

## DATASHEET

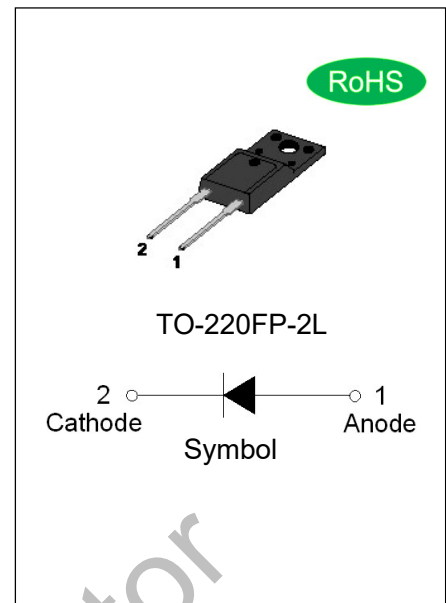
## EPI SUPERFAST SOFT RECOVERY RECTIFIER

## DESCRIPTION

- ✧ Plastic package has underwriters laboratory flammability classification 94V-0
- ✧ Lead free in comply with EU RoHS 2011/65/EU directives
- ✧ Low reverse leakage current
- ✧ Superfast recovery time and soft recovery characteristics
- ✧ Low recovery loss
- ✧ For use in low voltage, high frequency inverter, free wheeling, and polarity protection application

## MECHANICAL DATA

- ✧ Case: TO-220FP-2L molded plastic over passivated junction
- ✧ Terminals: Solder plated
- ✧ Weight: 2gram



## ABSOLUTE MAXIMUM RATING (Rating at 25°C ambient temperature unless otherwise specified.)

| Parameter                                                                          | Symbol         | MURF1560    | Unit             |
|------------------------------------------------------------------------------------|----------------|-------------|------------------|
| Maximum repetitive peak reverse voltage                                            | $V_{RRM}$      | 600         | V                |
| Maximum RMS voltage                                                                | $V_{RMS}$      | 420         | V                |
| Maximum DC blocking voltage                                                        | $V_{DC}$       | 600         | V                |
| Average forward current at $T_C=100^\circ\text{C}$                                 | $I_{F(AV)}$    | 15          | A                |
| Peak forward surge current: 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 200         | A                |
| Junction temperature and storage temperature range                                 | $T_J, T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

## ISOLATION CHARACTERISTICS

| Symbol          | Parameter             | Conditions                                                                                                           | Min. | Typ. | Max. | Unit |
|-----------------|-----------------------|----------------------------------------------------------------------------------------------------------------------|------|------|------|------|
| $V_{isol(RMS)}$ | RMS isolation voltage | 50Hz $\leq f \leq$ 60Hz, RH $\leq$ 65%, from all pins to external heatsink, sinusoidal waveform, clean and dust free | -    | -    | 2500 | V    |
| $C_{isol}$      | Isolation capacitance | From cathode to external heatsink                                                                                    | -    | 10   | -    | pF   |

## DATASHEET

### EPI SUPERFAST SOFT RECOVERY RECTIFIER

#### ELECTRICAL CHARACTERISTICS (Rating at 25°C ambient temperature unless otherwise specified.)

| Parameter                                          |                                       | Symbol   | Min. | Typ. | Max. | Unit    |
|----------------------------------------------------|---------------------------------------|----------|------|------|------|---------|
| Forward voltage                                    | $I_F=15A, T_J=25^{\circ}C$            | $V_F$    | -    | -    | 1.7  | V       |
| DC reverse current<br>at rated DC blocking voltage | $T_J=25^{\circ}C$                     | $I_R$    | -    | -    | 5    | $\mu A$ |
|                                                    | $T_J=150^{\circ}C$                    |          | -    | -    | 300  |         |
| Reverse recovery time                              | $I_F=0.5A, I_R=1A,$<br>$I_{rr}=0.25A$ | $t_{rr}$ | -    | -    | 35   | ns      |

#### THERMAL RESISTANCES

| Symbol        | Parameter                                | Min. | Typ. | Max. | Unit          |
|---------------|------------------------------------------|------|------|------|---------------|
| $R_{th(j-c)}$ | Thermal resistance from junction to case | -    | 4    | -    | $^{\circ}C/W$ |

#### CHARACTERISTICS CURVE

FIG.1: Typical forward characteristics

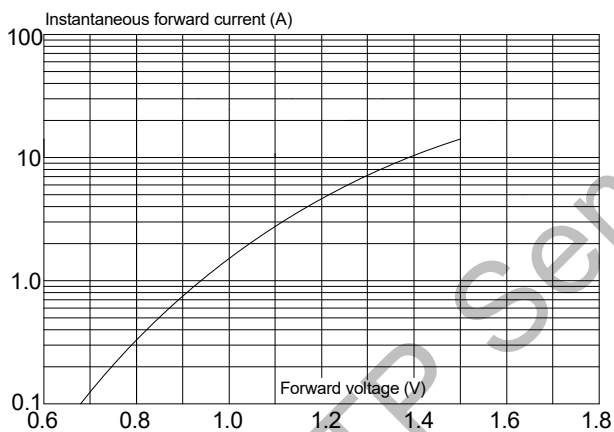


FIG.2: Typical reverse characteristics

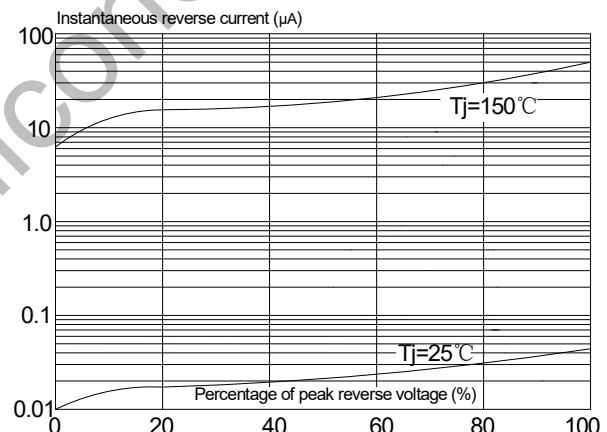


FIG.3: Maximum non-repetitive peak forward surge current

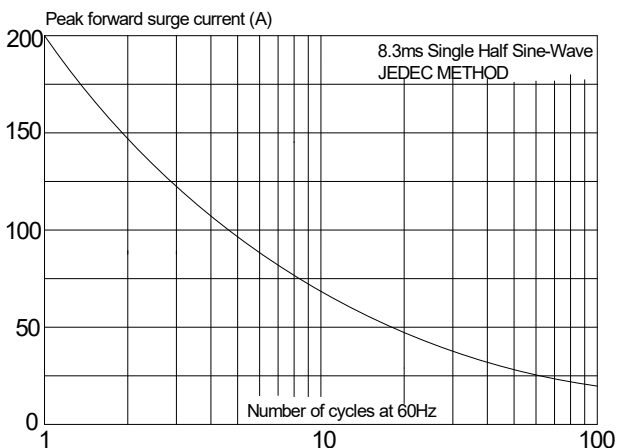
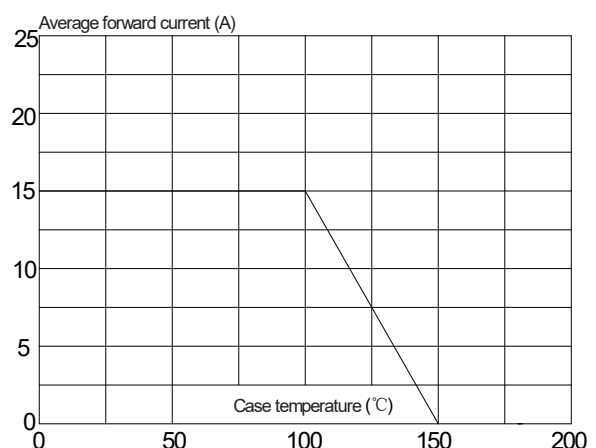


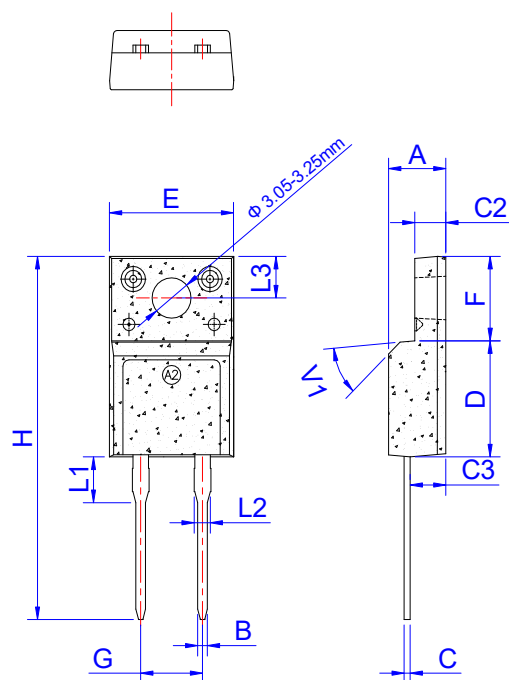
FIG.4: Forward current derating curve



## DATASHEET

## EPI SUPERFAST SOFT RECOVERY RECTIFIER

## PACKAGE MECHANICAL DATA



| Ref. | Dimensions  |      |      |        |       |       |
|------|-------------|------|------|--------|-------|-------|
|      | Millimeters |      |      | Inches |       |       |
|      | Min.        | Typ. | Max. | Min.   | Typ.  | Max.  |
| A    | 4.50        |      | 4.90 | 0.177  |       | 0.193 |
| B    | 0.74        | 0.80 | 0.83 | 0.029  | 0.031 | 0.033 |
| C    | 0.47        |      | 0.65 | 0.019  |       | 0.026 |
| C2   | 2.45        |      | 2.75 | 0.096  |       | 0.108 |
| C3   | 2.60        |      | 3.00 | 0.102  |       | 0.118 |
| D    | 8.80        |      | 9.30 | 0.346  |       | 0.366 |
| E    | 9.80        |      | 10.4 | 0.386  |       | 0.410 |
| F    | 6.40        |      | 6.80 | 0.252  |       | 0.268 |
| G    |             | 5.08 |      |        | 0.200 |       |
| H    | 28.0        |      | 29.8 | 1.102  |       | 1.173 |
| L1   |             | 3.63 |      |        | 0.143 |       |
| L2   | 1.14        |      | 1.70 | 0.045  |       | 0.067 |
| L3   |             | 3.30 |      |        | 0.130 |       |
| V1   |             | 45°  |      |        | 45°   |       |

## PACKAGE INFORMATION-TO-220FP-2L

| OUTLINE | UNIT WEIGHT<br>(g/PCS) TYP | TUBE<br>(PCS) | PER CARTON<br>(PCS) |
|---------|----------------------------|---------------|---------------------|
| TUBE    | 2                          | 50            | 5,000               |