



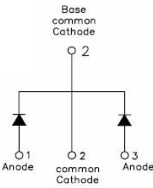
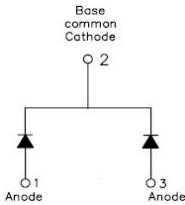
## 15CTQ.../15CTQ...S SCHOTTKY RECTIFIER

### Features

- 150 °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
- Terminals finish: 100% Pure Tin
- 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
- Converters
- Free-Wheeling diodes
- Reverse battery protection

| 15CTQ...  | 15CTQ...S   |
|---|---|
|   |   |
|  |  |
| TO-220AB  | D <sup>2</sup> PAK  |

### Maximum Ratings:

| Characteristics                                      | Symbol              | Condition  | Max.                           | Units |
|--|---------------------|--|--------------------------------|-------|
| Peak Repetitive Reverse Voltage                      | V <sub>RRM</sub>    | -  | 35(15CTQ035)                   | V     |
| Working Peak Reverse Voltage                         | V <sub>RWM</sub>    |  | 40(15CTQ040)                   |       |
| DC Blocking Voltage                                  | V <sub>R</sub>      |  | 45(15CTQ045)                   |       |
| Average Rectified Forward Current                    | I <sub>F (AV)</sub> | 50% duty cycle @T <sub>c</sub> =125°C, rectangular wave form | 7.5(Per Leg)<br>15(Per Device) | A     |
| Peak One Cycle Non-Repetitive Surge Current(per leg) | I <sub>FSM</sub>    | 8.3ms, Half Sine pulse                                       | 180                            | A     |

### Electrical Characteristics:

| Characteristics                 | Symbol          | Condition   | Typ. | Max.   | Units |
|---------------------------------|-----------------|---|------|--------|-------|
| Forward Voltage Drop (per leg)* | V <sub>F1</sub> | @ 15A, Pulse, T <sub>J</sub> = 25 °C                                    | 0.65 | 0.84   | V     |
|                                 | V <sub>F2</sub> | @ 15A, Pulse, T <sub>J</sub> = 125 °C                                   | 0.60 | 0.72   | V     |
| Reverse Current (per leg)*      | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub><br>T <sub>J</sub> = 25 °C        | 0.01 | 1.0    | mA    |
|                                 | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub><br>T <sub>J</sub> = 125 °C       | 5    | 15     | mA    |
| Junction Capacitance (per leg)  | C <sub>T</sub>  | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C<br>f <sub>SIG</sub> = 1MHz | 360  | 400    | pF    |
| Voltage Rate of Change          | dv/dt           | -   | -    | 10,000 | V/μs  |

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

### Thermal-Mechanical Specifications:

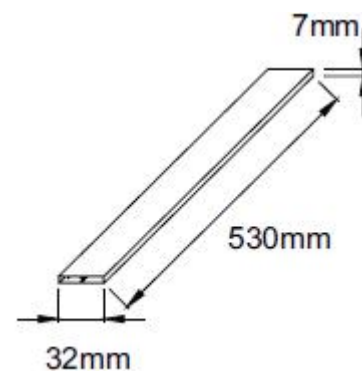
| Characteristics                                      | Symbol                      | Condition                            | Specification | Units |
|--|-----------------------------|--------------------------------------|---------------|-------|
| Junction Temperature                                 | T <sub>J</sub>              | -                                    | -55 to +150   | °C    |
| Storage Temperature                                  | T <sub>stg</sub>            | -                                    | -55 to +150   | °C    |
| Typical Thermal Resistance Junction to Case(per leg) | R <sub>θJC</sub>            | DC operation                         | 3             | °C/W  |
| Typical Thermal Resistance, case to Heat Sink        | R <sub>θcs</sub>            | Mounting surface, smooth and greased | 0.5           | °C/W  |
| Case Style   | TO-220AB D <sup>2</sup> PAK |                                      |               |       |

### Tube Specification

| Device    | Package            | Weight | Shipping      |
|-----------|--------------------|--------|---------------|
| 15CTQ...  | TO-220AB           | 1.8g   | 50pcs / tube  |
| 15CTQ...S | D <sup>2</sup> PAK | 1.85g  | 800pcs / reel |

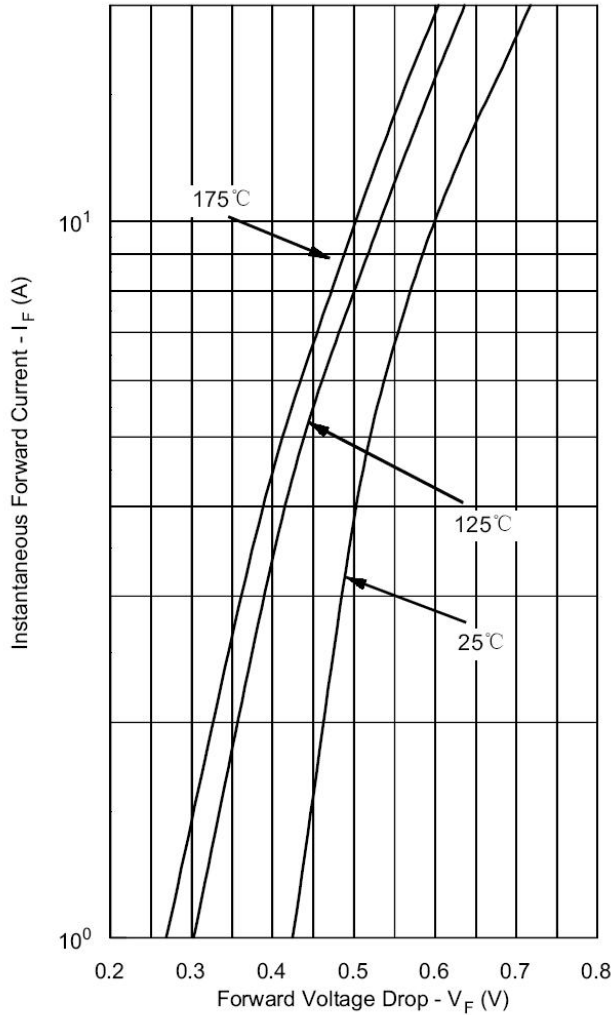
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

### Tube Specification(TO-220AB)

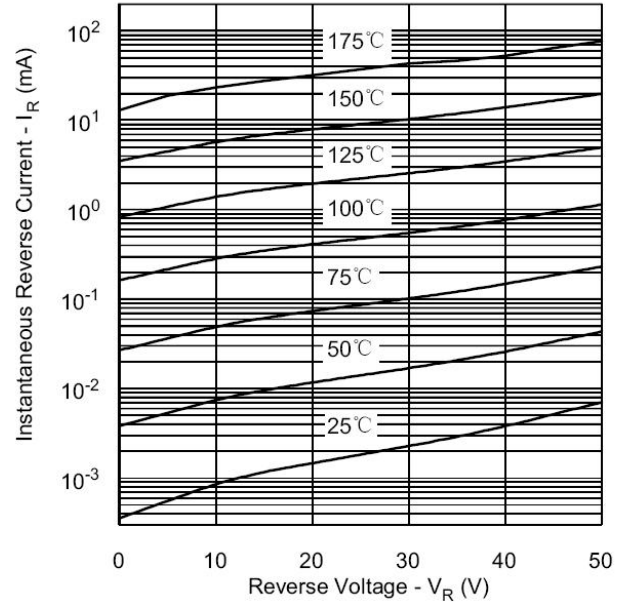


**Ratings and Characteristics Curves**

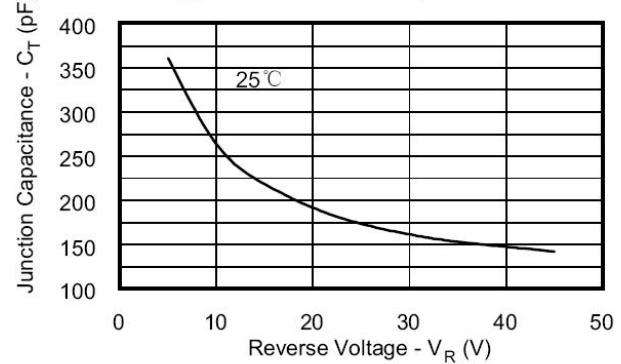
**Typical Forward Characteristics**



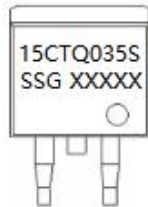
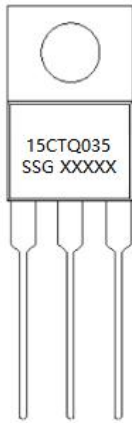
**Typical Reverse Characteristics**



**Typical Junction Capacitance**



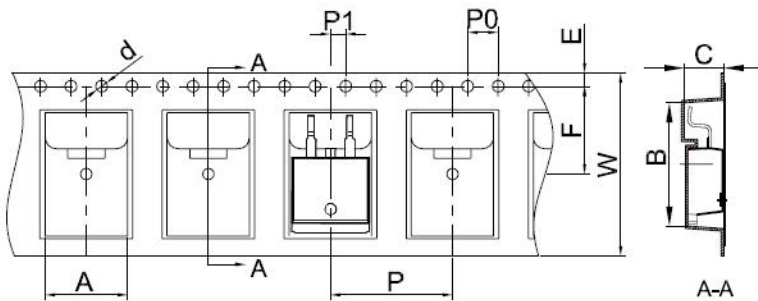
## Marking Diagram



Where XXXXX is YYWWL

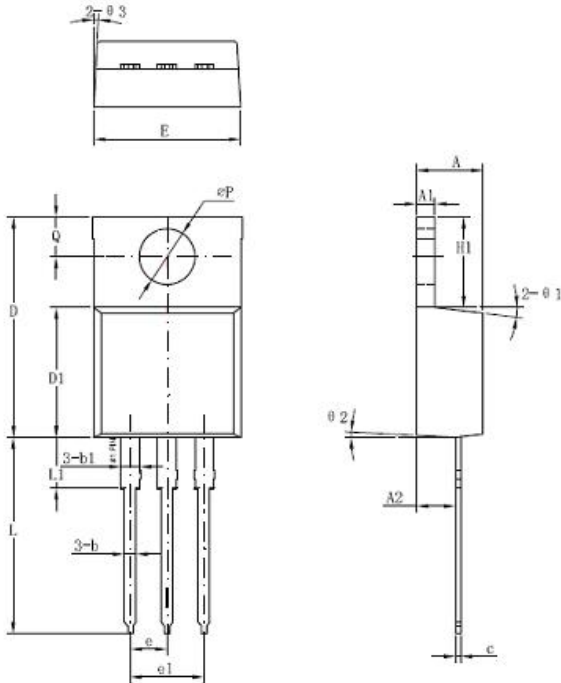
15CTQ035/S = Part Name  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

## Carrier Tape Specification D<sup>2</sup>PAK



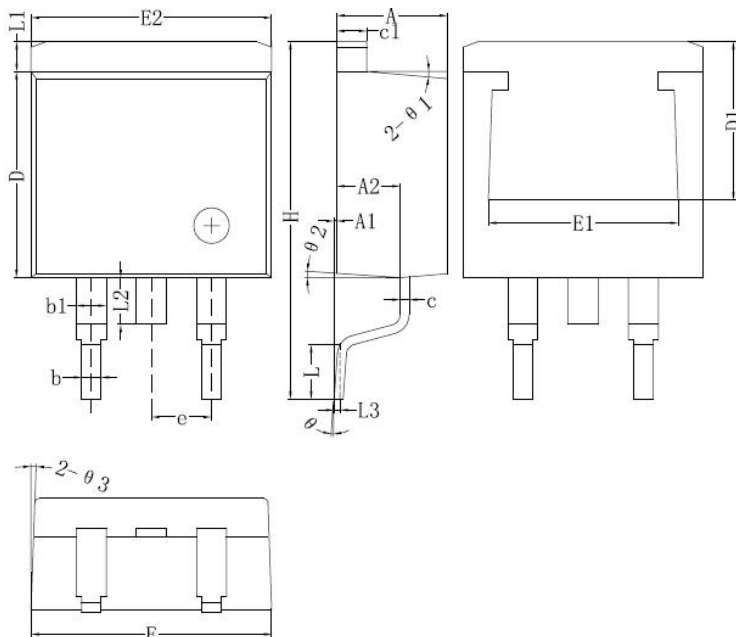
| Symbol | Millimeters |       |
|--------|-------------|-------|
|        | Min.        | Max.  |
| A      | 10.70       | 10.90 |
| B      | 16.03       | 16.23 |
| C      | 5.11        | 5.31  |
| d      | 1.45        | 1.65  |
| E      | 1.65        | 1.85  |
| F      | 11.40       | 11.60 |
| P0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

**Mechanical Dimensions TO-220AB**



| Symbol | Millimeters |         |       |
|--------|-------------|---------|-------|
|        | Min.        | Typical | Max.  |
| A      | 4.42        | 4.57    | 4.72  |
| 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      | 14.94       | 15.24   | 15.54 |
| D1     | 8.85        | 9.00    | 9.15  |
| E      | 10.01       | 10.16   | 10.31 |
| e      |             | 2.54    |       |
| e1     | 4.98        | 5.06    | 5.18  |
| H1     | 6.04        | 6.24    | 6.44  |
| L      | 12.7        | 13.56   | 13.80 |
| L1     | 3.56        | 3.5     | 3.96  |
| ΦP     | 3.74        | 3.84    | 4.04  |
| Q      | 2.54        | 2.74    | 2.94  |
| θ1     |             | 7°      |       |
| θ2     |             | 3°      |       |
| θ3     |             | 4°      |       |

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



| 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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