

### Single Ultra Low VF Schottky Rectifier

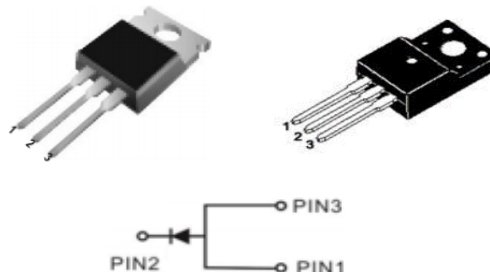
#### FEATURES AND BENEFITS

- 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-220-3L / ITO-220AB Package
- Terminals: Matte Tin annealed over copper
- Weight: Approximated 2.03 grams

| Primary Characteristic                    |       |
|-------------------------------------------|-------|
| $I_O$                                     | 60A   |
| $V_{RRM}$                                 | 30V   |
| $I_{FSM}$                                 | 880A  |
| $V_F$ Typical=5A, $T_J=125^\circ\text{C}$ | 0.23V |
| $T_{Jmax}$                                | 150°C |



| Maximum Ratings (Ta=25°C unless otherwise specified)                                               |        |           |                  |             |      |      |
|----------------------------------------------------------------------------------------------------|--------|-----------|------------------|-------------|------|------|
| Characteristics                                                                                    |        |           | Symbol           | Value       |      | Unit |
|                                                                                                    |        |           |                  | Min.        | Typ. |      |
| Peak Repetitive Reverse Voltage                                                                    |        |           | V <sub>RRM</sub> | 30          | 33   | V    |
| Working Peak Reverse Voltage                                                                       |        |           | V <sub>RWM</sub> | 30          | 33   | V    |
| DC Blocking Voltage                                                                                |        |           | V <sub>DC</sub>  | 30          | 33   | V    |
| RMS Reverse Voltage                                                                                |        |           | V <sub>RMS</sub> | 23          |      | V    |
| Average Forward Rectified Current (per diode)                                                      |        |           | I <sub>O</sub>   | 60          |      | Amps |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) |        |           | I <sub>FSM</sub> | 880         |      | 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>   | 0.35        | 0.39 | V    |
|                                                                                                    | IF=60A | Ta=25°C   | V <sub>F</sub>   | 0.55        | 0.59 | V    |
|                                                                                                    | IF=5A  | Ta=125°C  | V <sub>F</sub>   | 0.23        | 0.27 | V    |
|                                                                                                    | IF=60A | Ta=125°C  | V <sub>F</sub>   | 0.51        | 0.55 | V    |
| Reverse Current <sup>2)</sup>                                                                      | VR=30V | Ta=25°C   | I <sub>R</sub>   | 300         | 900  | µA   |
|                                                                                                    | VR=30V | Ta=125°C  | I <sub>R</sub>   | 200         | 600  | mA   |
| THERMAL CHARACTERISTICS (TA = 25 °C unless otherwise noted)                                        |        |           |                  |             |      |      |
| Characteristics                                                                                    |        |           | Symbol           | Value       |      | Unit |
| Typical Thermal Resistance, junction to case                                                       |        | TO-220AB  | R <sub>θJC</sub> | 2.8         |      | °C/W |
| Typical Thermal Resistance, junction to case                                                       |        | ITO-220AB | R <sub>θJC</sub> | 4.0         |      | °C/W |
| Operating Temperature Range ( in DC Mode)                                                          |        |           | T <sub>J</sub>   | -65 to +150 |      | °C   |
| Storage Temperature Range                                                                          |        |           | T <sub>STG</sub> | -65 to +150 |      | °C   |

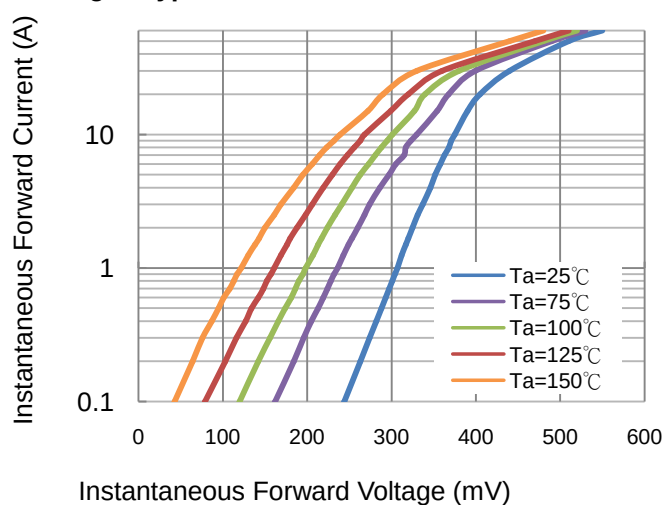
Notes (1): Pulse test: 300μs pulse width, 1% duty cycle.

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

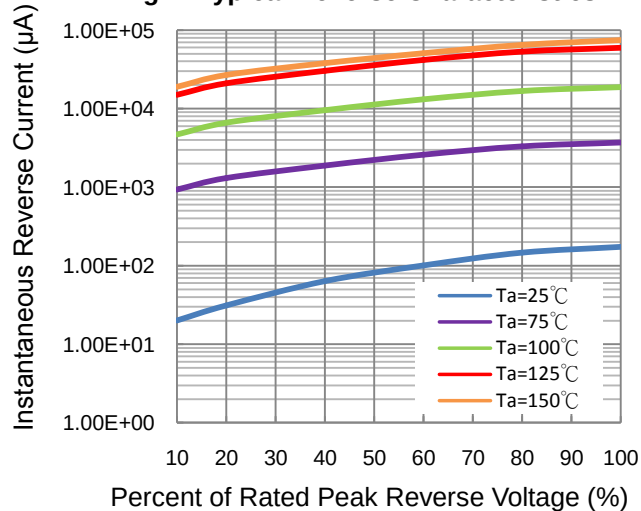
Notes (3): FR-4 PCB, 2oz copper. Minimum recommended pad layout

### RATINGS AND CHARACTERISTICS CURVES

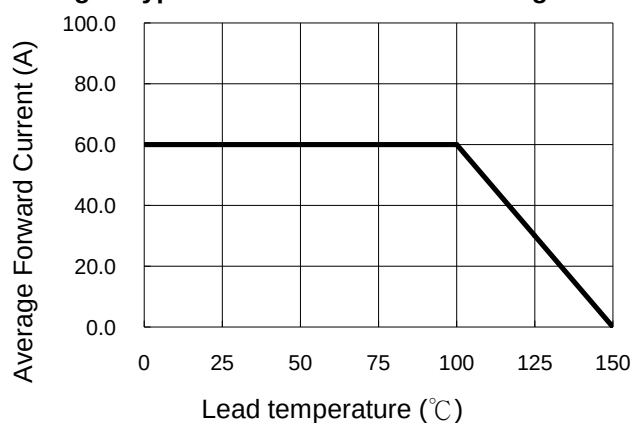
**Fig 1. Typical Forward Characteristics**



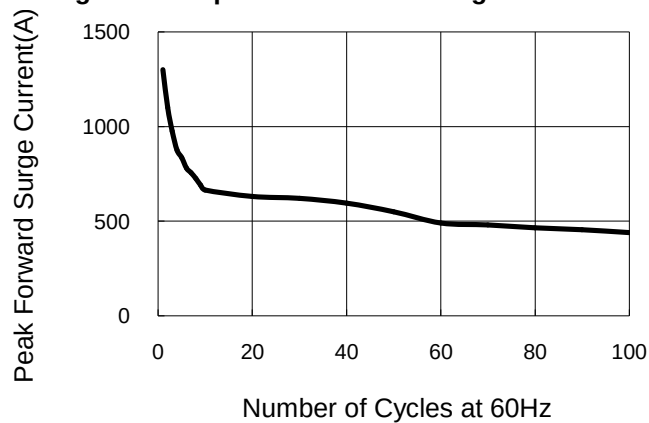
**Fig 2. Typical Reverse Characteristics**



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



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



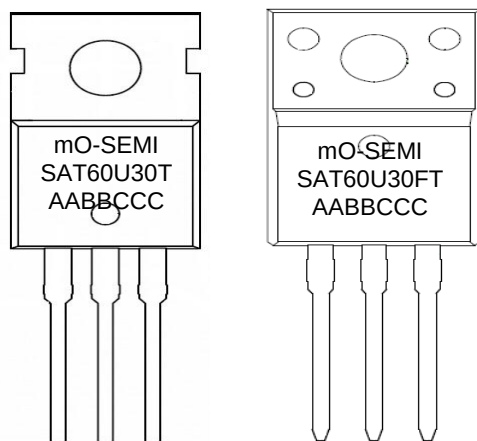
### Package Outline Dimensions (in millimeters)

| ITO-220 |             |       |        |      |
|---------|-------------|-------|--------|------|
| SYMBOL  | Dimensions  |       |        |      |
|         | Millimeters |       | Inches |      |
|         | Min         | Max   | Min    | Max  |
| A       | 4.60        | 4.80  | 0.18   | 0.19 |
| b       | 0.70        | 0.91  | 0.03   | 0.04 |
| b1      | 1.20        | 1.47  | 0.05   | 0.06 |
| b2      | 1.10        | 1.30  | 0.04   | 0.05 |
| C       | 0.45        | 0.63  | 0.02   | 0.02 |
| D       | 15.80       | 15.97 | 0.62   | 0.63 |
| e       | 2.54        |       |        |      |
| E       | 10.00       | 10.10 | 0.39   | 0.40 |
| F       | 2.44        | 2.54  | 0.10   | 0.10 |
| G       | 6.50        | 6.70  | 0.26   | 0.26 |
| L       | 12.90       | 13.10 | 0.51   | 0.52 |
| L1      | 3.13        | 3.23  | 0.12   | 0.13 |
| Q       | 2.65        | 2.75  | 0.10   | 0.11 |
| Q1      | 3.20        | 3.30  | 0.13   | 0.13 |
| ψ       | 3.08        | 3.18  | 0.12   | 0.13 |

| TO-220 |             |       |         |      |
|--------|-------------|-------|---------|------|
| SYMBOL | Dimensions  |       |         |      |
|        | Millimeters |       | Inches  |      |
|        | Min         | Max   | Min     | Max  |
| A      | 3.65        | 4.82  | 0.14    | 0.19 |
| A1     | 0.51        | 1.39  | 0.02    | 0.05 |
| A2     | 2.04        | 2.92  | 0.08    | 0.11 |
| b      | 0.39        | 1.01  | 0.02    | 0.04 |
| b1     | 1.15        | 1.82  | 0.05    | 0.07 |
| b2     | 1.15        | 1.77  | 0.05    | 0.07 |
| c      | 0.36        | 0.50  | 0.01    | 0.02 |
| D      | 14.22       | 16.51 | 0.56    | 0.65 |
| D1     | 8.39        | 9.01  | 0.33    | 0.35 |
| D2     | 11.45       | 12.87 | 0.45    | 0.51 |
| E      | 9.66        | 10.66 | 0.38    | 0.42 |
| E1     | 6.86        | 8.89  | 0.27    | 0.35 |
| e      | 2.54BSC     |       | 2.54BSC |      |
| e1     | 5.08BSC     |       | 5.08BSC |      |
| H1     | 5.85        | 6.85  | 0.23    | 0.27 |
| L      | 12.70       | 14.73 | 0.50    | 0.58 |
| L1     | -           | 6.35  | -       | 0.25 |
| L2     | 15.80       | 16.20 | 0.62    | 0.64 |
| ψP     | 3.54        | 4.08  | 0.14    | 0.16 |
| Q      | 2.54        | 3.42  | 0.10    | 0.13 |

### Marking Information



mO-SEMI  
SAT60U30  
AABBCCC  
\*FT=ITO-220  
\*T=TO-220

=Series Name  
=Part Number Marking Code  
=Product Tracking Code  
=Single ITO-220  
=Single TO-220