## Feature

● $V_{DSS}$=600V @$T_C$=25℃；

● $I_D$=7.4A @$T_C$=25℃；

● Super high dense cell design for extremely low $R_{DS}$(on):

   1.1 Ω @$V_{GS}$=10V,$I_D$=3.7A,$T_C$=25℃；

● Fast switching.

### SYMBOL
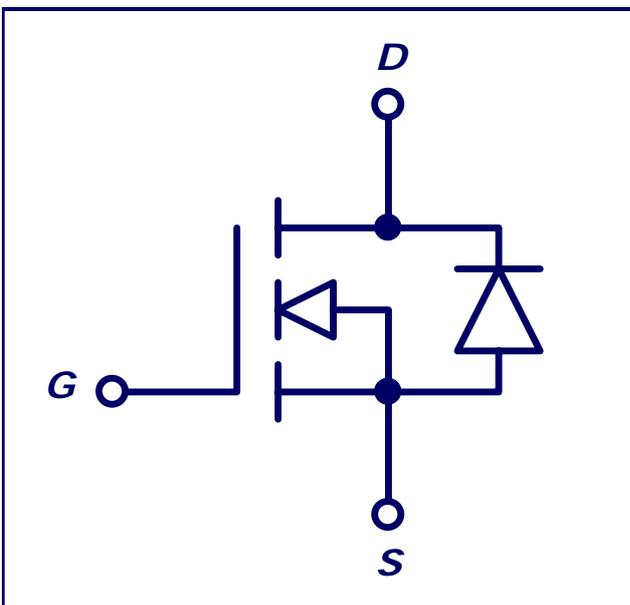


### TO-220   (Dimension in mm)
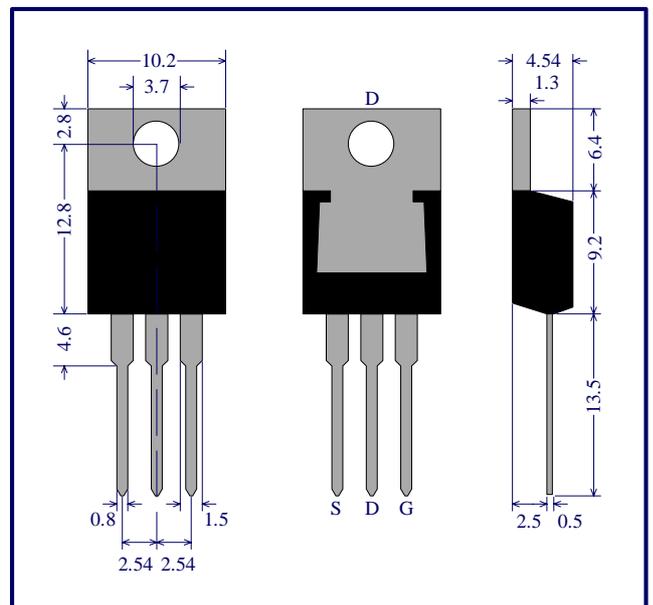


## LIMITING VALUES

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|---|---|---|---|---|---|
| $V_{DSS}$ | Drain-source voltage | $T_c$=25℃ | - | 600 | V |
| $V_{DGR}$ | Drain-gate voltage | $T_c$=25℃, $R_{GS}$=10kΩ | - | 600 | V |
| $V_{GS}$ | Gate-source voltage | $T_c$=25℃ | - | ±30 | V |
| $I_D$ | Continuous drain current | $T_c$=25℃ | - | 7.4 | A |
| | | $T_c$=100℃ | - | 4.7 | A |
| | | $T_A$=25℃,Without sink | - | 1 | A |
| | | $T_A$=100℃,Without sink | - | 0.6 | A |
| $P_D$ | Total power dissipation | $T_c$=25℃ | - | 113 | W |
| | | $T_c$=100℃ | - | 45 | W |
| | | $T_A$=25℃,Without sink | - | 2 | W |
| | | $T_A$=100℃,Without sink | - | 0.8 | W |
| $T_j$ , $T_{stg}$ | Operating junction and storage temperature | | -55 | 150 | ℃ |

## THERMAL RESISTANCES

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|--------|-----------|------------|------|------|------|------|
| $R_{thJC}$ | Thermal resistance, Junction-to-Case | | - | - | 1.1 | K/W |
| $R_{thCK}$ | Thermal resistance, Case-to-Sink | | - | 0.5 | - | K/W |
| $R_{thJA}$ | Thermal resistance, Junction-to-Ambient | In free air | - | 60 | - | K/W |

## ELECTRICAL CHARACTERISTICS (Tc=25℃,Unless otherwise noted)

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|--------|-----------|------------|------|------|------|------|
| $V_{(BR)DSS}$ | Drain-source breakdown voltage | $V_{GS}$=0V, $I_D$=0.25mA | 600 | - | - | V |
| $V_{GS(th)}$ | Gate threshold voltage | $V_{GS}$=$V_{DS}$, $I_D$=0.25mA | 2 | - | 5 | V |
| $R_{DS(ON)}$ | Drain-source on-state resistance | $V_{GS}$=10V, $I_D$=3.7A | - | - | 1.1 | $\Omega$ |
| | | $V_{GS}$=10V, $I_D$=7.4A | - | - | 2.1 | $\Omega$ |
| | | $V_{GS}$=10V,$I_D$=1A, $T_A$=25℃, in free air | - | - | 2.1 | $\Omega$ |
| $I_{DSS}$ | Zero gate voltage drain current | $V_{DS}$=600V, $V_{GS}$=0V | - | - | 100 | $\mu$ A |
| $I_{GSS}$ | Gate body leakage current | $V_{GS}$=30V, $V_{DS}$=0V | - | - | 100 | nA |

## REVERSE DIODE LIMITING VALUES AND CHARACTERISTICS

(Tc=25℃,Unless otherwise noted)

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|--------|-----------|------------|------|------|------|------|
| $V_{SD}$ | Diode forward voltage | $V_{GS}$=0V,$I_S$=7.4A | | | 2.7 | V |