

### Surface Mount Schottky Barrier Rectifier 45V Current 10A

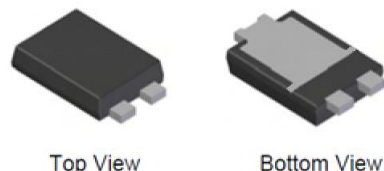
#### FEATURES AND BENEFITS

- Low power loss, high efficiency operation
- Low forward voltage drop
- Fast switching capability
- High forward surge capability
- Excellent High Temperature Stability

#### MECHANICAL DATA

- Epoxy : UL94 V-0 rated flame retardant
- Case: TO-277 Package
- Terminals: Matte Tin annealed over copper
- Weight: Approximated 0.129 grams

| Primary Characteristic                |       |
|---------------------------------------|-------|
| $I_O$                                 | 10A   |
| $V_{RRM}$                             | 45V   |
| $I_{FSM}$                             | 170A  |
| $V_F$ Typical=5A , $T_J=125^{\circ}C$ | 0.32V |
| $T_{Jmax}$                            | 150°C |



LEFT PIN    RIGHT PIN    BOTTOMSIDE HEAT SINK

| Maximum Ratings (Ta=25°C unless otherwise specified)                                               |        |          |                  |       |      |      |
|----------------------------------------------------------------------------------------------------|--------|----------|------------------|-------|------|------|
| Characteristics                                                                                    |        |          | Symbol           | Value |      | Unit |
| Peak Repetitive Reverse Voltage                                                                    |        |          | V <sub>RRM</sub> | 45    |      | V    |
| Working Peak Reverse Voltage                                                                       |        |          | V <sub>RWM</sub> | 45    |      | V    |
| DC Blocking Voltage                                                                                |        |          | V <sub>DC</sub>  | 45    |      | V    |
| RMS Reverse Voltage                                                                                |        |          | V <sub>RMS</sub> | 32    |      | V    |
| Average Forward Rectified Current (per diode)                                                      |        |          | I <sub>O</sub>   | 10    |      | Amps |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) |        |          | I <sub>FSM</sub> | 170   |      | Amps |
| Electrical Characteristics (Ta=25°C unless otherwise specified )                                   |        |          |                  |       |      |      |
| Characteristics                                                                                    |        |          | Symbol           | Typ.  | Max. | Unit |
| Forward Voltage Drop <sup>(1)</sup>                                                                | IF=5A  | Ta=25°C  | V <sub>F</sub>   | 0.43  | 0.47 | V    |
|                                                                                                    | IF=10A | Ta=25°C  | V <sub>F</sub>   | 0.47  | 0.51 | V    |
|                                                                                                    | IF=5A  | Ta=125°C | V <sub>F</sub>   | 0.32  | 0.36 | V    |
|                                                                                                    | IF=10A | Ta=125°C | V <sub>F</sub>   | 0.42  | 0.46 | V    |
| Reverse Current <sup>(2)</sup>                                                                     | VR=45V | Ta=25°C  | I <sub>R</sub>   | 40    | 120  | µA   |
|                                                                                                    | VR=45V | Ta=125°C | I <sub>R</sub>   | 15    | 45   | mA   |

Notes (1): Pulse test: 300 $\mu$ s pulse width, 1% duty cycle,

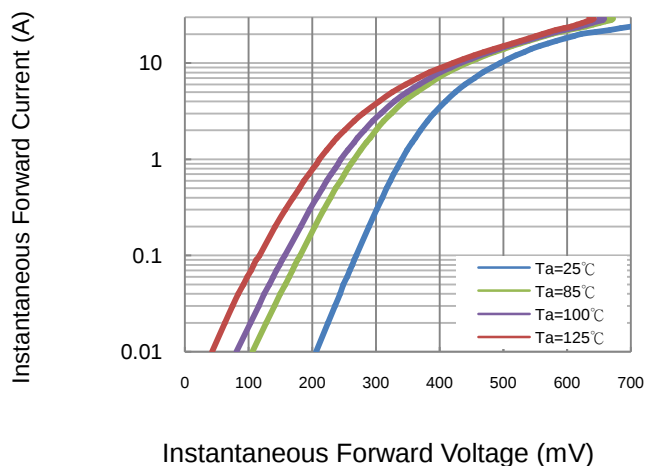
Notes (2): Pulse width  $\leq$  40ms

| THERMAL CHARACTERISTICS ( $T_A = 25^{\circ}C$ unless otherwise noted) |                 |             |               |
|-----------------------------------------------------------------------|-----------------|-------------|---------------|
| Characteristics                                                       | Symbol          | Value       | Unit          |
| Typical Thermal Resistance, junction to ambient                       | $R_{\theta JA}$ | 105         | $^{\circ}C/W$ |
| Operating Temperature Range ( in DC Mode)                             | $T_J$           | -65 to +150 | $^{\circ}C$   |
| Storage Temperature Range                                             | $T_{STG}$       | -65 to +150 | $^{\circ}C$   |

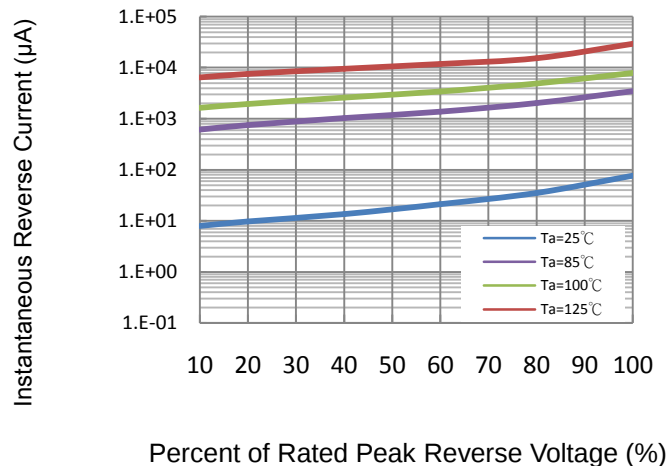
Notes (3): FR-4 PCB, 2oz copper. Minimum recommended pad layout

## RATINGS AND CHARACTERISTICS CURVES

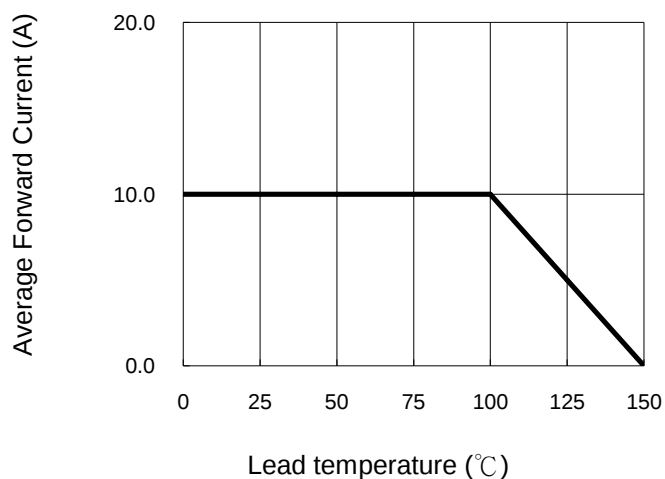
**Fig 1. Typical Forward Characteristics**



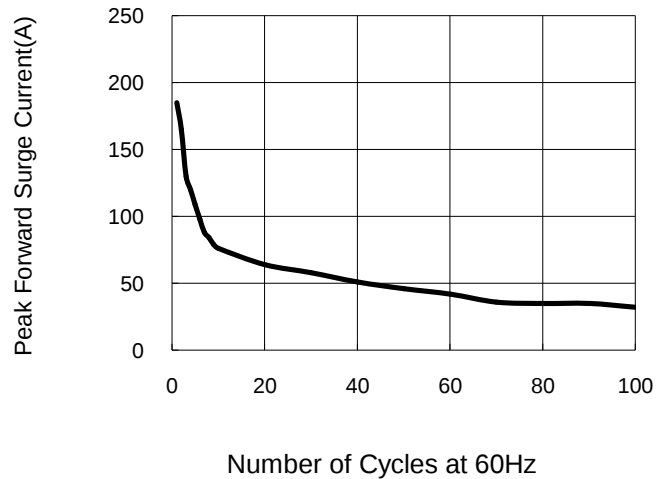
**Fig 2. Typical Reverse Characteristics**



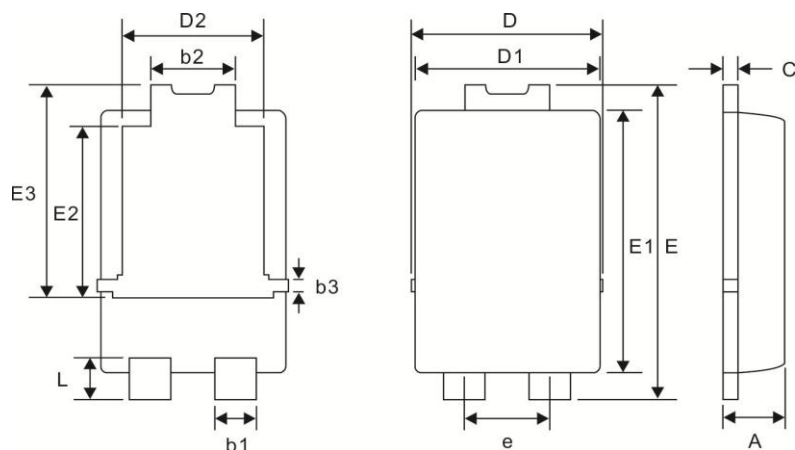
**Fig 3. Typical Forward Current Derating Curve**



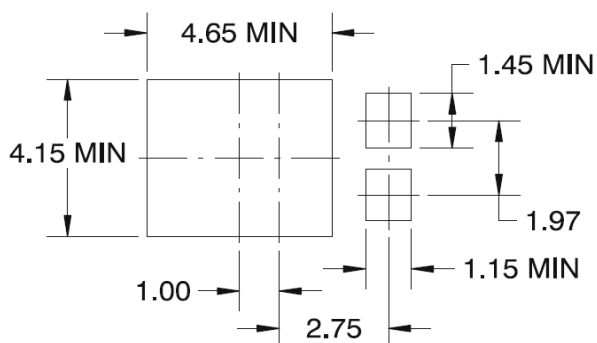
**Fig 4. Non-repetitive Forward Surge Current**



### Package Outline Dimensions (in millimeters)

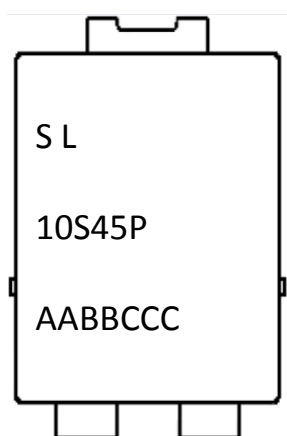


| SYMBOL | DIMENSIONS |      |      |
|--------|------------|------|------|
|        | MIN        | NOM  | MAX  |
| A      | 1.05       | 1.10 | 1.15 |
| b1     | 0.80       | 0.90 | 0.99 |
| b2     | 1.70       | 1.79 | 1.88 |
| b3     | 0.15       | 0.25 | 0.35 |
| C      | 0.20       | 0.25 | 0.33 |
| D      | 4.00       | 4.20 | 4.30 |
| D1     | 3.90       | 3.98 | 4.05 |
| D2     | 2.95       | 3.05 | 3.15 |
| E      | 6.40       | 6.50 | 6.60 |
| E1     | 5.30       | 5.40 | 5.45 |
| E2     | 3.45       | 3.55 | 3.65 |
| E3     | 4.20       | 4.40 | 4.60 |
| e      | 1.84 Typ   |      |      |
| L      | 0.75       | 0.85 | 0.95 |



LAND PATTERN RECOMMENDATION

### Marking Information



|          |                            |
|----------|----------------------------|
| SL       | =Product Type Marking Code |
| 10S45P   | =Part Number Marking Code  |
| AABBBCCC | =Product Tracking Code     |