



**THE DATASHEET OF
8TQ100**



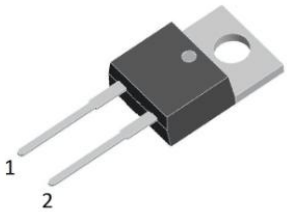
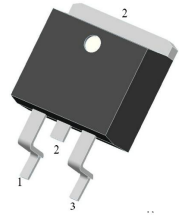
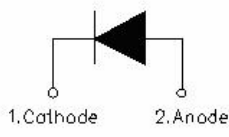
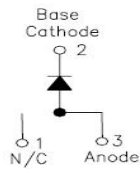
8TQ080/S/ 8TQ100/S SCHOTTKY RECTIFIER

Features

- 150°C T_J operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Applications

- Switching power supply
- Redundant power subsystems
- Converters
- Free-Wheeling diodes
- Reverse battery protection

| 8TQ... | 8TQ...S |
|---|--|
|  |  |
|  <p>1.Cathode 2.Anode</p> |  <p>Base Cathode 2 1 N/C 3 Anode</p> |
| TO-220AB | D ² PAK |

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units |
|---|--------------------|--|------|----------|
| Peak Repetitive Reverse Voltage | V _{RRM} | - | 80 | (8TQ080) |
| Working Peak Reverse Voltage | V _{RWM} | | 100 | (8TQ100) |
| DC Blocking Voltage | V _R | | | V |
| Average Rectified Forward Current | I _{F(AV)} | 50% duty cycle @T _c =116°C, rectangular wave form | 8 | A |
| Peak One Cycle Non-Repetitive Surge Current | I _{FSM} | 8.3ms, Half Sine pulse | 330 | A |
| Non-Repetitive Avalanche Energy | E _{AS} | T _J =25°C, I _{AS} =0.50A, L=60mH | 7.5 | mJ |
| Repetitive Avalanche Current | I _{AR} | Current decaying linearly to zero in 1 µsec Frequency limited by T _J max.V _A =1.5×V _R typical | 0.50 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|------------------------|-----------------|---|--------|--------|-------|
| Forward Voltage Drop* | V _{F1} | @ 8A, Pulse, T _J = 25 °C | 0.71 | 0.75 | V |
| | V _{F2} | @ 8A, Pulse, T _J = 125 °C | 0.56 | 0.58 | V |
| Reverse Current * | I _{R1} | @V _R = rated V _R T _J = 25 °C | 0.0003 | 1.0 | mA |
| | I _{R2} | @V _R = rated V _R T _J = 125 °C | 0.02 | 7 | mA |
| Junction Capacitance | C _T | @V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz | 400 | 500 | pF |
| Series Inductance | L _S | Measured lead to lead 5 mm from package body | 8.0 | - | nH |
| Voltage Rate of Change | dv/dt | - | - | 10,000 | V/μs |

* Pulse width < 300 μs, duty cycle < 2%

Thermal-Mechanical Specifications:

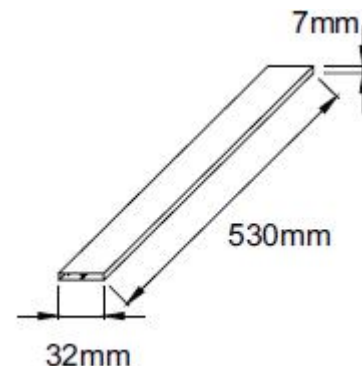
| Characteristics | Symbol | Condition | Specification | Units |
|--|----------------------------|---|---------------|-------|
| Junction Temperature | T _J | - | -55 to +150 | °C |
| Storage Temperature | T _{stg} | - | -55 to +150 | °C |
| Typical Thermal Resistance Junction to Case | R _{θJC} | DC operation | 2.0 | °C/W |
| Typical Thermal Resistance Case to Heat Sink | R _{θCS} | Mounting surface, smooth and greased(only for TO-220) | 0.50 | °C/W |
| Case Style | TO-220ACD ² PAK | | | |

Tube Specification

| Device | Package | Weight | Shipping |
|---------|--------------------|--------|---------------|
| 8TQ... | TO-220AC | 1.8g | 50pcs / tube |
| 8TQ...S | D ² PAK | 1.85g | 800pcs / reel |

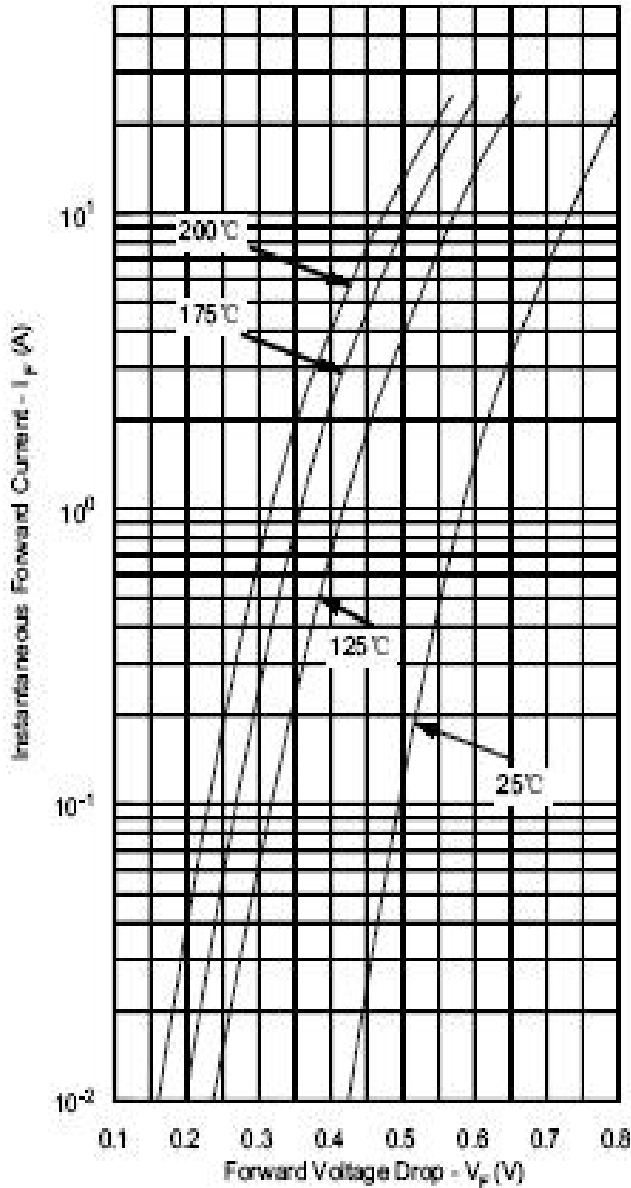
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Tube Specification(TO-220AC)

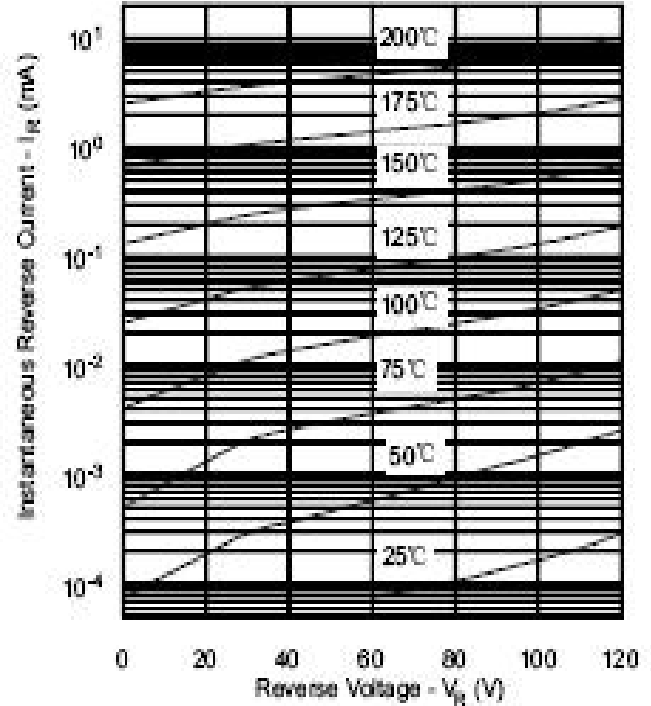


Ratings and Characteristics Curves

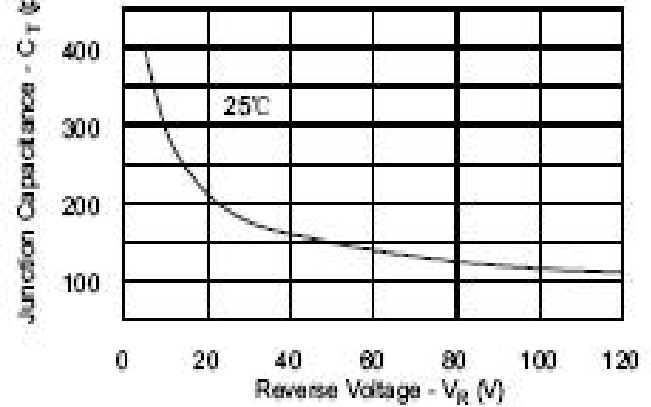
Typical Forward Characteristics



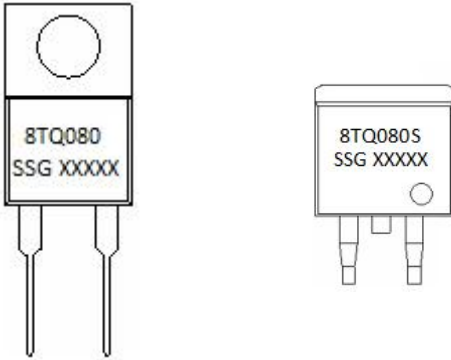
Typical Reverse Characteristics



Typical Junction Capacitance



Marking Diagram

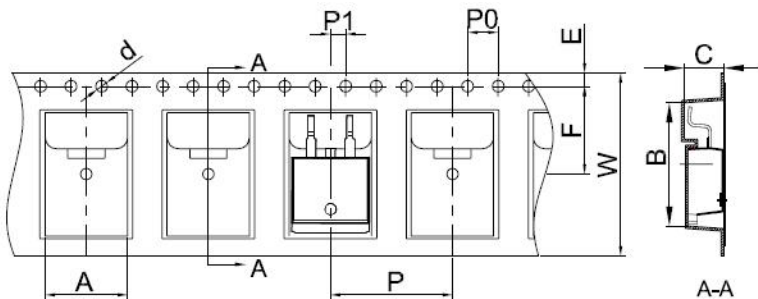


Where XXXXX is YYWWL

8 = Forward Current (8A)
 TQ = Device Type
 80/100 = Reverse Voltage (80/100V)
 S = Package type
 SSG = SSG
 YY = Year
 WW = Week
 L = Lot Number

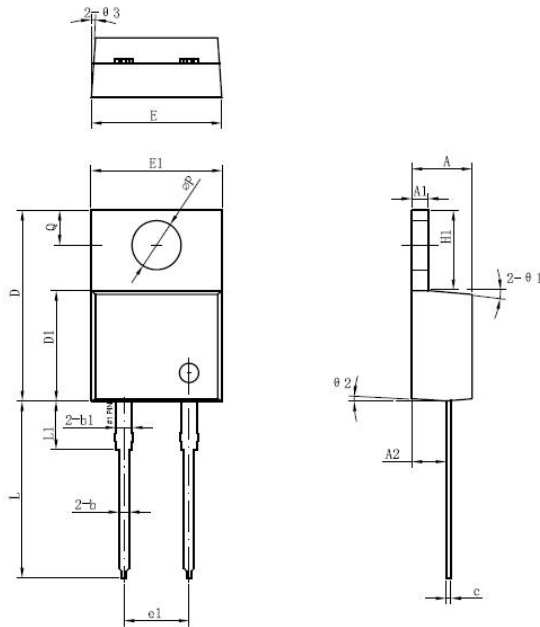
Cautions: Molding resin
 Epoxy resin UL:94V-0

Carrier Tape Specification D²PAK



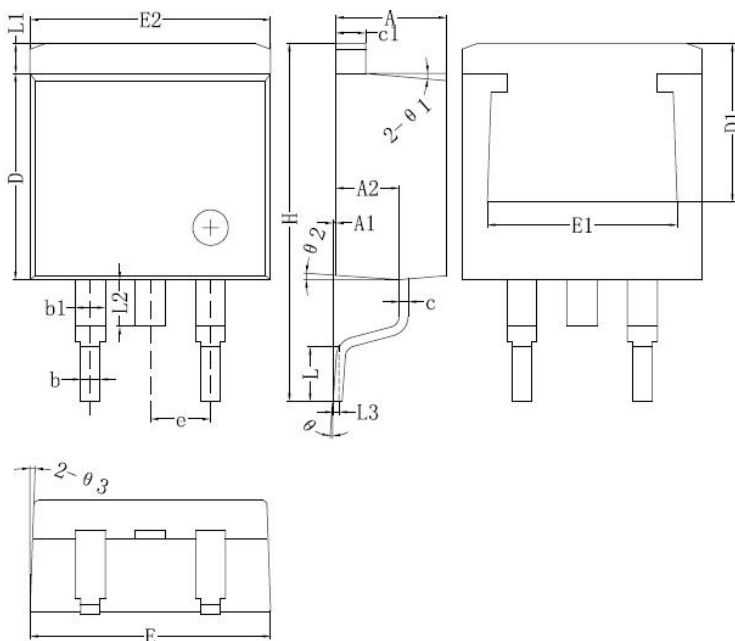
| Symbol | Millimeters | |
|--------|-------------|-------|
| | Min. | Max. |
| A | 10.70 | 10.90 |
| B | 16.03 | 16.23 |
| C | 5.11 | 5.31 |
| d | 1.45 | 1.65 |
| E | 1.65 | 1.85 |
| F | 11.40 | 11.60 |
| P0 | 3.90 | 4.10 |
| P | 15.90 | 16.10 |
| P1 | 1.90 | 2.10 |
| W | 23.90 | 24.30 |

Mechanical Dimensions TO-220AC



| Symbol | Dimensions in millimeters | | |
|--------|---------------------------|---------|-------|
| | Min. | Typical | Max. |
| A | 4.47 | 4.70 | 4.85 |
| A1 | 1.17 | 1.27 | 1.37 |
| A2 | 2.52 | 2.69 | 2.89 |
| b | 0.71 | 0.81 | 0.96 |
| b1 | 1.17 | 1.27 | 1.37 |
| c | 0.31 | 0.38 | 0.61 |
| D | 14.64 | 14.94 | 15.24 |
| D1 | 8.50 | 8.07 | 8.90 |
| E | 10.01 | 10.16 | 10.31 |
| E1 | 9.98 | 10.18 | 10.38 |
| e1 | 4.98 | 5.08 | 5.18 |
| H1 | 6.04 | 6.24 | 6.44 |
| L | 13.00 | 13.86 | 14.08 |
| L1 | 3.56 | 3.80 | 3.96 |
| ΦP | 3.74 | 3.84 | 4.04 |
| Q | 2.54 | 2.74 | 2.94 |
| Θ1 | | 5° | |
| Θ2 | | 4° | |
| Θ3 | | 4° | |

Mechanical Dimensions D²PAK



| Symbol | Millimeters | | |
|--------|-------------|---------|-------|
| | Min. | Typical | Max. |
| A | 4.47 | 4.70 | 4.85 |
| A1 | 0 | 0.10 | 0.25 |
| A2 | 2.59 | 2.69 | 2.89 |
| b | 0.71 | 0.81 | 0.96 |
| b1 | 1.17 | 1.27 | 1.37 |
| c | 0.31 | 0.38 | 0.61 |
| c1 | 1.17 | 1.27 | 1.37 |
| D | 8.50 | 8.70 | 8.90 |
| D1 | 6.40 | | |
| E | 10.01 | 10.16 | 10.31 |
| E1 | 7.6 | | |
| E2 | 9.98 | 10.08 | 10.31 |
| e | | 2.54 | |
| H | 14.6 | 15.1 | 15.6 |
| L | 2.00 | 2.30 | 2.74 |
| L1 | 1.12 | 1.27 | 1.42 |
| L2 | 1.30 | | 2.20 |
| L3 | | 0.25BSC | |
| e | 0 | - | 8° |
| e1 | | 5° | |
| e2 | | 4° | |
| e3 | | 4° | |

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