



Micro Commercial Components



Micro Commercial Components  
20736 Marilla Street Chatsworth  
CA 91311

Phone: (818) 701-4933

Fax: (818) 701-4939

# 2N7002DW

## N-Channel MOSFET

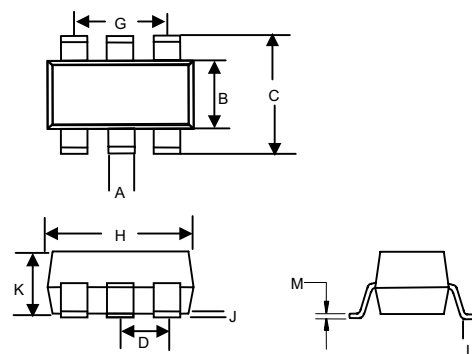
### SOT-363

## Features

- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Power Dissipation: 0.2W(Tamb=25°C)
- Drain Current: 115mA
- Drain-source Voltage: 60V
- Operating Junction Temperature: -55 to +150°C
- Storage Temperature: -55 to +150°C
- Marking: K72

## Electrical Characteristics @ 25°C Unless Otherwise Specified

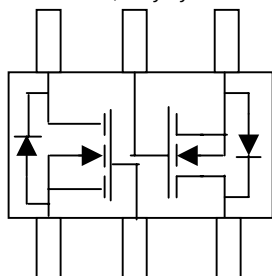
| Symbol        | Parameter                                                                                                               | Min | Typ        | Max         | Units      |
|---------------|-------------------------------------------------------------------------------------------------------------------------|-----|------------|-------------|------------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage*<br>( $V_{GS}=0Vdc, I_D=10\mu A$ )                                                       | 60  | 70         | ---         | Vdc        |
| $V_{th(GS)}$  | Gate-Threshold Voltage*<br>( $V_{DS}=V_{GS}, I_D=250\mu A$ )                                                            | 1.0 | 1.5        | 2.0         | Vdc        |
| $I_{GSS}$     | Gate-body Leakage*<br>( $V_{DS}=0Vdc, V_{GS}=\pm 20Vdc$ )                                                               | --- | ---        | $\pm 10$    | nAdc       |
| $I_{DSS}$     | Zero Gate Voltage Drain Current*<br>( $V_{DS}=60Vdc, V_{GS}=0Vdc$ )<br>( $V_{DS}=60Vdc, V_{GS}=0Vdc, T_J=125^\circ C$ ) | --- | ---        | 1<br>500    | $\mu A$ dc |
| $I_{D(ON)}$   | On-state Drain Current*<br>( $V_{DS}=7.5Vdc, V_{GS}=10Vdc$ )                                                            | 0.5 | 1.0        | ---         | Adc        |
| $r_{DS(on)}$  | Drain-Source On-Resistance*<br>( $V_{GS}=5Vdc, I_D=50mA$ )<br>( $V_{GS}=10Vdc, I_D=500mA$ )                             | --- | 3.2<br>4.4 | 7.5<br>13.5 | $\Omega$   |
| $g_{FS}$      | Forward Transconductance*<br>( $V_{DS}=10Vdc, I_D=200mA$ )                                                              | 80  | ---        | ---         | ms         |
| $C_{iss}$     | Input Capacitance                                                                                                       | --- | 22         | 50          | pF         |
| $C_{OSS}$     | Output Capacitance                                                                                                      | --- | 11         | 25          |            |
| $C_{RSS}$     | Reverse Transfer Capacitance                                                                                            | --- | 2          | 5           |            |



## Switching

|              |               |                                               |     |    |    |    |
|--------------|---------------|-----------------------------------------------|-----|----|----|----|
| $t_{d(on)}$  | Turn-on Time  | $V_{DD}=30Vdc,$<br>$V_{GEN}=10Vdc$            | --- | 7  | 20 | ns |
| $t_{d(off)}$ | Turn-off Time | $R_L=150\Omega, I_D=200mA,$<br>$R_G=25\Omega$ | --- | 11 | 20 |    |

\* Pulse test, pulse width  $\leq 300 \mu s$ , duty cycle  $\leq 20\%$



| DIM | INCHES |      | MM   |         | NOTE |
|-----|--------|------|------|---------|------|
|     | MIN    | MAX  | MIN  | MAX     |      |
| A   | .006   | .014 | 0.15 | 0.35    |      |
| B   | .045   | .053 | 1.15 | 1.35    |      |
| C   | .085   | .096 | 2.15 | 2.45    |      |
| D   | .026   |      | 0.65 | Nominal |      |
| G   | .047   | .055 | 1.20 | 1.40    |      |
| H   | .071   | .087 | 1.80 | 2.20    |      |
| J   | ---    | .004 | ---  | 0.10    |      |
| K   | .035   | .043 | 0.90 | 1.10    |      |
| L   | .010   | .018 | 0.26 | 0.46    |      |
| M   | .003   | .006 | 0.08 | 0.15    |      |

## Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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