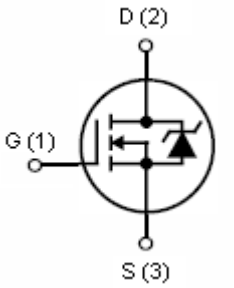
# N-Channel Mosfet Transistor

## Features:

- Drain current : $I_D$ = 60 A at $T_C$ = 25°C
- Drain source voltage : $V_{DSS}$ = 60 V (Minimum)
- Static drain - source on - resistance : $R_{DS\ (on)}$ = 0.016 Ω (Maximum)

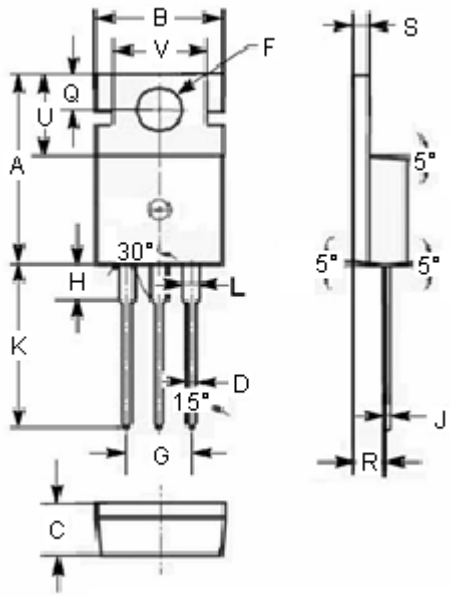
## Applications:

Solenoid and relay drivers
DC motor control
DC-DC converters DC
Automotive environment




**Pin** 1. Gate
2. Drain
3. Source

## TO-220C




| Dimensions | mm | |
|---|---|---|
| | Minimum | Maximum |
| A | 15.7 | 15.9 |
| B | 9.9 | 10.1 |
| C | 4.2 | 4.4 |
| D | 0.7 | 0.9 |
| F | 3.4 | 3.6 |
| G | 4.98 | 5.18 |
| H | 2.7 | 2.9 |
| J | 0.44 | 0.46 |
| K | 13.2 | 13.4 |
| L | 1.1 | 1.3 |
| Q | 2.7 | 2.9 |
| R | 2.5 | 2.7 |
| S | 1.29 | 1.31 |
| U | 6.45 | 6.65 |
| V | 8.66 | 8.86 |

Dimensions : Millimetres

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## Absolute Maximum Ratings ($T_a$ = 25°C)

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{DSS}$ | Collector - source voltage | 60 | V |
| $V_{GS}$ | Gate - source voltage - continuous | ±20 | V |
| $I_D$ | Drain current-continuous | 60 | A |
| $I_{DM}$ | Drain current - single pulse ($t_p \leq 10$ µs) | 240 | A |
| $P_D$ | Total dissipation at $T_C$ = 25°C | 110 | W |
| $T_J$ | Maximum operating junction temperature | 175 | °C |
| $T_{stg}$ | Storage temperature | -65 to 175 | °C |

## Thermal Characteristics

| Symbol | Parameter | Maximum | Unit |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal resistance, junction to case | 1.36 | °C/W |
| $R_{th\ j\text{-}a}$ | Thermal resistance, junction to ambient | 62.5 | °C/W |

## Electrical Characteristics ($T_C$ = 25°C Unless Otherwise Specified)

| Symbol | Parameter | Conditions | Minimum | Maximum | Unit |
|---|---|---|---|---|---|
| $V_{(BR)\ DSS}$ | Drain - source breakdown voltage | $V_{GS}$ = 0; $I_D$ = 0.25 mA | 60 | - | V |
| $V_{GS\ (th)}$ | Gate threshold voltage | $V_{DS}$ = $V_{GS}$; $I_D$ = 0.25 mA | 2 | 4 | V |
| $R_{DS\ (on)}$ | Drain - source on - resistance | $V_{GS}$ = 10 V; $I_D$ = 30 A | - | 0.016 | Ω |
| $I_{GSS}$ | Gate - body leakage current | $V_{GS}$ = ±20 V; $V_{DS}$ = 0 | - | ±100 | nA |
| $I_{DSS}$ | Zero gate voltage drain current | $V_{DS}$ = Maximum rating<br>$V_{DS}$ = Maximum rating; $T_j$ = 125°C | - | 1<br>10 | µA |
| $V_{SD}$ | Forward on - voltage | $I_S$ = 60 A; $V_{GS}$ = 0 | - | 1.3 | V |

## Part Number Table

| Description | Part Number |
|---|---|
| N-Channel Mosfet Transistor | STP60NF06 |