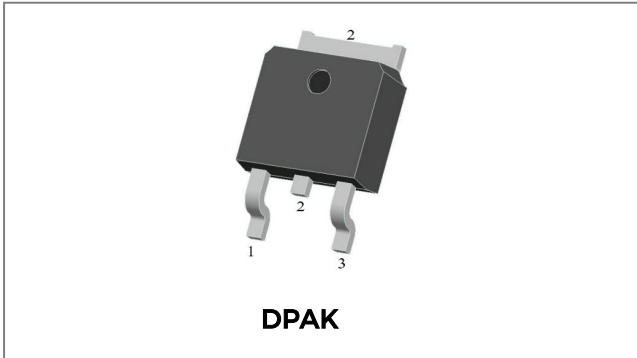


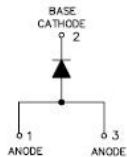
## STD10300 SCHOTTKY RECTIFIER



### Features

- 175 °C T<sub>J</sub> operation
- Ultralow forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Trench MOS Schottky technology
- 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

### Circuit Diagram



### Applications

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

### Maximum Ratings(limiting values, at 25 °C unless otherwise specified)

| Characteristics                                                                        | Symbol                                                 | Condition                     | Max. | Units |
|----------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------|------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | -                             | 300  | V     |
| Average Rectified Forward Current                                                      | I <sub>F(AV)</sub>                                     | T <sub>c</sub> =157 °C, In DC | 10   | A     |
| Peak One Cycle Non-Repetitive Surge Current                                            | I <sub>FSM</sub>                                       | 8.3ms, Half Sine pulse        | 110  | A     |

### Electrical Characteristics:

| Characteristics        | Symbol          | Condition                                                             | Typ. | Max. | Units |
|------------------------|-----------------|-----------------------------------------------------------------------|------|------|-------|
| Forward Voltage Drop * | V <sub>F1</sub> | @ 10A, Pulse, T <sub>J</sub> = 25 °C                                  | 0.84 | 0.92 | V     |
|                        | V <sub>F2</sub> | @ 10A, Pulse, T <sub>J</sub> = 125 °C                                 | 0.70 | 0.78 | V     |
| Reverse Current*       | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C       | 0.05 | 10   | uA    |
|                        | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C      | 0.08 | 1    | mA    |
| Junction Capacitance   | C <sub>T</sub>  | @V <sub>R</sub> = 5V, T <sub>c</sub> = 25 °C, f <sub>sig</sub> = 1MHz | 208  | -    | pF    |

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

## Thermal-Mechanical Specifications:

| Characteristics                             | Symbol           | Condition    | Specification | Units                |
|---------------------------------------------|------------------|--------------|---------------|----------------------|
| Junction Temperature                        | $T_J$            | -            | -55 to +175   | $^{\circ}\text{C}$   |
| Storage Temperature                         | $T_{\text{stg}}$ | -            | -55 to +175   | $^{\circ}\text{C}$   |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$  | DC operation | 2             | $^{\circ}\text{C/W}$ |
| Approximate Weight                          | wt               | -            | 0.39          | g                    |
| Case Style                                  | DPAK             |              |               |                      |

## Ratings and Characteristics Curves

Figure1 Typical Forward Characteristics

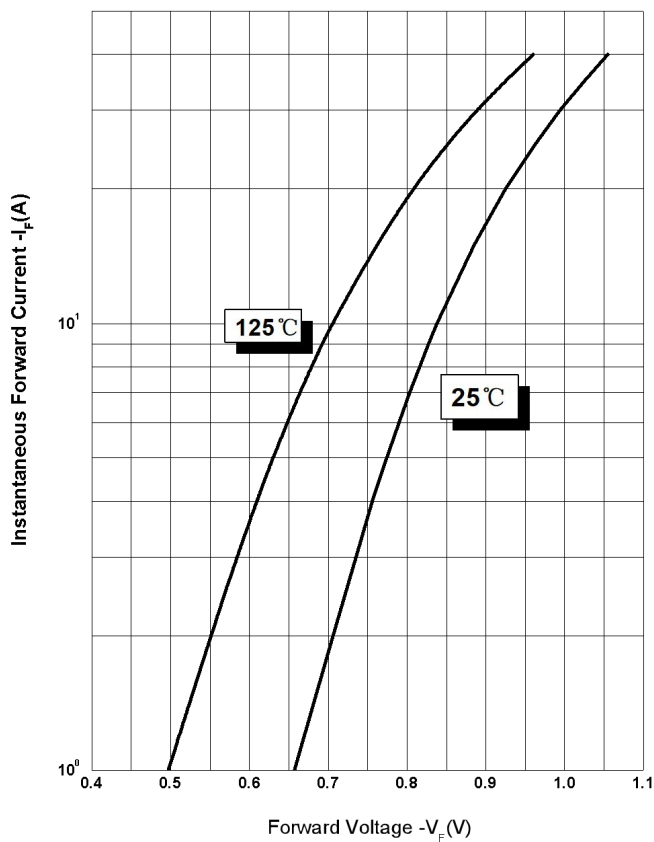


Figure 2 Typical Reverse Characteristics

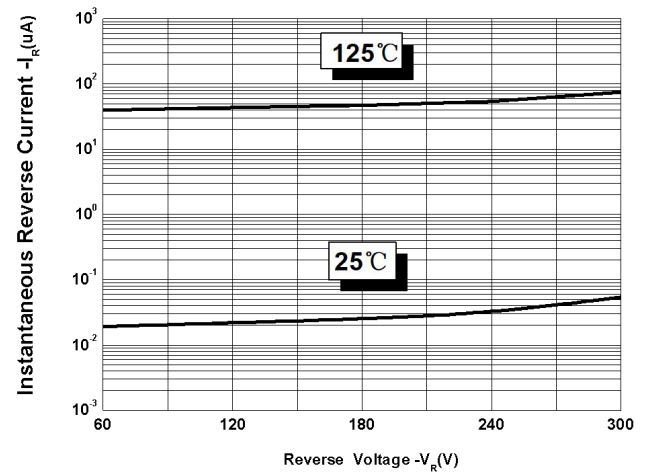
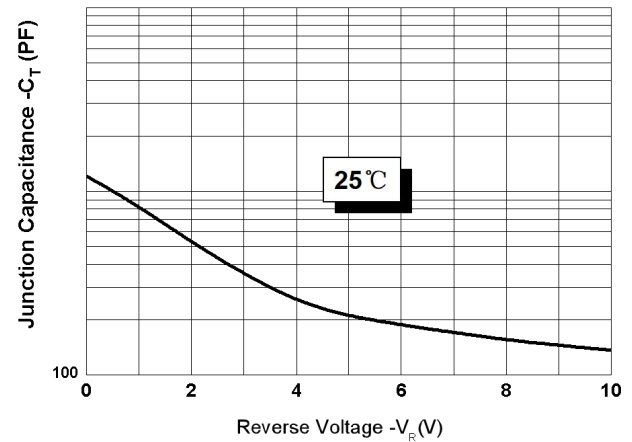
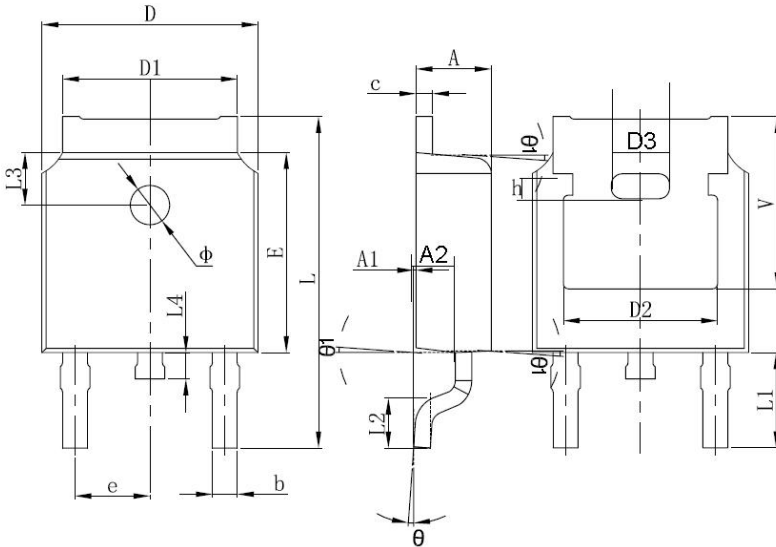


Figure 3 Typical Junction Capacitance



## Mechanical Dimensions DPAK



The outline from different package houses may have slight differences. So the outline above is just schematic. The dimensions are controlled per specifications.

| SYMBOL | Dimensions in millimeters |      |       |
|--------|---------------------------|------|-------|
|        | Min.                      | Typ. | Max.  |
| A      | 2.18                      | -    | 2.39  |
| A1     | -                         | -    | 0.13  |
| b      | 0.64                      | -    | 0.89  |
| c      | 0.46                      | -    | 0.89  |
| D      | 6.35                      | -    | 6.73  |
| D2     | 4.32                      | -    | -     |
| E      | 5.97                      | 6.10 | 6.22  |
| e      | 2.29BSC                   |      |       |
| L      | 9.40                      | -    | 10.41 |
| L2     | 1.40                      | 1.52 | 1.78  |
| L4     | -                         | -    | 1.02  |
| θ      | 0°                        | -    | 10°   |
| V      | 5.21                      | -    | -     |

## Ordering Information

| Device     | Package | Shipping       |
|------------|---------|----------------|
| STD10300   | DPAK    | 2500pcs / reel |
| STD10300TR | DPAK    | 2500pcs / reel |

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

## Marking Diagram

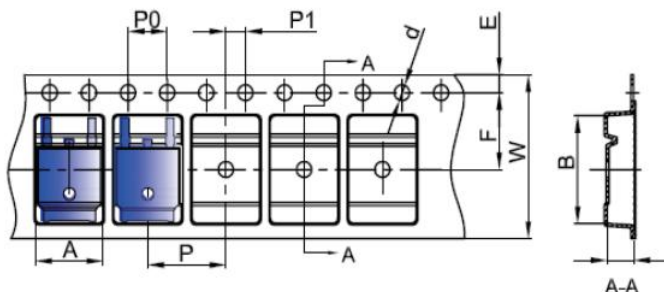


Where XXXXX is YYWWL

ST = Device Type  
D = Package type  
10 = Forward Current (10A)  
300 = Reverse Voltage(300V)  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL94V-0

## Carrier Tape Specification DPAK



| SYMBOL | Millimeters |       |
|--------|-------------|-------|
|        | Min.        | Max.  |
| A      | 6.80        | 7.00  |
| B      | 10.40       | 10.60 |
| C      | 2.60        | 2.80  |
| d      | Φ1.45       | Φ1.65 |
| E      | 1.65        | 1.85  |
| F      | 7.40        | 7.60  |
| P0     | 3.90        | 4.10  |
| P      | 7.90        | 8.10  |
| P1     | 1.90        | 2.10  |
| W      | 15.90       | 16.30 |

**Technical Data**  
**Data Sheet N2391, Rev.-**



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