxx08N5RP  | QJxx08N5  | 1.6g   | Embossed Carrier | 500                |

Note: xx=voltage/10

### Part Numbering System



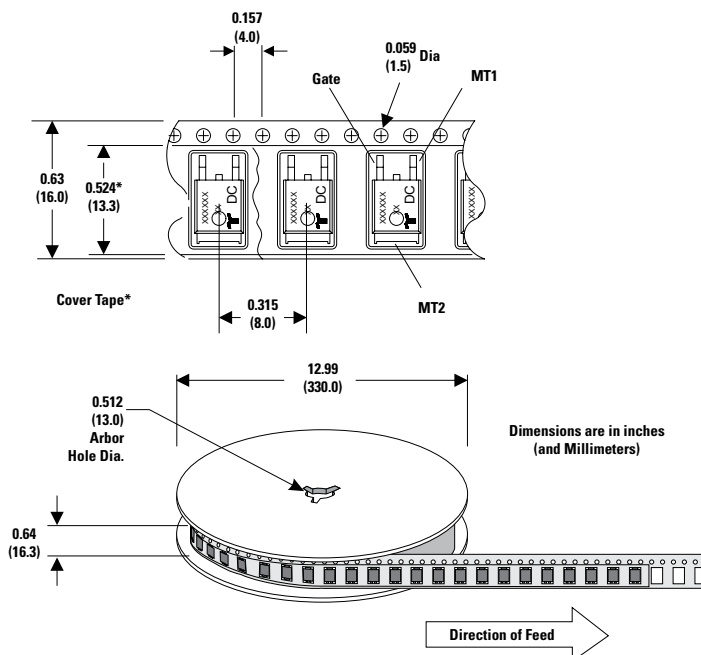
### Part Marking System



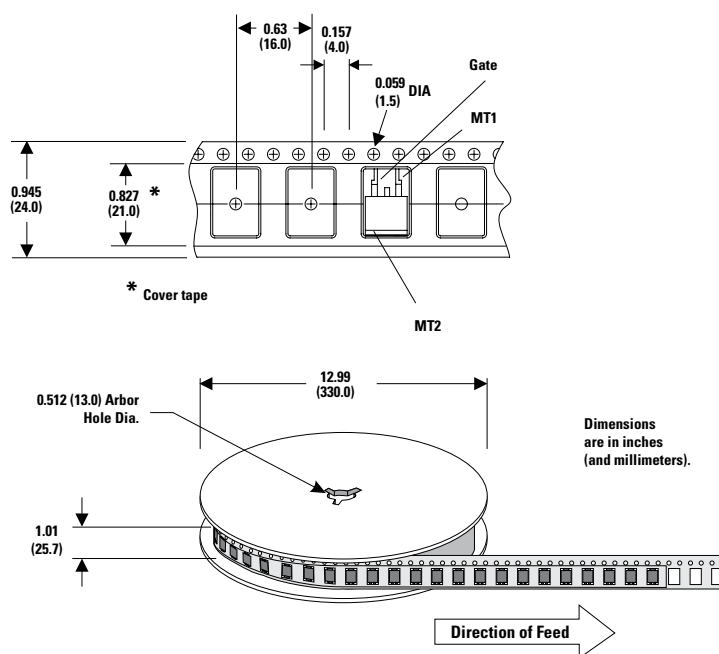
# LJxx08xx & QJxx08xHx & QJxx08xx Series

## 8 A High Temp Sensitive, Standard, & Alternistor (High Communication) TRIACs

### TO-252 Embossed Carrier Reel Pack (RP) Specifications (Meets all EIA-481-2 Standards)



### TO-263 Embossed Carrier Reel Pack (RP) Specifications (Meets all EIA-481-2 Standards)



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