



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

### CJU75N06 N-Channel Power MOSFET

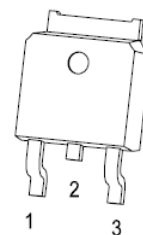
| $V_{(BR)DSS}$ | $R_{DS(on)MAX}$ | $I_D$ |
|---------------|-----------------|-------|
| 60V           | 11.5mΩ@10V      | 75A   |

#### GENERAL DESCRIPTION

The CJU75N06 uses advanced trench technology and design to provide excellent  $R_{DS(on)}$  with low gate charge. It can be used in a wide variety of applications.

#### TO-252-2L

1. GATE
2. DRAIN
3. SOURCE



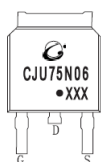
#### FEATURE

- $V_{DS} = 60V, I_D = 75A$
- $R_{DS(ON)} < 11.5m\Omega @ V_{GS} = 10V$  (Typ: 9.1mΩ)
- Good stability and uniformity with high EAS
- Excellent package for good heat dissipation
- High density cell design for ultra low  $R_{dson}$
- Special process technology for high ESD capability
- Fully characterized avalanche voltage and current

#### APPLICATION

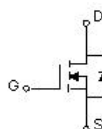
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

#### MARKING



CJU75N06= Device code  
Solid dot = Green molding compound device,  
if none, the normal device  
XXX=Date Code

#### EQUIVALENT CIRCUIT



#### Maximum ratings ( $T_a = 25^\circ C$ unless otherwise noted)

| Parameter                                                                         | Symbol          | Value      | Unit         |
|-----------------------------------------------------------------------------------|-----------------|------------|--------------|
| Drain-Source Voltage                                                              | $V_{DS}$        | 60         | V            |
| Gate-Source Voltage                                                               | $V_{GS}$        | ±20        |              |
| Continuous Drain Current                                                          | $I_D$           | 75         | A            |
| Pulsed Drain Current                                                              | $I_{DM}$        | 300        |              |
| Single Pulsed Avalanche Energy (note1)                                            | $E_{AS}$        | 300        | mJ           |
| Thermal Resistance from Junction to Ambient                                       | $R_{\theta JA}$ | 100        | $^\circ C/W$ |
| Junction Temperature                                                              | $T_J$           | 150        | $^\circ C$   |
| Storage Temperature Range                                                         | $T_{STG}$       | -55 ~ +150 |              |
| Maximum lead temperature for soldering purposes ,<br>1/8" from case for 5 seconds | $T_L$           | 260        |              |

## MOSFET ELECTRICAL CHARACTERISTICS

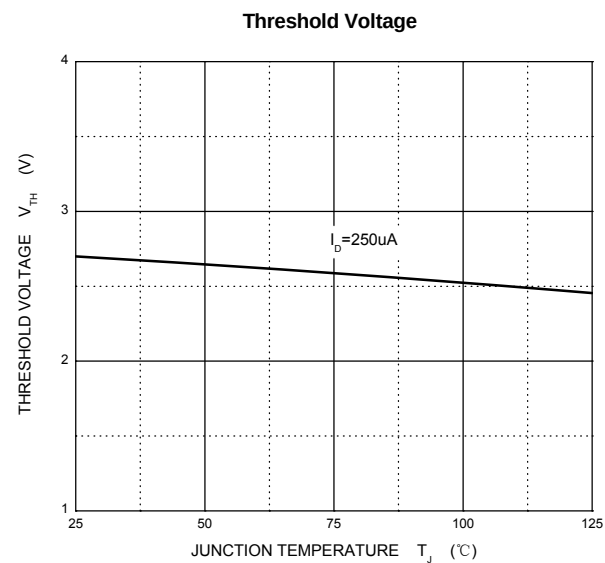
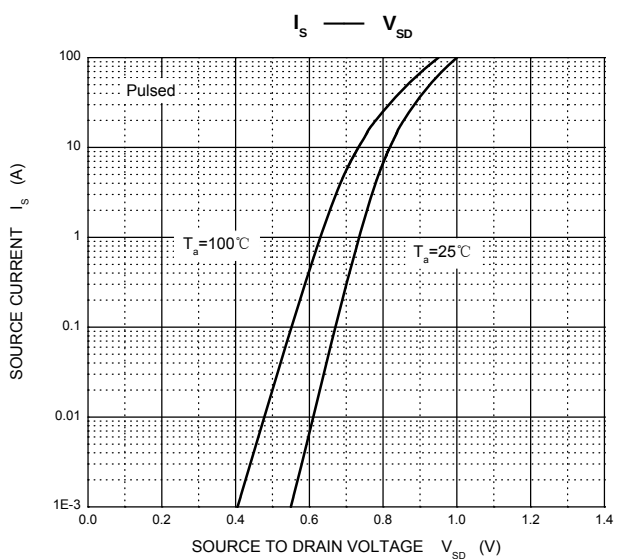
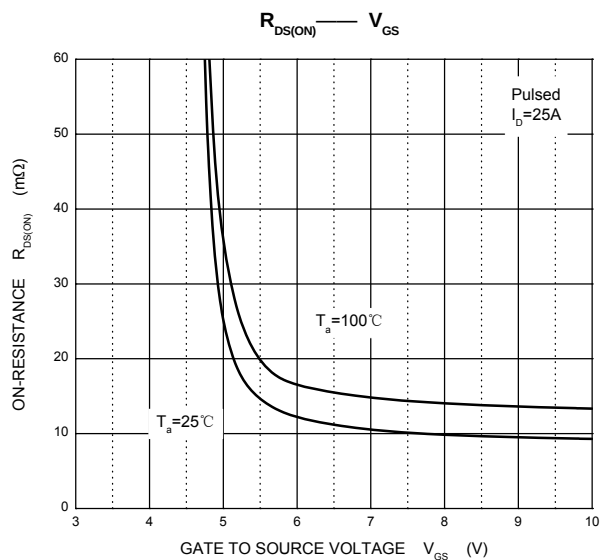
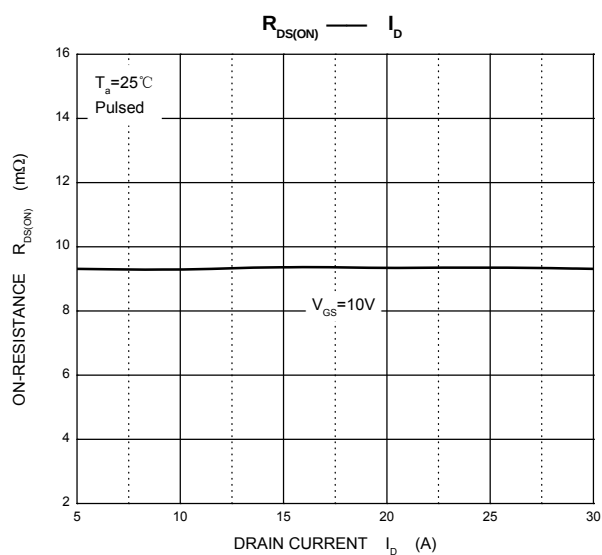
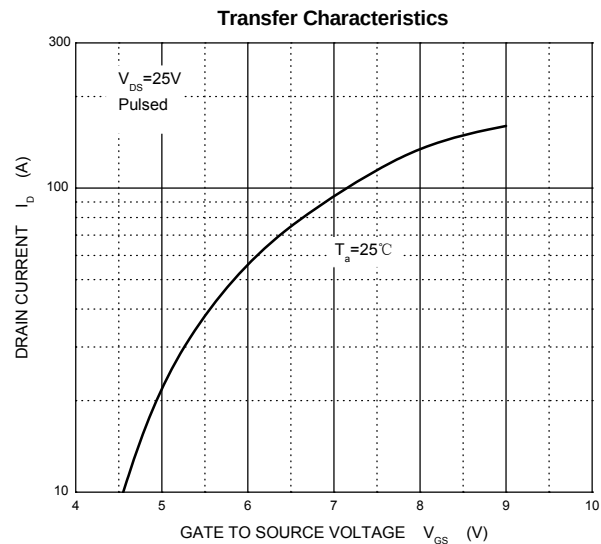
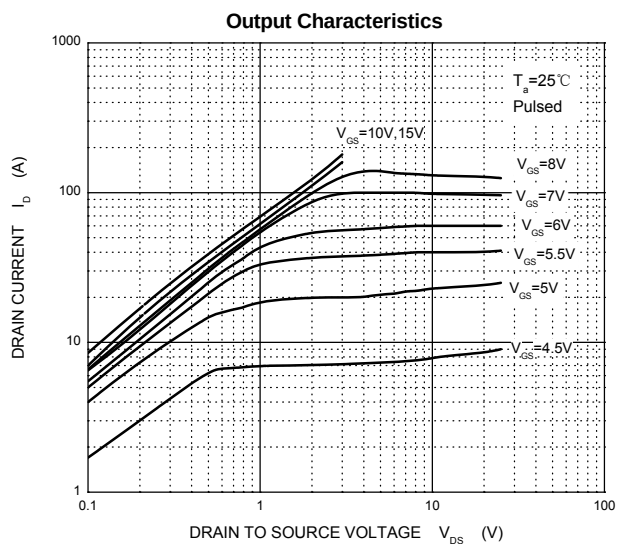
$T_a = 25^\circ\text{C}$  unless otherwise specified

| Parameter                                     | Symbol                | Test Condition                                                                                                 | Min | Typ  | Max  | Unit |
|-----------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|-----|------|------|------|
| Off characteristics                           |                       |                                                                                                                |     |      |      |      |
| Drain-source breakdown voltage                | V <sub>(BR) DSS</sub> | V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA                                                                    | 60  | 68   |      | 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>DS</sub> =0V, V <sub>GS</sub> =±20V                                                                     |     |      | ±100 | nA   |
| On characteristics (note2)                    |                       |                                                                                                                |     |      |      |      |
| Gate-threshold voltage                        | V <sub>GS(th)</sub>   | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA                                                       | 2   | 2.7  | 4    | V    |
| Static drain-source on-sate resistance        | R <sub>DS(on)</sub>   | V <sub>GS</sub> =10V, I <sub>D</sub> =30A                                                                      |     | 9.1  | 11.5 | mΩ   |
| Forward transconductance                      | g <sub>FS</sub>       | V <sub>DS</sub> =25V, I <sub>D</sub> =30A                                                                      | 20  |      |      | S    |
| Dynamic characteristics (note 3)              |                       |                                                                                                                |     |      |      |      |
| Input capacitance                             | C <sub>iss</sub>      | V <sub>DS</sub> =25V,V <sub>GS</sub> =0V,<br>f =1MHz                                                           |     | 2350 |      | pF   |
| Output capacitance                            | C <sub>Oss</sub>      |                                                                                                                |     | 237  |      |      |
| Reverse transfer capacitance                  | C <sub>rss</sub>      |                                                                                                                |     | 205  |      |      |
| Switching characteristics (note 3)            |                       |                                                                                                                |     |      |      |      |
| Total gate charge                             | Q <sub>g</sub>        | V <sub>DS</sub> =30V, V <sub>GS</sub> =10V,<br>I <sub>D</sub> =30A                                             |     | 50   |      | nC   |
| Gate-source charge                            | Q <sub>gs</sub>       |                                                                                                                |     | 12   |      |      |
| Gate-drain charge                             | Q <sub>gd</sub>       |                                                                                                                |     | 16   |      |      |
| Turn-on delay time                            | t <sub>d(on)</sub>    | V <sub>DD</sub> =30V,V <sub>GS</sub> =10V,<br>R <sub>G</sub> =2.5Ω, I <sub>D</sub> =2A,<br>R <sub>L</sub> =15Ω |     | 16   |      | ns   |
| Turn-on rise time                             | t <sub>r</sub>        |                                                                                                                |     | 10   |      |      |
| Turn-off delay time                           | t <sub>d(off)</sub>   |                                                                                                                |     | 45   |      |      |
| Turn-off fall time                            | t <sub>f</sub>        |                                                                                                                |     | 12   |      |      |
| Drain-Source Diode Characteristics            |                       |                                                                                                                |     |      |      |      |
| Drain-source diode forward voltage(note2)     | V <sub>SD</sub>       | V <sub>GS</sub> =0V, I <sub>S</sub> =30A                                                                       |     |      | 1.2  | V    |
| Continuous drain-source diode forward current | I <sub>S</sub>        |                                                                                                                |     |      | 75   | A    |
| Pulsed drain-source diode forward current     | I <sub>SM</sub>       |                                                                                                                |     |      | 300  | A    |

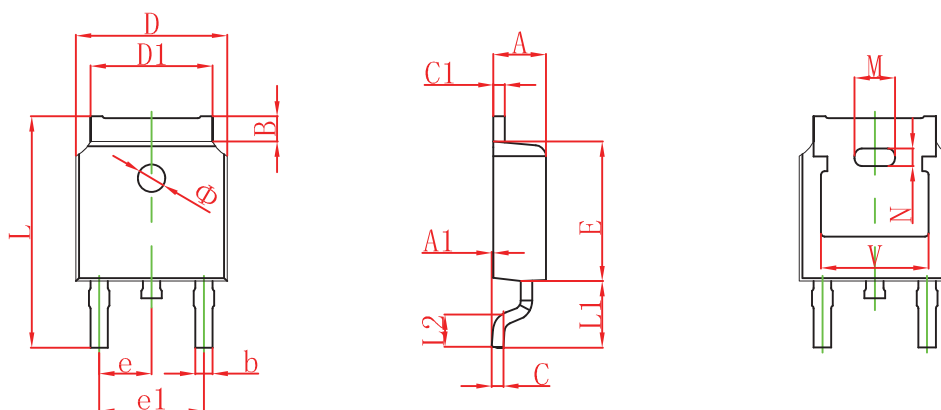
Notes:

1.  $L = 0.5mH, V_{DD} = 30V, V_G = 10V, R_G = 25\Omega$ , Starting  $T_J = 25^\circ\text{C}$ .
2. Pulse Test : Pulse Width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
3. Guaranteed by design, not subject to production.

# Typical Characteristics

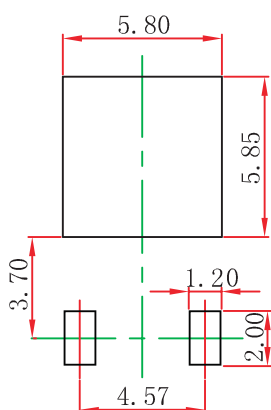


## TO-252(4R)-2L Package Outline Dimensions



| 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:

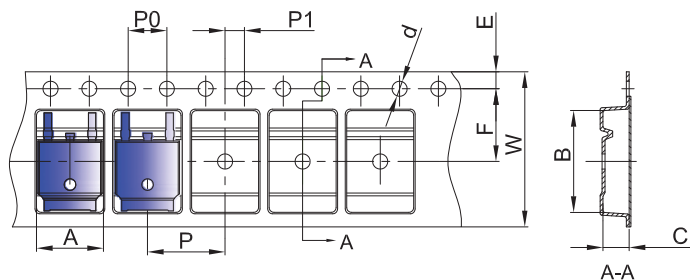
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### 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

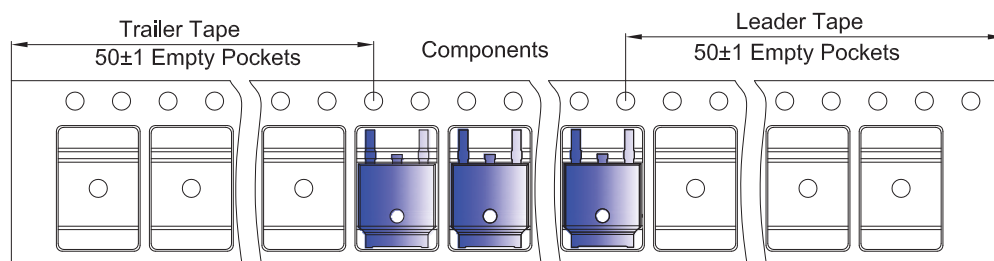


#### Packaging Description:

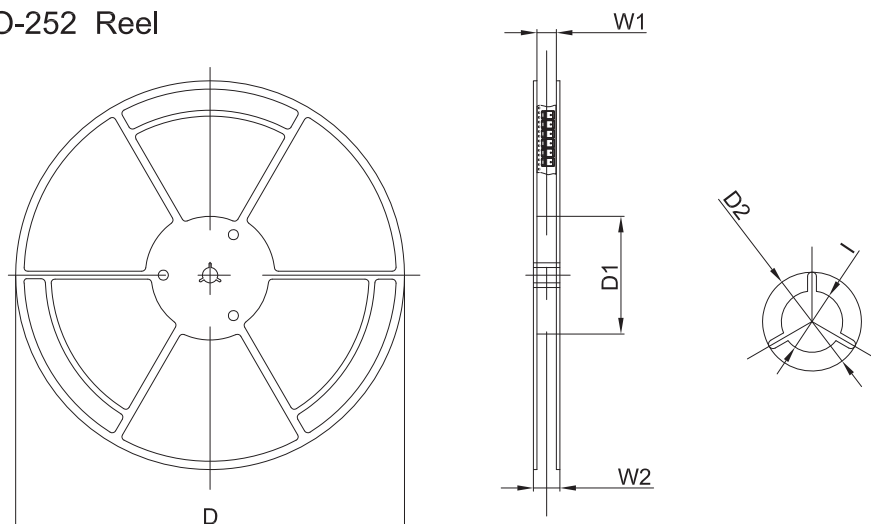
TO-252 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in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