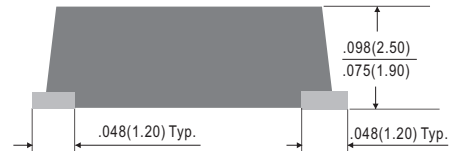
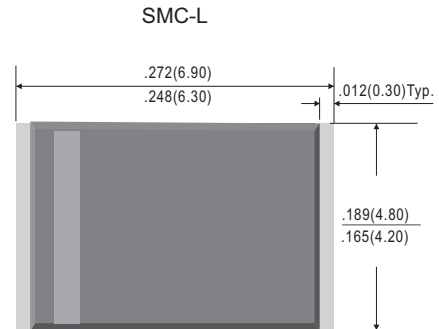


## Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low profile surface mounted application in order to optimize board space.
- $t_{rr}$  less than 25ns for high efficiency
- High current & surge capability.
- Low forward dropdown voltage
- Glass passivated chip junction.
- **Moisture Sensitivity Level 1**

## Package outline



Dimensions in inches and (millimeters)

## Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, SMC-L
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.19 gram

## Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER                  | CONDITIONS  | Symbol    | MIN. | TYP. | MAX. | UNIT             |
|----------------------------|---|-----------|------|------|------|------------------|
| Forward rectified current  | See Fig.2   | $I_o$     |      |      | 3.0  | A                |
| Forward surge current      | 8.3ms single half sine-wave superimposed on rate load (JEDEC methode) | $I_{FSM}$ |      |      | 100  | A                |
| Reverse current            | $V_R = V_{RRM}$ $T_J = 25^\circ\text{C}$                              | $I_R$     |      |      | 5.0  | $\mu\text{A}$    |
|                            | $V_R = V_{RRM}$ $T_J = 125^\circ\text{C}$                             |           |      |      | 100  |                  |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse voltage                              | $C_j$     |      | 50   |      | pF               |
| Storage temperature        |   | $T_{STG}$ | -55  |      | +150 | $^\circ\text{C}$ |

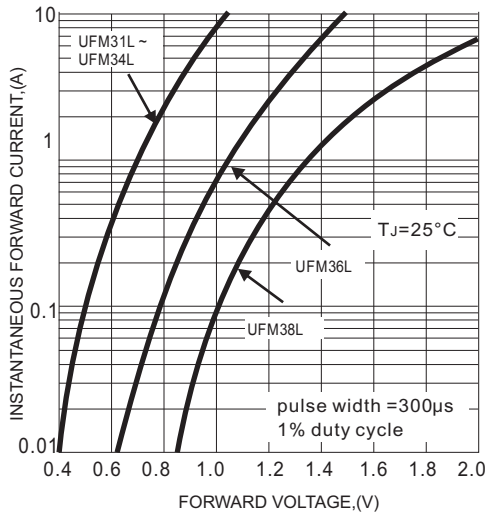
| SYMBOLS | $V_{RRM}^{*1}$<br>(V) | $V_{RMS}^{*2}$<br>(V) | $V_R^{*3}$<br>(V) | $V_F^{*4}$<br>(V) | $t_{rr}^{*5}$<br>(ns) | Operating temperature<br>$T_J$ , ( $^\circ\text{C}$ ) |
|---------|-----------------------|-----------------------|-------------------|-------------------|-----------------------|---|
| WFM31Š  | 50                    | 35                    | 50                | 0.875             | 25                    | -55 to +150   |
| WFM32Š  | 100                   | 70                    | 100               |                   |                       |   |
| WFMH Š  | 200                   | 140                   | 200               |                   |                       |   |
| WFM36L  | 400                   | 280                   | 400               | 1.25              |                       |   |
| UFM38L  | 600                   | 420                   | 600               | 1.75              |                       |   |

Note 1. Reverse recovery time test condition,  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

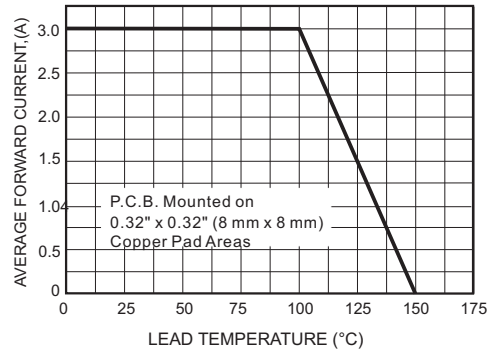
- \*1 Repetitive peak reverse voltage
- \*2 RMS voltage
- \*3 Continuous reverse voltage
- \*4 Maximum forward voltage@ $I_F=3.0\text{A}$
- \*5 Maximum Reverse recovery time, note 1

**Rating and characteristic curves**

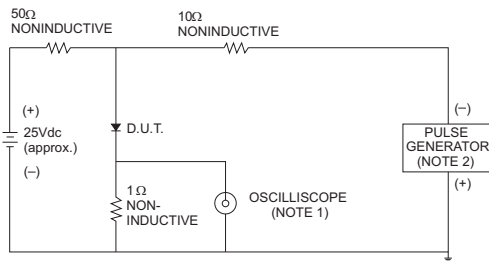
**FIG.1-TYPICAL FORWARD CHARACTERISTICS**



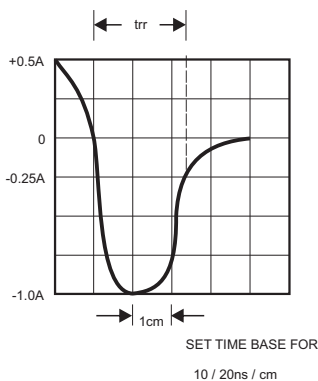
**FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE**



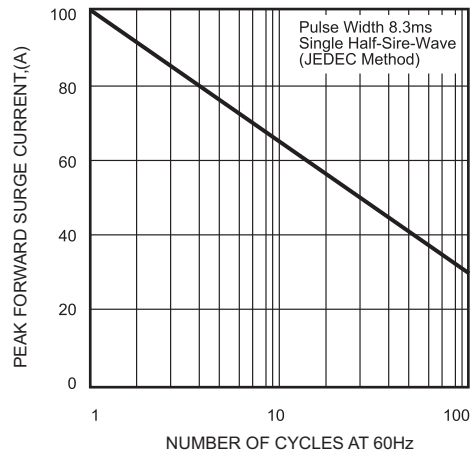
**FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS**



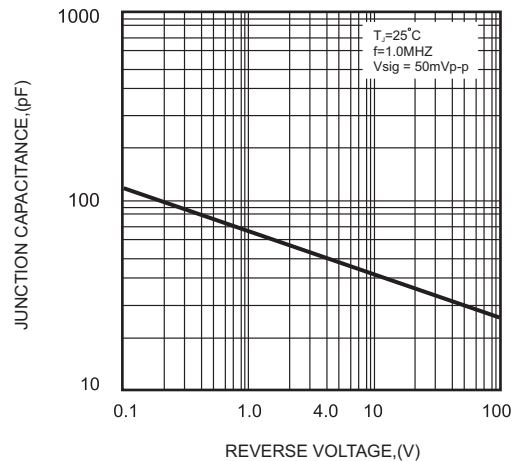
NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.  
2. Rise Time= 10ns max., Source Impedance= 50 ohms.





**FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG.5-TYPICAL JUNCTION CAPACITANCE**



**Pinning information**

| Pin                        | Simplified outline  | Symbol  |
|----------------------------|---|---|
| Pin1 cathode<br>Pin2 anode |  |  |

**Reel packing**

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---------|-----------|------------|-------------------------|-----------|-----------------|-----------------|-------------------|--------------|---------------------------|
| SMC-L   | 13"       | 3,000      | 8.0                     | 6,000     | 337*337*37      | 330             | 350*330*360       | 48,000       | 17.2                      |

**Marking**

| Type number | Marking code |
|-------------|--------------|
| UFM31L-TH   | E31          |
| UFM32L-TH   | E32          |
| UFM34L-TH   | E33          |
| UFM36L-TH   | E34          |
| UFM38L-TH   | E35          |

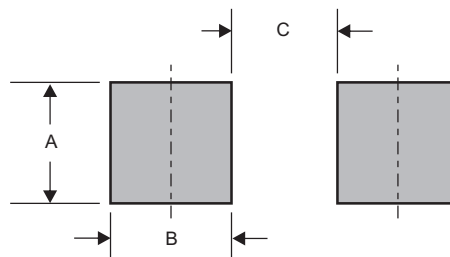
Note: L: Package code, SMC-L

-T: Taping Reel

**Pb-Free package is available**

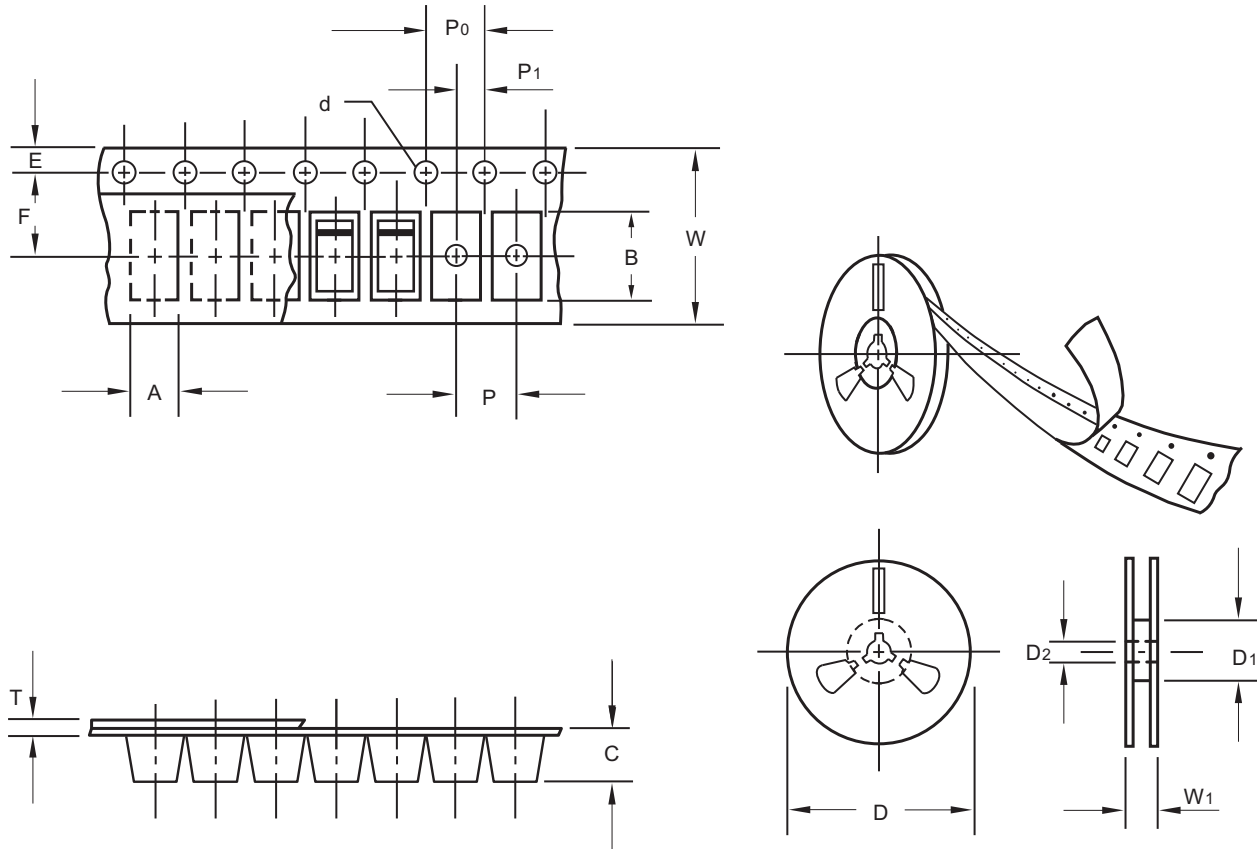
RoHS product for packing code suffix "G"

Halogen free product for packing code suffix "H"

**Suggested solder pad layout**


Dimensions in inches and (millimeters)

| PACKAGE | A            | B            | C            |
|---------|--------------|--------------|--------------|
| SMC-L   | 0.189 (4.80) | 0.063 (1.60) | 0.158 (4.00) |

**Packing information**


unit:mm

| Item                      | Symbol | Tolerance | SMC-L  |
|---------------------------|--------|-----------|--------|
| Carrier width             | A      | 0.1       | 5.10   |
| Carrier length            | B      | 0.1       | 7.20   |
| Carrier depth             | C      | 0.1       | 2.50   |
| Sprocket hole             | d      | 0.1       | 1.50   |
| 13" Reel outside diameter | D      | 2.0       | 330.00 |
| 13" Reel inner diameter   | D1     | min       | 50.00  |
| 7" Reel outside diameter  | D      | 2.0       | 178.00 |
| 7" Reel inner diameter    | D1     | min       | 62.00  |
| Feed hole diameter        | D2     | 0.5       | 13.00  |
| Sprocket hole position    | E      | 0.1       | 1.75   |
| Punch hole position       | F      | 0.1       | 5.50   |
| Punch hole pitch          | P      | 0.1       | 8.00   |
| Sprocket hole pitch       | P0     | 0.1       | 4.00   |
| Embossment center         | P1     | 0.1       | 2.00   |
| Overall tape thickness    | T      | 0.1       | 0.23   |
| Tape width                | W      | 0.3       | 12.00  |
| Reel width                | W1     | 1.0       | 18.00  |

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.