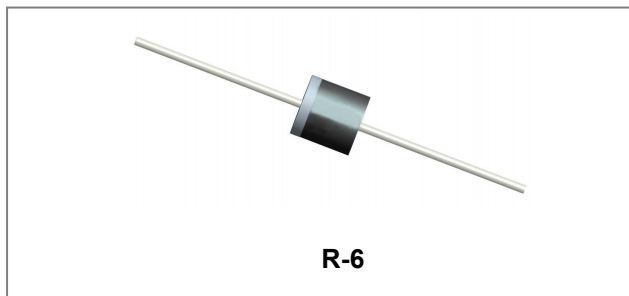


## 20SQ045 SCHOTTKY BARRIER RECTIFIER



### Features

- Super-high speed & low noise switching
- Low voltage drop
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Mechanical Data

- DC-DC converters
- AC adapter
- High frequency rectification circuit
- Bypass diodes

### Maximum Ratings:

| Characteristics                                                                        | Symbol                          | Condition                                                         | Max. | Units |
|----------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------|------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | -                                                                 | 45   | V     |
| Average Rectified Forward Current                                                      | $I_{F(AV)}$                     | 50% duty cycle @ $T_A = 25^\circ\text{C}$ , rectangular wave form | 20   | A     |
| Peak One Cycle Non-Repetitive Surge Current                                            | $I_{FSM}$                       | 8.3 ms, half Sine pulse                                           | 350  | A     |

### Electrical Characteristics:

| Characteristics      | Symbol           | Condition                                          | Typ. | Max. | Units              |
|----------------------|------------------|----------------------------------------------------|------|------|--------------------|
| Peak Forward Voltage | $V_{FM}$         | $I_{FM} = 20.0\text{A}$ , $T_A = 25^\circ\text{C}$ | 0.48 | 0.55 | V                  |
| Peak Reverse Current | $I_{RRM1}$       | $V_{RM} = V_{RRM}$                                 | 0.07 | 0.5  | mA                 |
|                      | $I_{RRM2}$       |                                                    | -    | 50   |                    |
| Thermal Resistance   | $R_{\theta J-C}$ | Between junction and case                          | 3.0  | -    | $^\circ\text{C/W}$ |
|                      | $R_{\theta J-L}$ | Between junction and lead                          | 2.0  | -    |                    |

### Thermal-Mechanical Specifications:

| Characteristics                                                                                        | Symbol    | Condition                                          | Specification                             | Units              |
|--------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------|-------------------------------------------|--------------------|
| Junction Temperature<br>at reduced reverse voltage<br>at reduced reverse voltage<br>in DC forward mode | $T_J$     | $V_R \leq 80\% V_{RRM}$<br>$V_R \leq 50\% V_{RRM}$ | -55 to +150<br>-55 to +180<br>-55 to +200 | $^{\circ}\text{C}$ |
| Storage Temperature                                                                                    | $T_{stg}$ | -                                                  | -55 to +150                               | $^{\circ}\text{C}$ |
| Approximate Weight                                                                                     | wt        | -                                                  | 2.24                                      | g                  |
| Case Style                                                                                             | R-6       |                                                    |                                           |                    |

### Ratings and Characteristics Curves

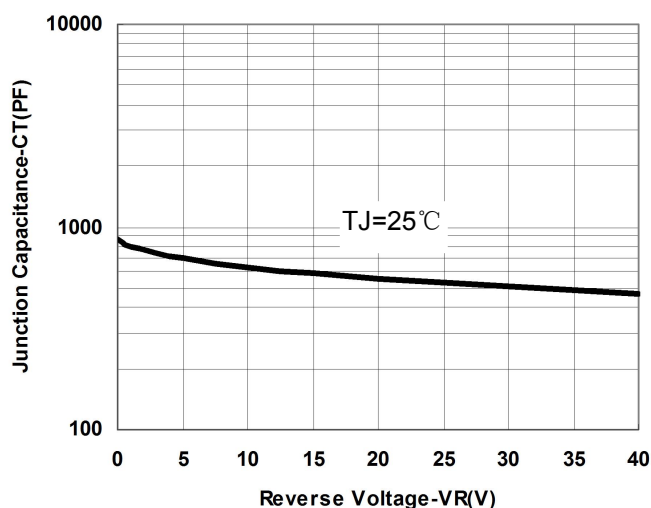


Fig.1-Typical Junction Capacitance

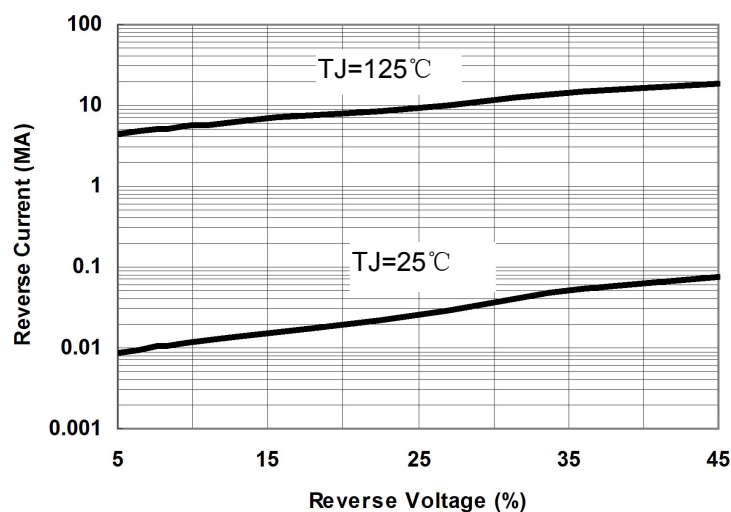


Fig.2-Typical Reverse Characteristics

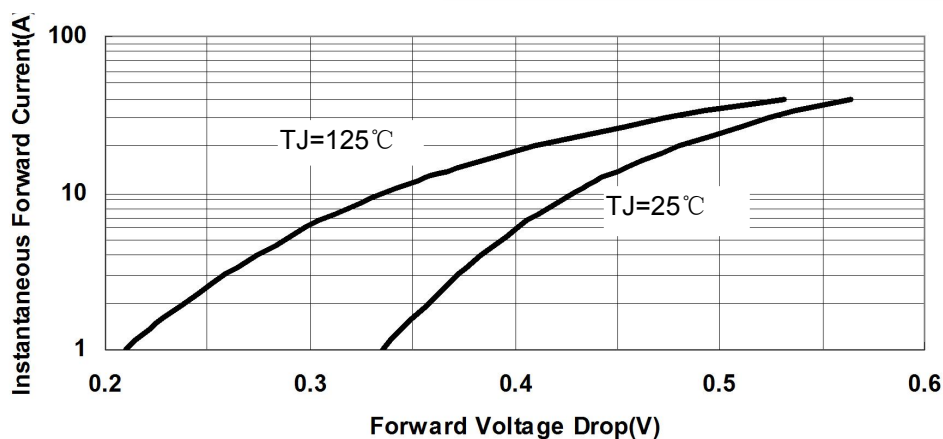
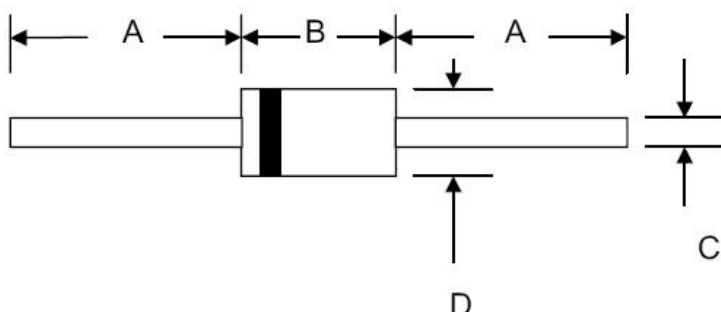


Fig.3-Typical Instantaneous Forward Voltage Characteristics

## Mechanical Dimensions R-6



| SYMBOL | Millimeters |      | Inches |       |
|--------|-------------|------|--------|-------|
|        | Min.        | Max. | Min.   | Max.  |
| A      | 25.4        | -    | 1.000  | -     |
| B      | 8.60        | 9.10 | 0.340  | 0.360 |
| C      | 1.2         | 1.3  | 0.048  | 0.052 |
| D      | 8.60        | 9.10 | 0.340  | 0.360 |

## Ordering Information

| Device  | Package      | Shipping      |
|---------|--------------|---------------|
| 20SQ045 | R-6(Pb-Free) | 500pcs / reel |

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

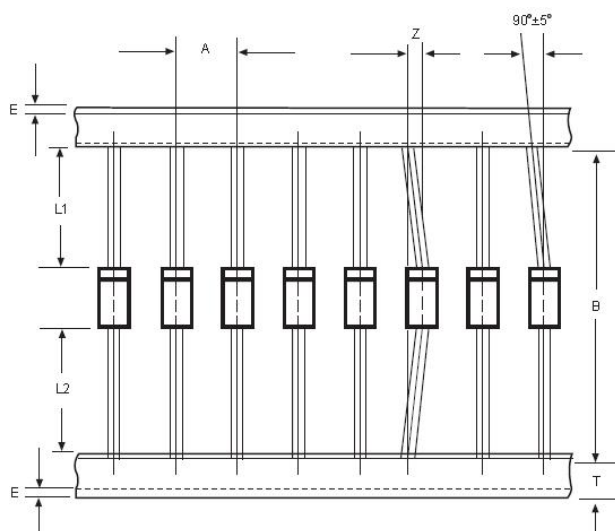
## Marking Diagram



Where XXXXX is YYWWL

20 = Forward Current (20A)  
 S = Package Type  
 Q = Device Type  
 045 = Reverse Voltage (45V)  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

## Carrier Tape Specification R-6



| SYMBOL  | Millimeters |       |
|---------|-------------|-------|
|         | Min.        | Max.  |
| A       | 9.50        | 10.50 |
| B       | 50.9        | 53.9  |
| Z       | -           | 1.20  |
| T       | 5.60        | 6.40  |
| E       | -           | 0.80  |
| IL1-L2I | -           | 1.0   |

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