



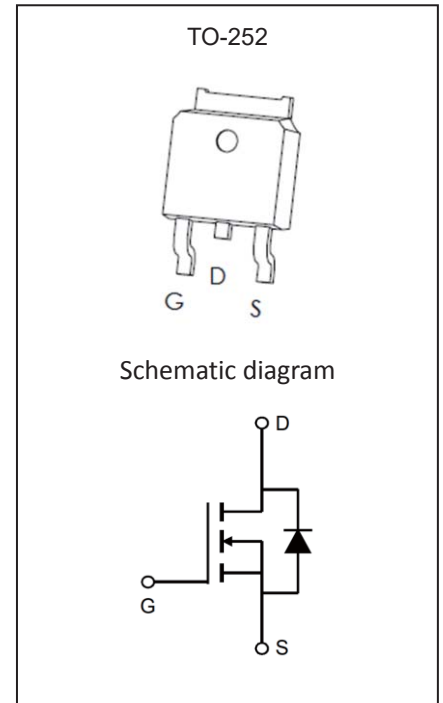
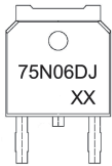
#### Product Summary

|               |                 |       |
|---------------|-----------------|-------|
| $V_{(BR)DSS}$ | $R_{DS(on)TYP}$ | $I_D$ |
| 60V           | 7.2mΩ@10V       | 75A   |

#### Feature

- High density cell design for ultra low Rdson
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high  $E_{AS}$
- Excellent package for good heat dissipation
- Special process technology for high ESD capability
- **Application**
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

#### MARKING:



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

| Parameter                                  | Symbol          | Value     | Unit          |
|--|-----------------|-----------|---------------|
| Drain-Source Voltage                       | $V_{DS}$        | 60        | V             |
| Gate-Source Voltage                        | $V_{GS}$        | ±20       | V             |
| Continuous Drain Current                   | $I_D$           | 75        | A             |
| Pulsed Drain Current                       | $I_{DM}$        | 300       | A             |
| Single Pulse Avalanche Energy <sup>5</sup> | $E_{AS}$        | 450       | mJ            |
| Total Power Dissipation                    | $P_D$           | 41        | W             |
| Thermal Resistance from Junction to Case   | $R_{\theta JC}$ | 3         | $^{\circ}C/W$ |
| Junction Temperature                       | $T_J$           | 150       | $^{\circ}C$   |
| Storage Temperature                        | $T_{STG}$       | -55~ +150 | $^{\circ}C$   |

**MOSFET ELECTRICAL CHARACTERISTICS(T<sub>c</sub>=25°C unless otherwise noted)**

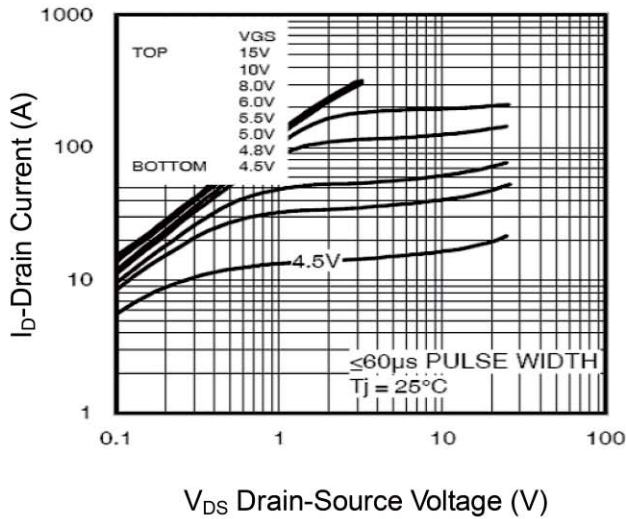
| Parameter                                    | Symbol               | Test Condition   | Min | Type | Max  | Unit |
|--|----------------------|--|-----|------|------|------|
| <b>Static Characteristics</b>                |                      |  |     |      |      |      |
| Drain-source breakdown voltage               | V <sub>(BR)DSS</sub> | V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA  | 60  |      |      | V    |
| Zero gate voltage drain current              | I <sub>DSS</sub>     | V <sub>DS</sub> =60V, V <sub>GS</sub> = 0V   |     |      | 1    | μA   |
| Gate-body leakage current                    | I <sub>GSS</sub>     | V <sub>GS</sub> =±20V, V <sub>DS</sub> = 0V  |     |      | ±100 | nA   |
| Gate threshold voltage <sup>3</sup>          | V <sub>GS(th)</sub>  | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA   | 2   | 3    | 4    | V    |
| Drain-source on-resistance <sup>3</sup>      | R <sub>DS(on)</sub>  | V <sub>GS</sub> =10V, I <sub>D</sub> =30A  |     | 7.2  | 9.5  | mΩ   |
| Forward tranconductance <sup>3</sup>         | g <sub>FS</sub>      | V <sub>DS</sub> =10V, I <sub>D</sub> =15A  | 18  |      |      | S    |
| <b>Dynamic characteristics<sup>4</sup></b>   |                      |  |     |      |      |      |
| Input Capacitance                            | C <sub>iss</sub>     | V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f =1MHz   |     | 2860 |      | pF   |
| Output Capacitance                           | C <sub>oss</sub>     |  |     | 281  |      |      |
| Reverse Transfer Capacitance                 | C <sub>rss</sub>     |  |     | 265  |      |      |
| <b>Switching Characteristics<sup>4</sup></b> |                      |  |     |      |      |      |
| Total Gate Charge@-4.5V                      | Q <sub>g</sub>       | V <sub>DS</sub> =50V , V <sub>GS</sub> =10V , I <sub>D</sub> =40A  |     | 77   |      | nC   |
| Gate-Source Charge                           | Q <sub>gs</sub>      |  |     | 15.7 |      |      |
| Gate-Drain Charge                            | Q <sub>gd</sub>      |  |     | 35.2 |      |      |
| Turn-on delay time                           | t <sub>d(on)</sub>   | V <sub>DD</sub> =30V , V <sub>GS</sub> =10V , R <sub>L</sub> =15Ω ,<br>I <sub>D</sub> =2A R <sub>G</sub> =2.5Ω |     | 18   |      | ns   |
| Turn-on rise time                            | t <sub>r</sub>       |  |     | 29   |      |      |
| Turn-off delay time                          | t <sub>d(off)</sub>  |  |     | 55   |      |      |
| Turn-off fall time                           | t <sub>f</sub>       |  |     | 27   |      |      |
| <b>Diode Characteristics</b>                 |                      |  |     |      |      |      |
| Continuous Source Current <sup>2</sup>       | I <sub>S</sub>       | V <sub>G</sub> =V <sub>D</sub> =0V , Force Current   |     |      | 75   | A    |
| Diode Forward Voltage <sup>3</sup>           | V <sub>SD</sub>      | V <sub>GS</sub> =0V , I <sub>S</sub> =1A , T <sub>J</sub> =25°C  |     |      | 1.2  | V    |
| Reverse Recovery Time                        | t <sub>rr</sub>      | T <sub>J</sub> =25°C I <sub>F</sub> =75A ,dI/dt=100A/μs <sup>3</sup>   |     | 26   |      | nS   |
| Reverse Recovery Charge                      | Q <sub>rr</sub>      |  |     | 33   |      | nC   |

Note :

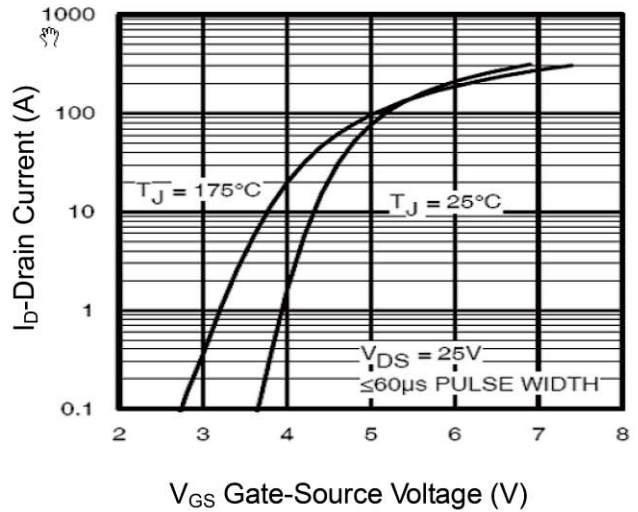
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production
5. EAS condition : T<sub>J</sub>=25°C, V<sub>DD</sub>=30V, V<sub>G</sub>=10V, L=0.5mH, R<sub>g</sub>=25Ω

Typical Electrical and Thermal Characteristics

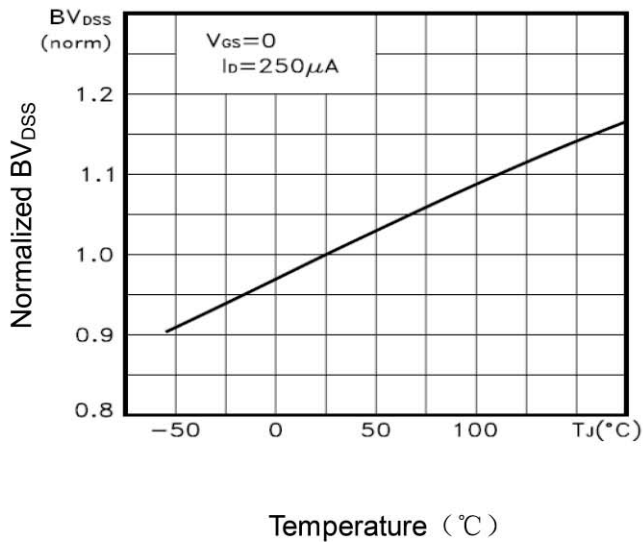
**Figure1. Output Characteristics**



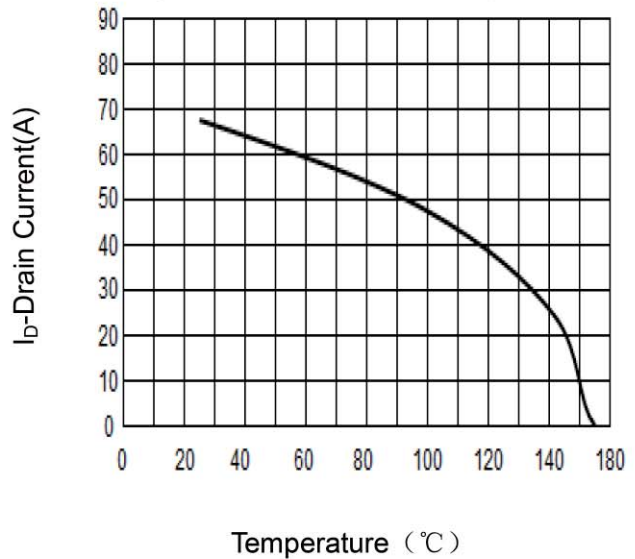
**Figure2. Transfer Characteristics**



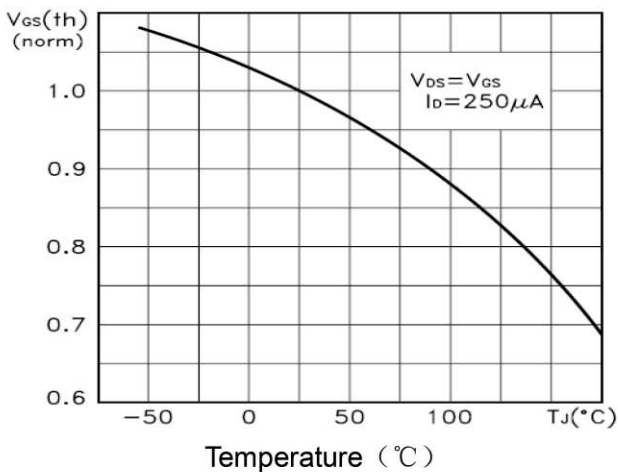
**Figure3. BVDSS vs Junction Temperature**



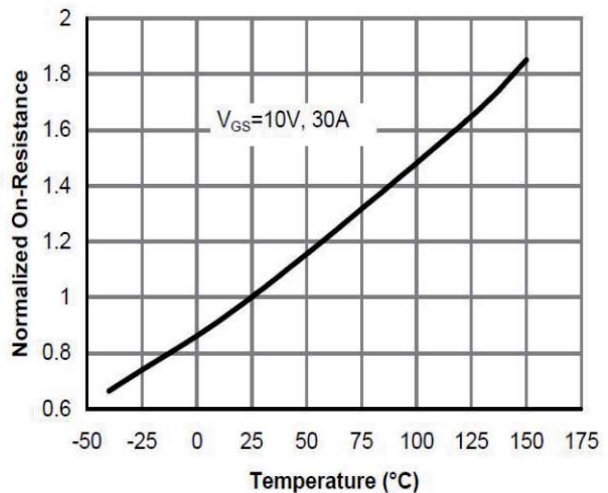
**Figure4. ID vs Junction Temperature**



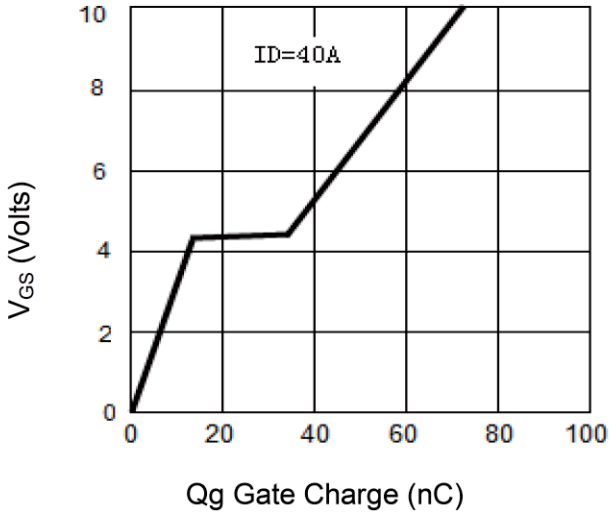
**Figure5. VGS(th) vs Junction Temperature**



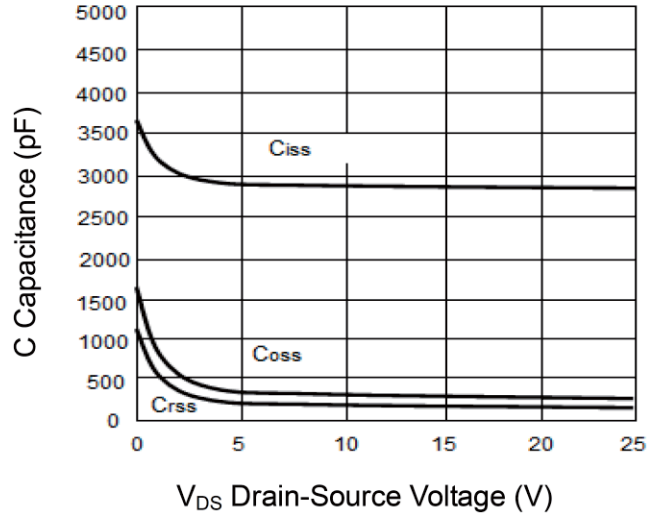
**Figure6. Rds(on) Vs Junction Temperature**



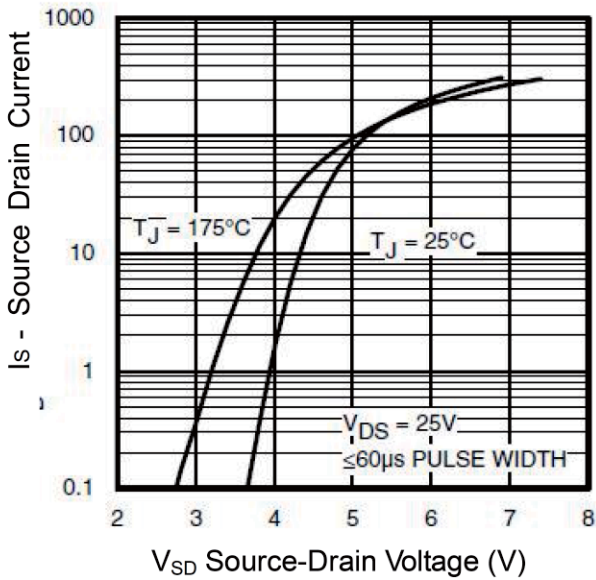
**Figure7. Gate Charge**



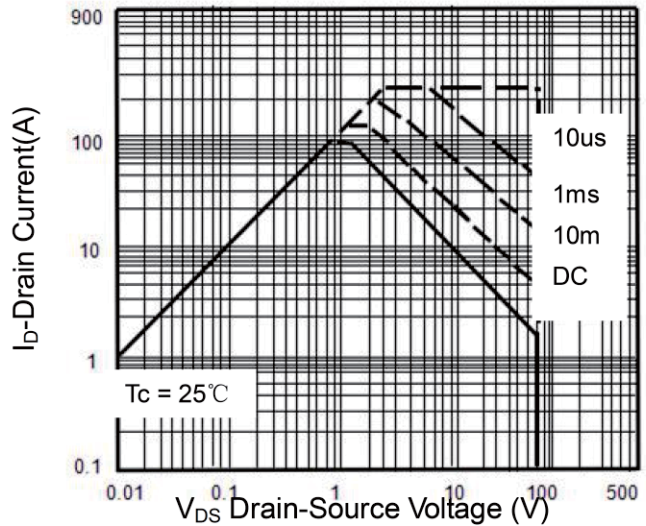
**Figure8. Capacitance vs Vds**



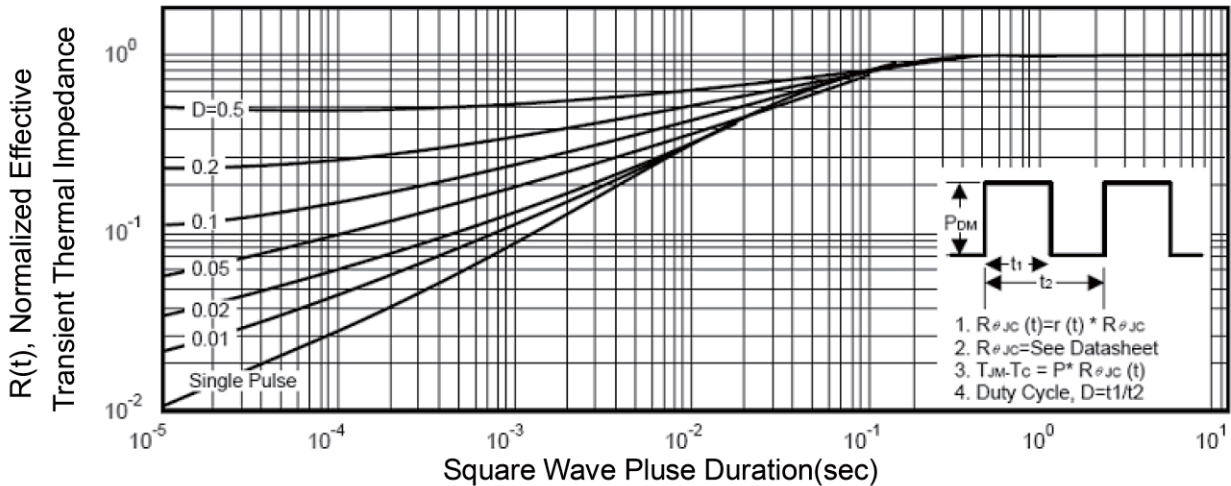
**Figure9. Source- Drain Diode Forward**



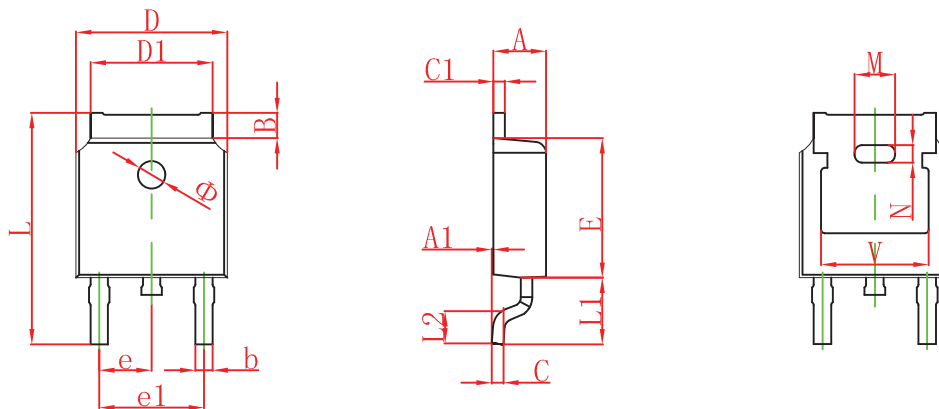
**Figure10. Safe Operation Area**



**Figure11. Normalized Maximum Transient Thermal Impedance**



## TO-252 Package Information

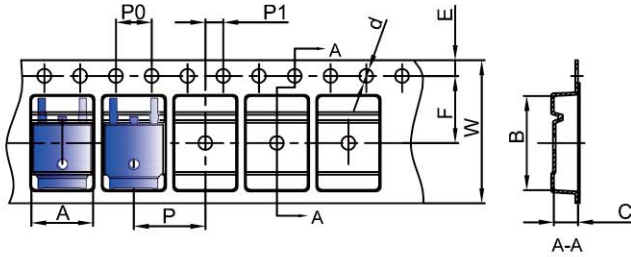


| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min.                      | Max.   | Min.                 | Max.  |
| A      | 2.200                     | 2.380  | 0.087                | 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 Tape and Reel**

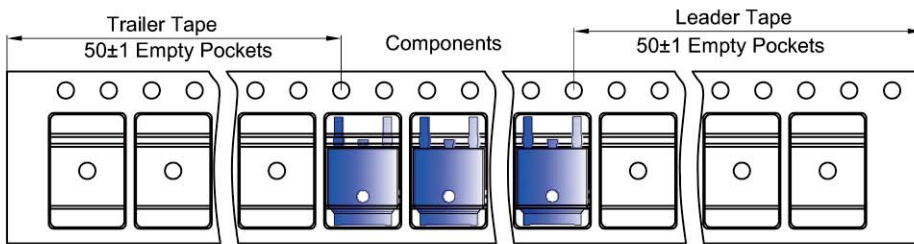
**TO-252 Tape and reel**

TO-252 Embossed Carrier Tape

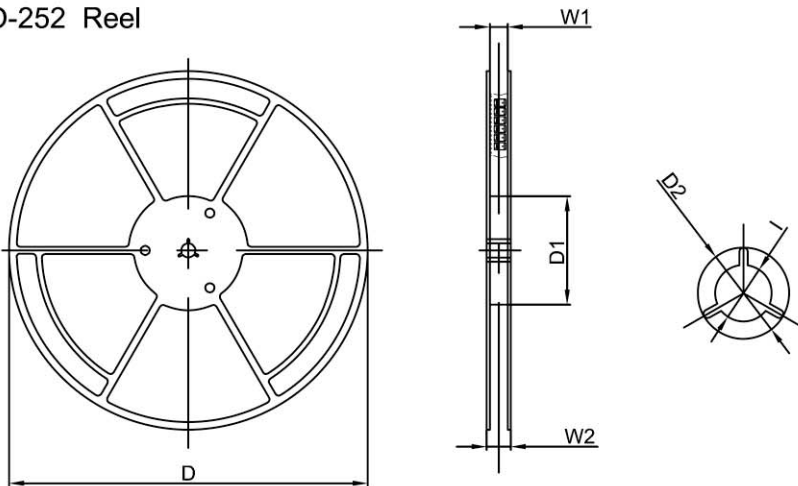


| Dimensions are in millimeter |        |        |        |        |        |        |        |        |        |           |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|
| Pkg type                     | A      | B      | 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     |
| (Tolerance)                  | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +/-0.1 | +0.3/-0.1 |

**TO-252 Tape Leader and Trailer**



**TO-252 Reel**



| Dimensions are in millimeter |        |        |        |       |       |        |
|------------------------------|--------|--------|--------|-------|-------|--------|
| Reel Option                  | D      | D1     | D2     | W1    | W2    | l      |
| 13" Dia                      | 330.00 | 100.00 | Ø21.00 | 16.40 | 21.00 | Ø13.00 |
| Tolerance                    | +/-2   | +/-1   | +/-1   | +/-1  | +/-1  | +/-1   |

| 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     | 14.04    |

单击下面可查看定价，库存，交付和生命周期等信息

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