

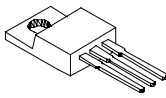
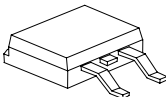
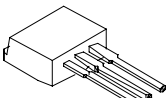
## 16CTQ150/16CTQ150S /16CTQ150-1 SCHOTTKY RECTIFIER

### Applications:

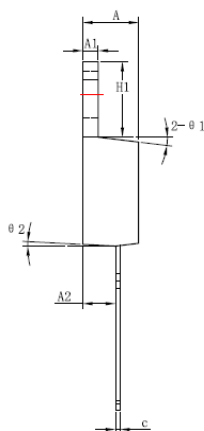
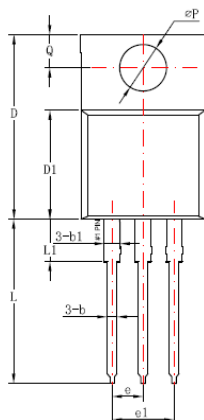
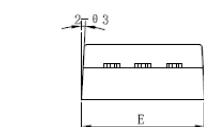
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

- 175°C T<sub>J</sub> operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- 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

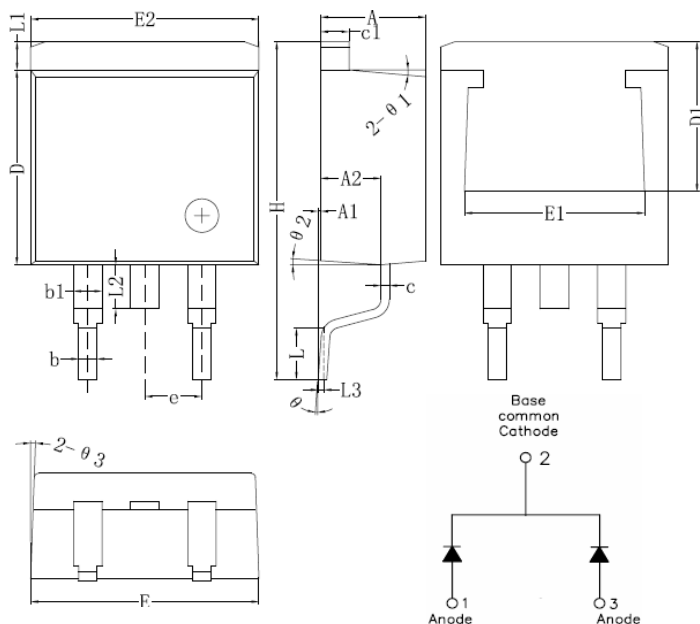
| Case styles                                                                         |                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 16CTQ150                                                                            | 16CTQ150S                                                                           | 16CTQ150-1                                                                            |
|  |  |  |
| TO-220AB                                                                            | D²PAK                                                                               | TO-262                                                                                |

Mechanical Dimensions: In Inches / mm



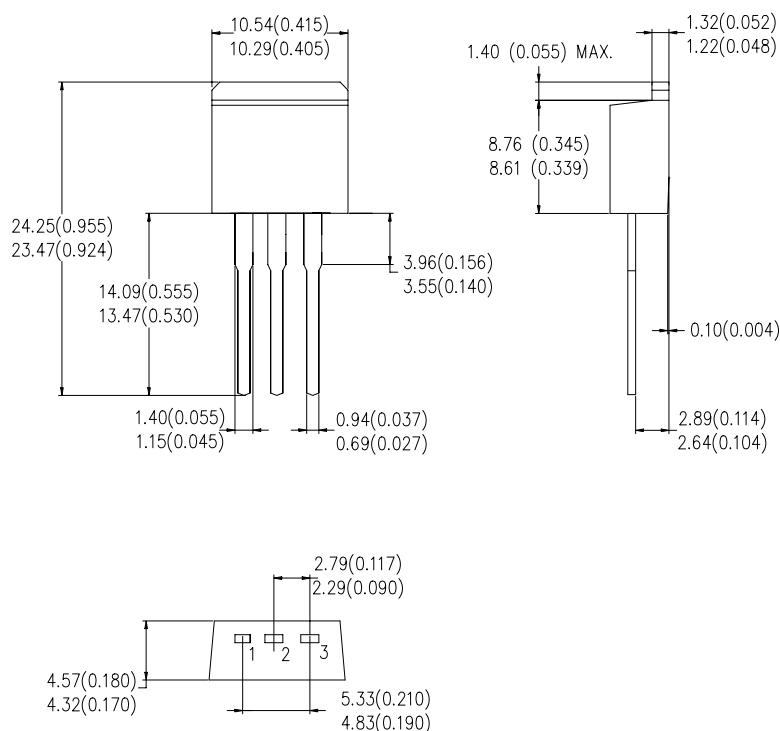
| Symbol | Dimensions in millimeters |         |       |
|--------|---------------------------|---------|-------|
|        | Min                       | Typical | Max   |
| A      | 4.42                      | 4.57    | 4.72  |
| A1     | 1.17                      | 1.27    | 1.37  |
| A2     | 2.59                      | 2.69    | 2.89  |
| b      | 0.71                      | 0.81    | 0.96  |
| b1     |                           | 1.27    |       |
| c      | 0.36                      | 0.38    | 0.61  |
| D      | 14.94                     | 15.24   | 15.54 |
| D1     | 8.85                      | 9.00    | 9.15  |
| E      | 10.01                     | 10.16   | 10.31 |
| e      |                           | 2.54    |       |
| e1     |                           | 5.06    |       |
| H1     | 6.04                      | 6.24    | 6.44  |
| L      | 12.7                      | 13.56   | 13.78 |
| L1     |                           | 3.5     |       |
| ΦP     | 3.74                      | 3.84    | 4.04  |
| Q      | 2.54                      | 2.74    | 2.94  |
| Θ1     |                           | 7°      |       |
| Θ2     |                           | 3°      |       |
| Θ3     |                           | 4°      |       |

### TO-220AB



**D<sup>2</sup>PAK**

| Symbol | Dimensions in millimeters |         |       |
|--------|---------------------------|---------|-------|
|        | Min.                      | Typical | Max.  |
| A      | 4.55                      | 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     |                           | 1.27    |       |
| c      | 0.36                      | 0.38    | 0.61  |
| c1     | 1.17                      | 1.27    | 1.37  |
| D      | 8.55                      | 8.70    | 8.85  |
| D1     | 6.40                      |         |       |
| E      | 10.01                     | 10.16   | 10.31 |
| E1     | 7.6                       |         |       |
| E2     | 9.98                      | 10.08   | 10.18 |
| e      |                           | 2.54    |       |
| H      | 14.6                      | 15.1    | 15.6  |
| L      | 2.00                      | 2.30    | 2.70  |
| L1     | 1.17                      | 1.27    | 1.40  |
| L2     |                           |         | 2.20  |
| L3     |                           | 0.25BSC |       |
| e      | 0                         | -       | 8°    |
| e1     |                           | 5°      |       |
| e2     |                           | 4°      |       |
| e3     |                           | 4°      |       |

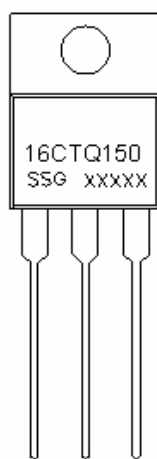


**TO-262**

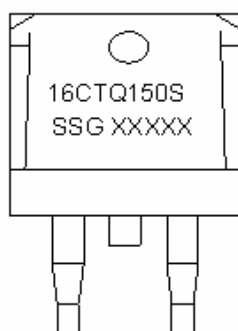
Technical Data  
Data Sheet N0667, Rev. -

**Green Products**

## Marking Diagram:



16CTQ150



16CTQ150S

Where XXXXX is YYWWL

16CTQ150 = Part Name  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

## Ordering Information:

| Device    | Package                         | Shipping      |
|-----------|---------------------------------|---------------|
| 16CTQ150  | TO-220AB<br>(Pb-Free)           | 50pcs / tube  |
| 16CTQ150S | D <sup>2</sup> PAK<br>(Pb-Free) | 800pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

## Maximum Ratings:

| Characteristics                                                  | Symbol      | Condition                                                             | Max.                         | Units |
|------------------------------------------------------------------|-------------|-----------------------------------------------------------------------|------------------------------|-------|
| Peak Inverse Voltage                                             | $V_{RWM}$   | -                                                                     | 150                          | V     |
| Max. Average Forward                                             | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 154^\circ\text{C}$ ,<br>rectangular wave form | 8(per leg)<br>16(per device) | A     |
| Max. Peak One Cycle<br>Non-Repetitive Surge Current<br>(per leg) | $I_{FSM}$   | 8.3 ms, half Sine pulse                                               | 276                          | A     |

### Electrical Characteristics:

| Characteristics                                    | Symbol          | Condition                                                               | Max.   | Units |
|----------------------------------------------------|-----------------|-------------------------------------------------------------------------|--------|-------|
| Max. Forward Voltage Drop<br>*                     | V <sub>F1</sub> | @ 8A, Pulse, T <sub>J</sub> = 25 °C                                     | 0.8    | V     |
|                                                    | V <sub>F2</sub> | @ 8A, Pulse, T <sub>J</sub> = 125 °C                                    | 0.66   | V     |
| Max. Reverse Current at DC condition               | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub><br>T <sub>J</sub> = 25 °C        | 0.55   | mA    |
| Max. Reverse Current                               | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub><br>T <sub>J</sub> = 125 °C       | 7.0    | mA    |
| Max. Junction Capacitance                          | C <sub>T</sub>  | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C<br>f <sub>sig</sub> = 1MHz | 500    | pF    |
| Typical Series Inductance                          | L <sub>S</sub>  | Measured lead to lead 5 mm from package body                            | 8.0    | nH    |
| Max. Voltage Rate of Change(Rated V <sub>R</sub> ) | dv/dt           | -                                                                       | 10,000 | V/μs  |

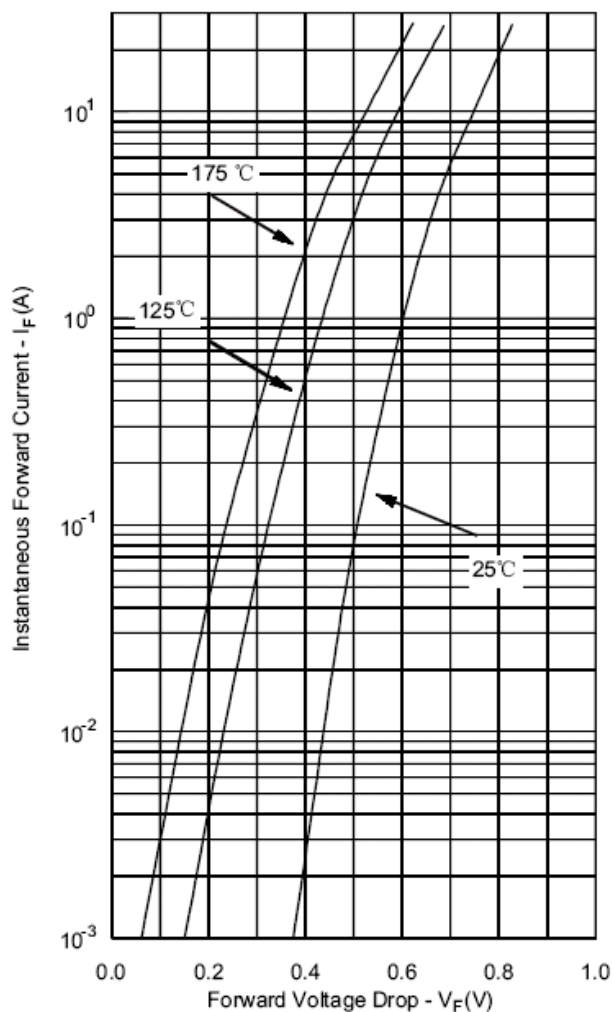
\* Pulse Width < 300μs, Duty Cycle <2%

### Thermal-Mechanical Specifications:

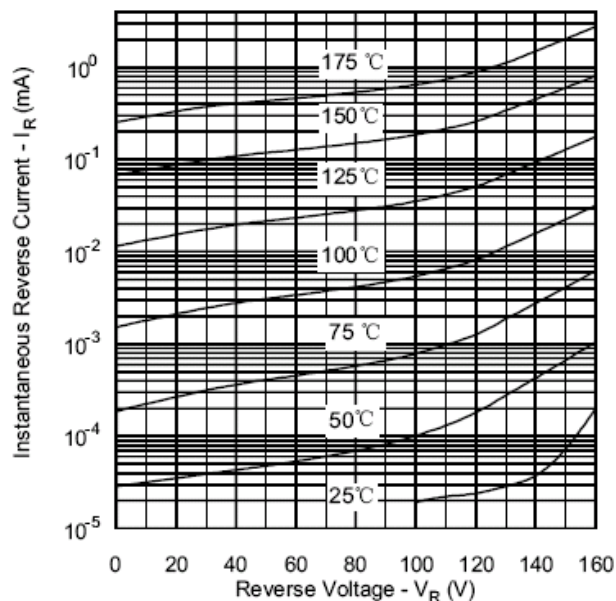
| Characteristics                                       | Symbol                                                                                    | Condition                            | Specification | Units |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------|---------------|-------|
| Max. Junction Temperature                             | T <sub>J</sub>                                                                            | -                                    | -55 to +175   | °C    |
| Max. Storage Temperature                              | T <sub>stg</sub>                                                                          | -                                    | -55 to +175   | °C    |
| Maximum Thermal Resistance Junction to Case (per leg) | R <sub>θJC</sub>                                                                          | DC operation                         | 3.25          | °C/W  |
| Typical Thermal Resistance, case to Heat Sink         | R <sub>θcs</sub>                                                                          | Mounting surface, smooth and greased | 0.50          | °C/W  |
| Approximate Weight                                    | wt                                                                                        | -                                    | 2             | g     |
| Case Style                                            | TO-220AB,D <sup>2</sup> PAK,TO-262(Suffix“s”for D <sup>2</sup> PAK; Suffix“-1”for TO-262) |                                      |               |       |



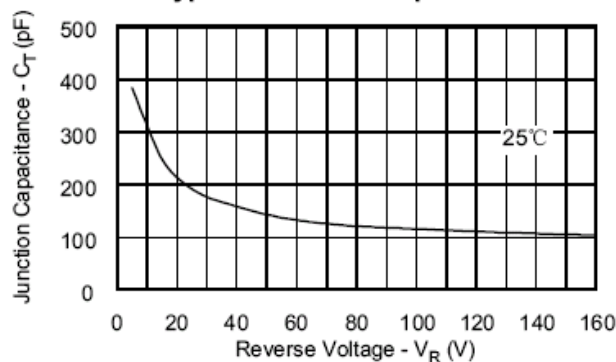
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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