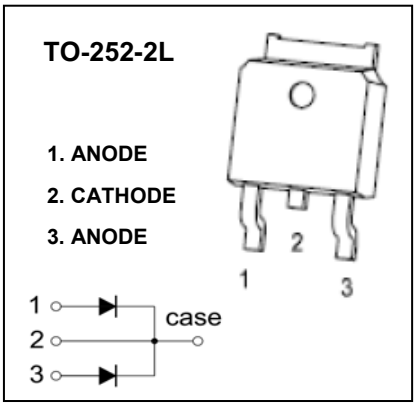
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

# TO-252-2L Plastic-Encapsulate Diodes

## MBRD1070CT, 80CT, 90CT, 100CT

SCHOTTKY BARRIER RECTIFIER




### FEATURES

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss,High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters,Free Wheeling, and Polarity Protection Applications

**MAXIMUM RATINGS ( $T_a$=25℃ unless otherwise noted )**

| Symbol | Parameter | Value | | | | Unit |
|---|---|---|---|---|---|---|
| | | MBRD 1070CT | MBRD 1080CT | MBRD 1090CT | MBRD 10100CT | |
| $V_{RRM}$ | Peak repetitive reverse voltage | 70 | 80 | 90 | 100 | V |
| $V_{RWM}$ | Working peak reverse voltage | | | | | |
| $V_R$ | DC blocking voltage | | | | | |
| $V_{R(RMS)}$ | RMS reverse voltage | 49 | 56 | 63 | 70 | V |
| $I_O$ | Average rectified output current@ $T_c$=100℃ | 10 | | | | A |
| $I_{FSM}$ | Non-Repetitive peak forward surge current 8.3ms half sine wave | 120 | | | | A |
| $P_D$ | Power dissipation | 1.25 | | | | W |
| $R_{\Theta JA}$ | Thermal resistance from junction to ambient | 80 | | | | ℃/W |
| $T_j$ | Junction temperature | 125 | | | | ℃ |
| $T_{stg}$ | Storage temperature | -55~+150 | | | | ℃ |

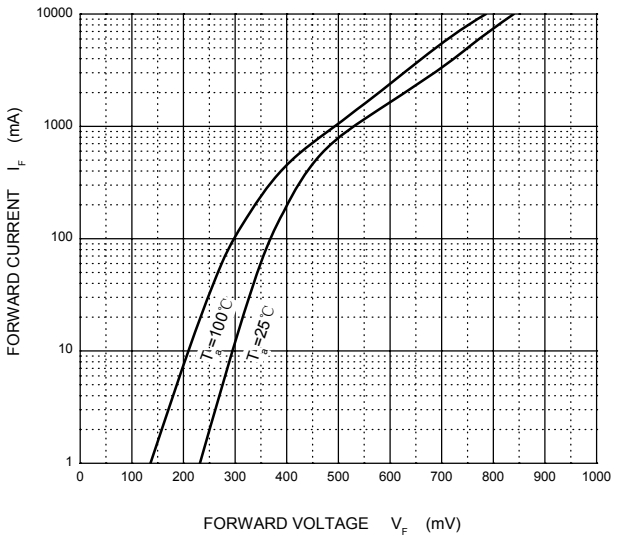
**ELECTRICAL CHARACTERISTICS ($T_a$=25℃ unless otherwise specified)**

| Parameter | Symbol | Device | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| **Reverse voltage** | $V_{(BR)}$ | MBRD1070CT | $I_R$=0.1mA | 70 | | | V |
| | | MBRD1080CT | | 80 | | | |
| | | MBRD1090CT | | 90 | | | |
| | | MBRD10100CT | | 100 | | | |
| **Reverse current** | $I_R$ | MBRD1070CT | $V_R$=70V | | | 0.1 | mA |
| | | MBRD1080CT | $V_R$=80V | | | | |
| | | MBRD1090CT | $V_R$=90V | | | | |
| | | MBRD10100CT | $V_R$=100V | | | | |
| **Forward voltage** | $V_{F(1)}$ | MBRD1070CT-10100CT | $I_F$=5A | | | 0.85 | V |
| | $V_{F(2)}$* | MBRD1070CT-10100CT | $I_F$=10A | | | 0.95 | |
| **Typical total capacitance** | $C_{tot}$ | MBRD1070CT-10100CT | $V_R$=4V,f=1MHz | | 150 | | pF |

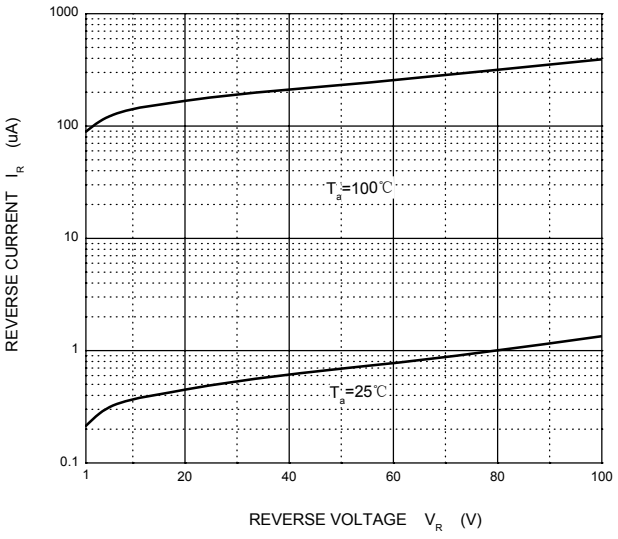
*Pulse test

# Typical Characteristics

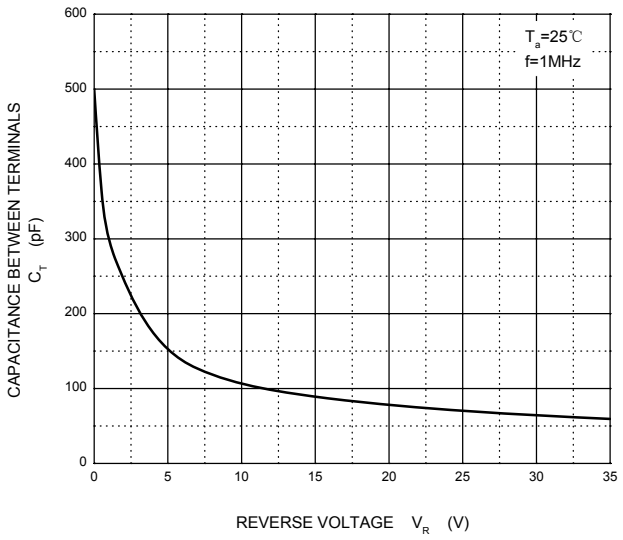
**Forward Characteristics**



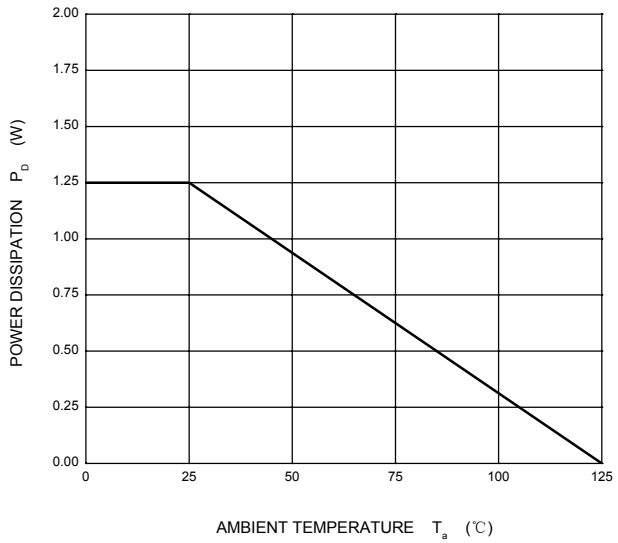

**Reverse Characteristics**



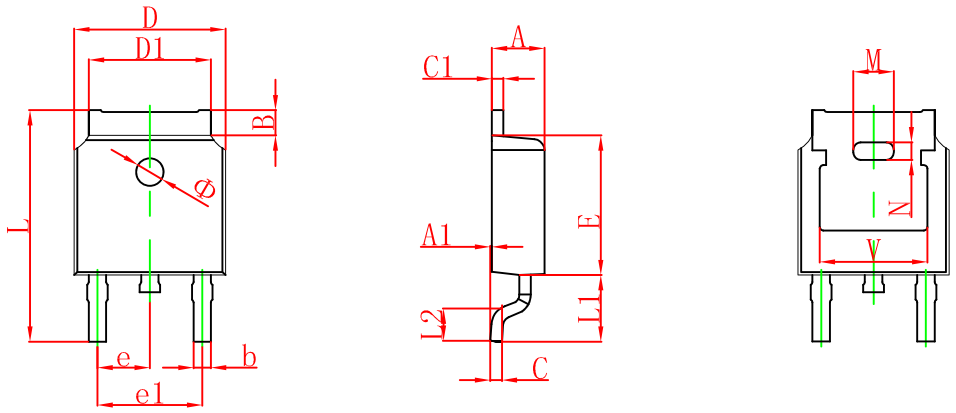

**Capacitance Characteristics**




**Power Derating Curve**

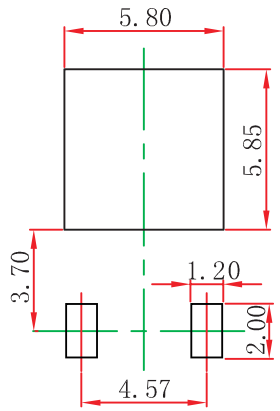


## TO-252(4R)-2L Package Outline Dimensions




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 2.200 | 2.380 | 0.087 | 0.094 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| B | 0.800 | 1.400 | 0.031 | 0.055 |
| b | 0.710 | 0.810 | 0.028 | 0.032 |
| c | 0.460 | 0.560 | 0.018 | 0.022 |
| c1 | 0.460 | 0.560 | 0.018 | 0.022 |
| D | 6.500 | 6.700 | 0.256 | 0.264 |
| D1 | 5.130 | 5.460 | 0.202 | 0.215 |
| E | 6.000 | 6.200 | 0.236 | 0.244 |
| e | 2.286 TYP. | | 0.090 TYP. | |
| e1 | 4.327 | 4.727 | 0.170 | 0.186 |
| M | 1.778REF. | | 0.070REF. | |
| N | 0.762REF. | | 0.018REF. | |
| L | 9.800 | 10.400 | 0.386 | 0.409 |
| L1 | 2.9REF. | | 0.114REF. | |
| L2 | 1.400 | 1.700 | 0.055 | 0.067 |
| V | 4.830 REF. | | 0.190 REF. | |
| Φ | 1.100 | 1.300 | 0.043 | 0.051 |

## TO-252(4R)-2L Suggested Pad Layout



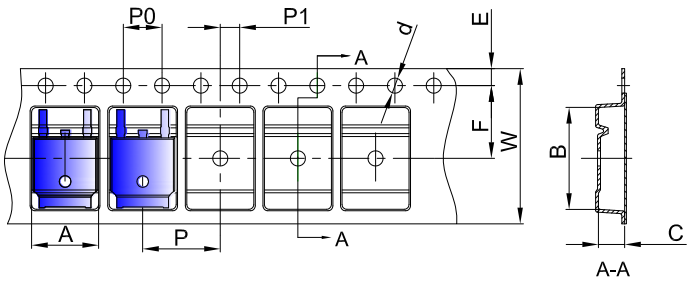

Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

JCET reserve the right to make modifications,enhancements, improvements, corrections or other changes without further notice to any product herein.JCET does not assume any liability arising out of the application or use of any product described herein.

# To-252(4R)-2L Tape and Reel

## TO-252 Embossed Carrier Tape

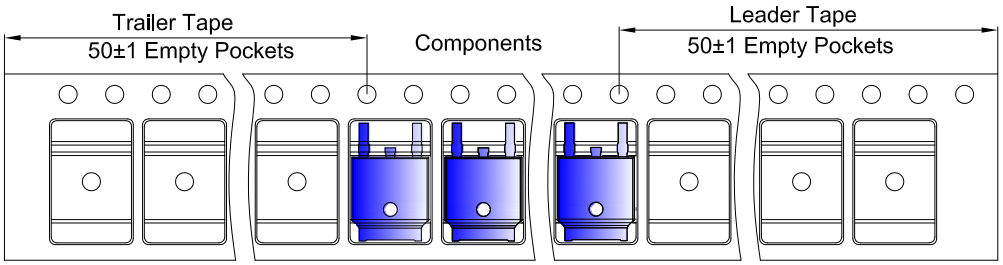



Packaging Description:

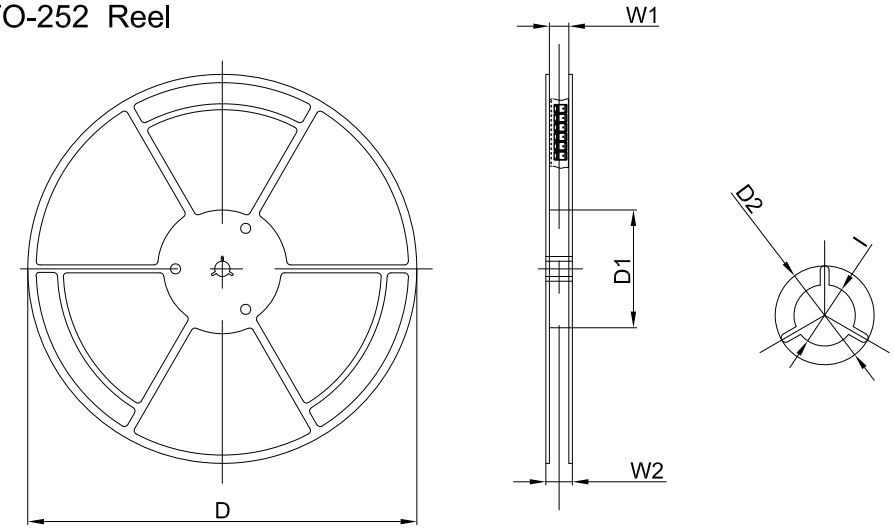
TO-252 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in 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 | |