

## TO-252-2L Plastic-Encapsulate Diodes

SUPER FAST RECOVER RECTIFIER

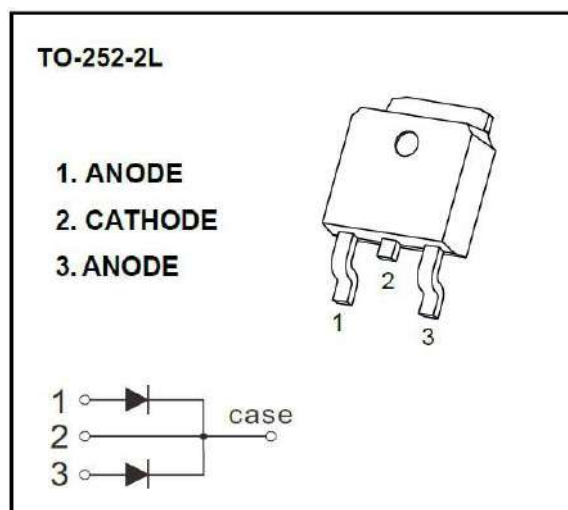
### Features:

- Ultrafast 35ns Recovery Times
- High Voltage Capability to 600V
- Low Reverse Leakage Current

### MAIN CHARACTERISTICS

|              |  |
|--------------|--|
| $I_o$        | <b>15A</b>                                     |
| $V_{RRM}$    | <b>600 V</b>                                   |
| $T_j$        | <b>150 °C</b>                                  |
| $V_{F(typ)}$ | <b>1.3V ( @<math>T_j=125^{\circ}C</math> )</b> |

### MARKING



### MAXIMUM RATINGS ( $T_a=25^{\circ}C$ unless otherwise noted )

| Symbol          | Parameter   | KMURD1560CT | Unit |
|-----------------|---|-------------|------|
| $V_{RRM}$       | Peak repetitive reverse voltage                                   | 600         | V    |
| $V_{RWM}$       | Working peak reverse voltage                                      |             |      |
| $V_R$           | DC blocking voltage   |             |      |
| $V_{R(RMS)}$    | RMS reverse voltage   | 420         | V    |
| $I_o$           | Average rectified output current@ Per leg                         | 7.5         | A    |
|                 | Average rectified output current@ Total device                    | 15          | A    |
| $I_{FSM}$       | Non-Repetitive peak forward surge current<br>8.3ms half sine wave | 175         | A    |
| $R_{\theta JC}$ | Typical thermal resistance  | 4.5         | °C/W |
| $R_{\theta JA}$ | Thermal resistance from junction to ambient                       | 62.5        |      |
| $T_j$           | Operating Junction Temperature Range                              | -55 ~ +150  | °C   |
| $T_{stg}$       | Storage Temperature Range   | -55 ~ +150  | °C   |

### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}C$ unless otherwise specified )

| Parameter                 | Symbol     | Test conditions                  | Min                | Typ | Max | Unit    |
|---------------------------|------------|----------------------------------|--------------------|-----|-----|---------|
| Reverse voltage           | $V_{(BR)}$ | $I_R=100\mu A$                   | 600                |     |     | V       |
| Reverse current           | $I_R$      | $V_R=600V$                       | $T_j=25^{\circ}C$  | 0.5 | 2   | $\mu A$ |
|                           |            |                                  | $T_j=125^{\circ}C$ | 20  | 200 | $\mu A$ |
| Forward voltage           | $V_F$      | $I_F=7.5A$                       | $T_j=25^{\circ}C$  | 1.3 | 1.7 | V       |
|                           |            |                                  | $T_j=125^{\circ}C$ | 1.3 |     | V       |
| Typical total capacitance | $C_{tot}$  | $V_R=4.0V, f=1MHz$               |                    | 14  |     | pF      |
| Reverse recovery time     | $t_{rr}$   | $I_F=0.5A, I_R=1A, I_{tr}=0.25A$ |                    |     | 35  | ns      |

**Typical Characteristics**

FIG.1: FORWARD CURRENT DERATING CURVE

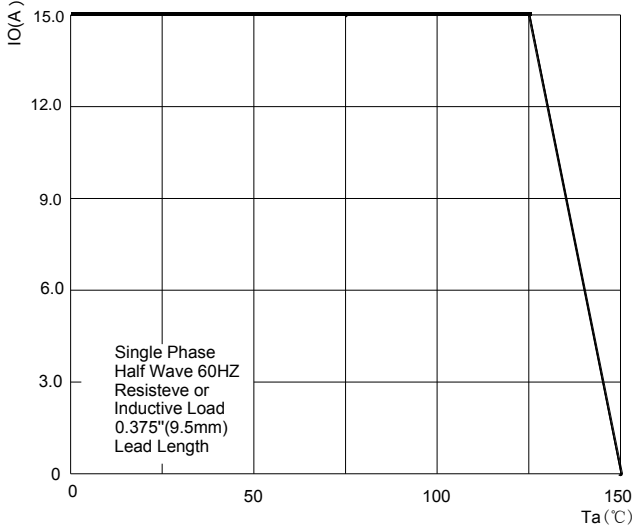
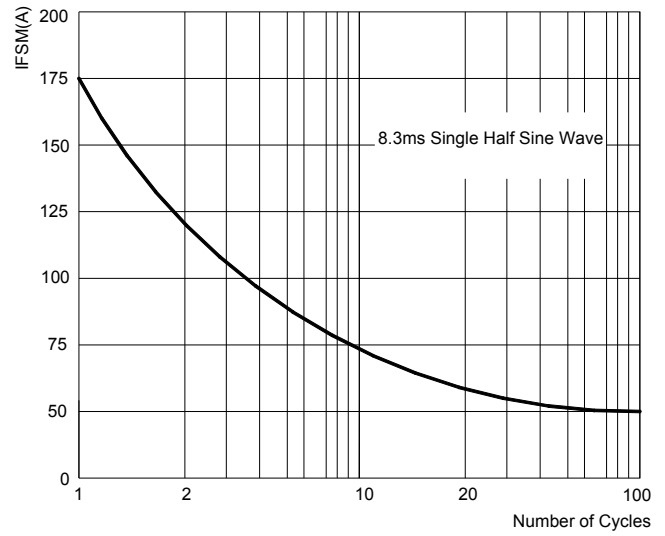


FIG.2: MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



TYPICAL FORWARD CHARACTERISTICS

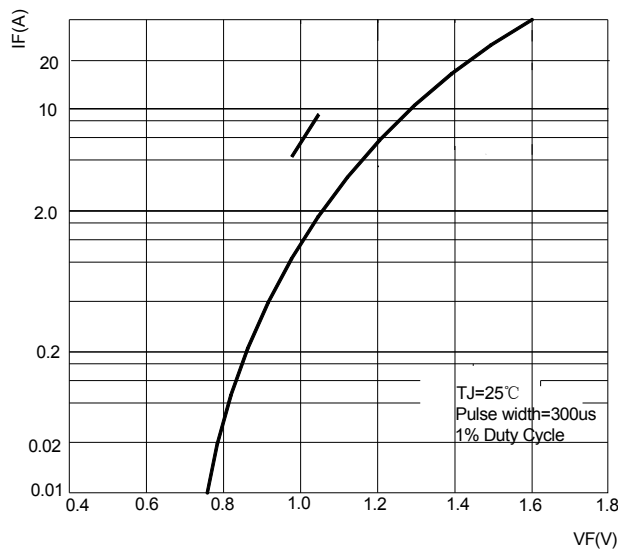


FIG.4: TYPICAL REVERSE CHARACTERISTICS

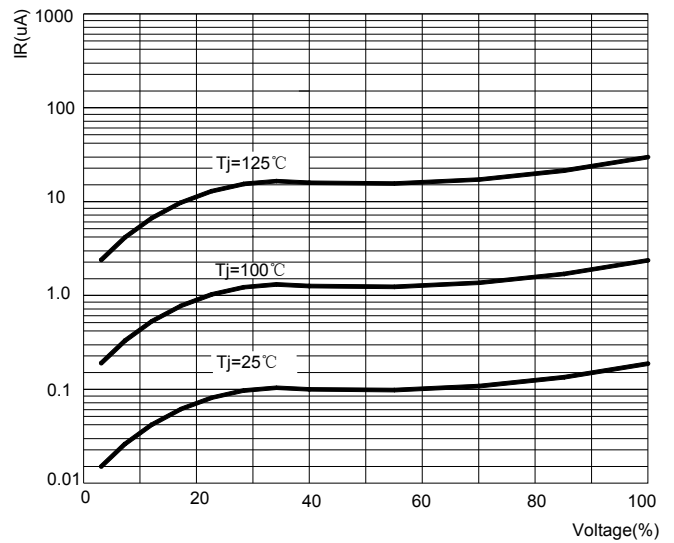
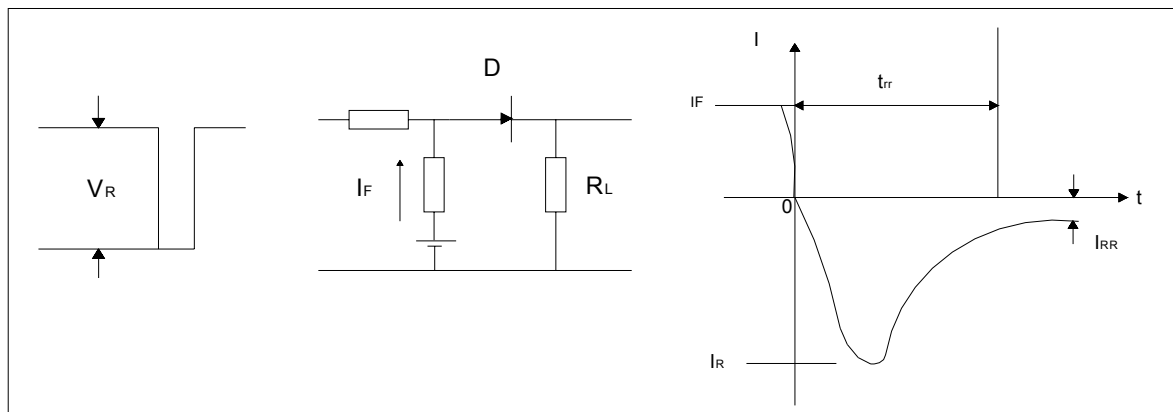
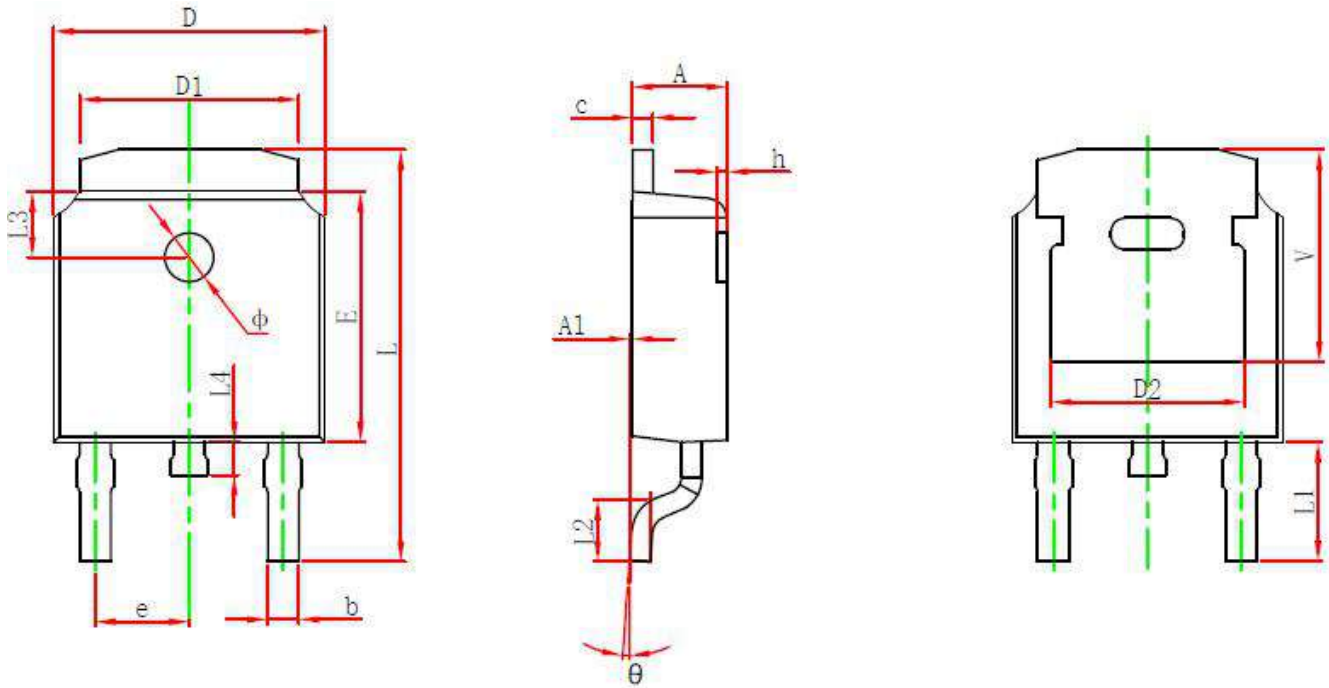


FIG.7: Diagram of circuit and Testing wave form of reverse recovery time

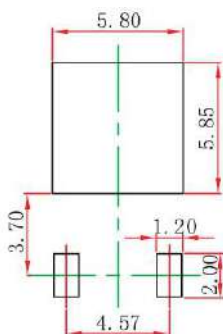


**TO-252-2L PACKAGE OUTLINE DIMENSIONS**



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max.   | Min.                 | Max.  |
| A      | 2.200                     | 2.400  | 0.087                | 0.094 |
| A1     | 0.000                     | 0.127  | 0.000                | 0.005 |
| b      | 0.635                     | 0.770  | 0.025                | 0.030 |
| c      | 0.460                     | 0.580  | 0.018                | 0.023 |
| D      | 6.500                     | 6.700  | 0.256                | 0.264 |
| D1     | 5.100                     | 5.460  | 0.201                | 0.215 |
| D2     | 4.830 REF.                |        | 0.190 REF.           |       |
| E      | 6.000                     | 6.200  | 0.236                | 0.244 |
| e      | 2.186                     | 2.386  | 0.086                | 0.094 |
| L      | 9.712                     | 10.312 | 0.382                | 0.406 |
| L1     | 2.900 REF.                |        | 0.114 REF.           |       |
| L2     | 1.400                     | 1.700  | 0.055                | 0.067 |
| L3     | 1.600 REF.                |        | 0.063 REF.           |       |
| L4     | 0.600                     | 1.000  | 0.024                | 0.039 |
| Φ      | 1.100                     | 1.300  | 0.043                | 0.051 |
| θ      | 0°                        | 8°     | 0°                   | 8°    |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| V      | 5.250 REF.                |        | 0.207 REF.           |       |

**TO-252-2L SUGGESTED PAD LAYOUT**

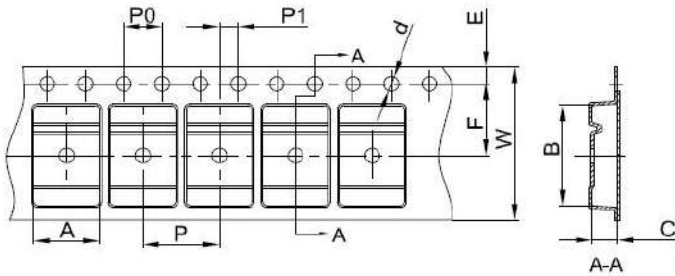


Note:

1. Controlling dimension in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purpose only.

**TO-252-2L TAPE AND REEL**

**TO-252 Embossed Carrier Tape**

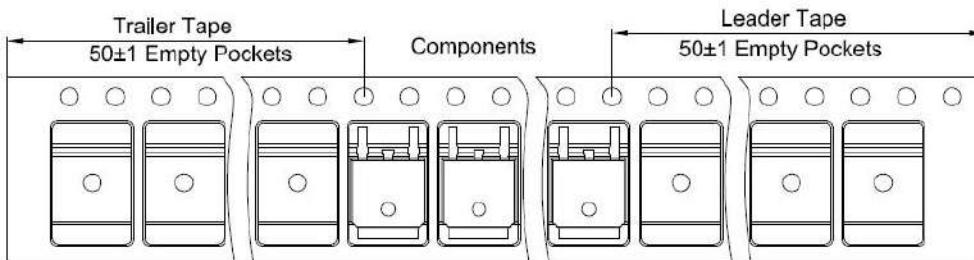


**Packaging Description:**

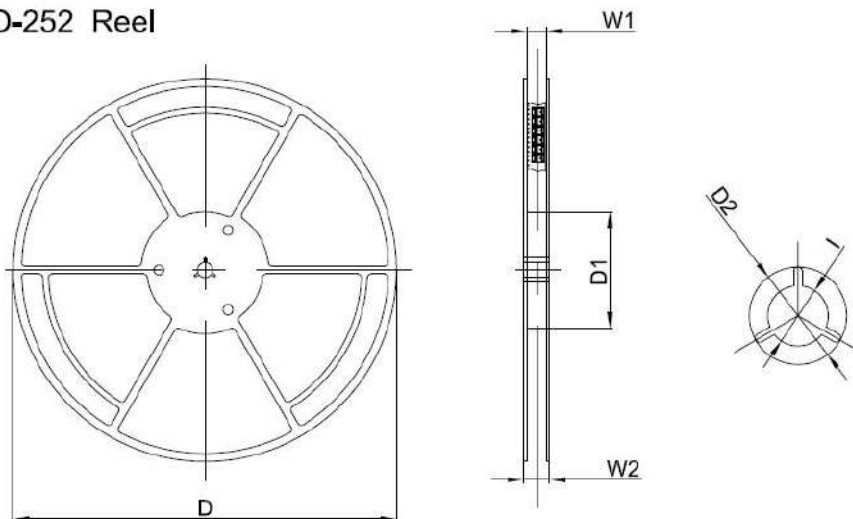
TO-252 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive In nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 25,00 units per 13" or 33.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter |      |       |      |       |      |      |      |      |      |       |
|------------------------------|------|-------|------|-------|------|------|------|------|------|-------|
| Pkg type                     | A    | B     | C    | d     | E    | F    | P0   | P    | P1   | W     |
| TO-252                       | 6.90 | 10.50 | 2.70 | Ø1.55 | 1.75 | 7.50 | 4.00 | 8.00 | 2.00 | 16.00 |

**TO-252 Tape Leader and Trailer**



**TO-252 Reel**



| Dimensions are in millimeter |        |        |        |       |       |        |
|------------------------------|--------|--------|--------|-------|-------|--------|
| Reel Option                  | D      | D1     | D2     | W1    | W2    | I      |
| 13" Dia                      | 330.00 | 100.00 | Ø21.00 | 16.40 | 21.00 | Ø13.00 |

| REEL      | Reel Size | Box       | Box Size(mm) | Carton     | Carton Size(mm) | G.W.(kg) |
|-----------|-----------|-----------|--------------|------------|-----------------|----------|
| 2,500 pcs | 13Inch    | 2,500 pcs | 340×336×29   | 25,000 pcs | 353×346×365     |          |