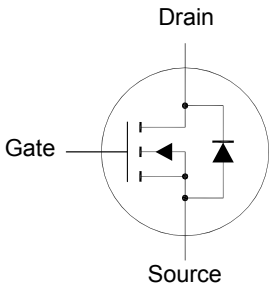
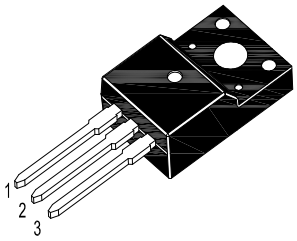
# SFTN540

## N-Channel Enhancement Mode Power MOSFET




TO-220F Plastic Package
1.Gate 2.Drain 3.Source

**Absolute Maximum Ratings**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 100 | V |
| Gate-Source Voltage | $V_{GS}$ | ± 20 | V |
| Drain Current $T_C$ = 25℃<br>$T_C$ = 100℃ | $I_D$ | 20<br>14 | A |
| Peak Drain Current | $I_{DM}$ | 110 | A |
| Power Dissipation $T_C$ = 25℃ | $P_{tot}$ | 54 | W |
| Operating Junction and Storage Temperature Range | $T_J$, $T_{stg}$ | - 55 to + 175 | ℃ |

**Thermal Characteristics**

| Parameter | Symbol | Max. | Unit |
|---|---|---|---|
| Maximum Thermal Resistance from Juntion to Case | $R_{\theta JC}$ | 2.8 | K/W |
| Maximum Thermal Resistance from Juntion to Ambient | $R_{\theta JA}$ | 65 | K/W |

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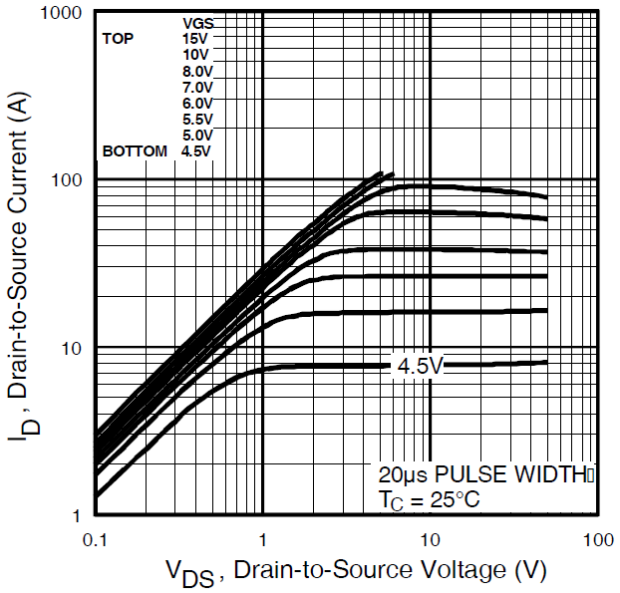
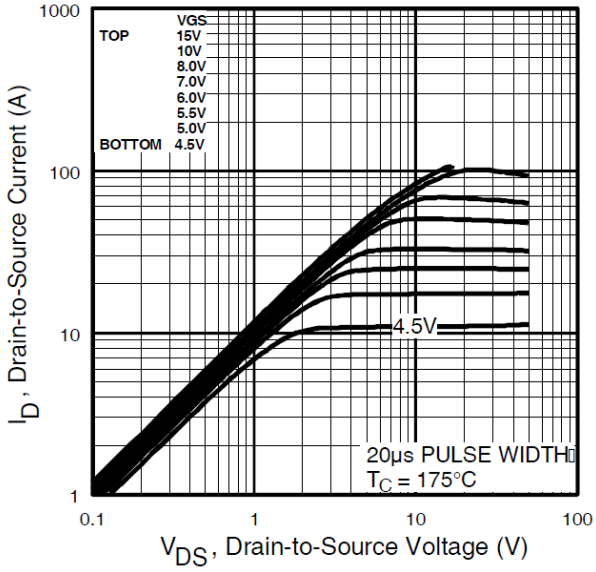
**Characteristics at $T_J$ = 25℃ unless otherwise specified**

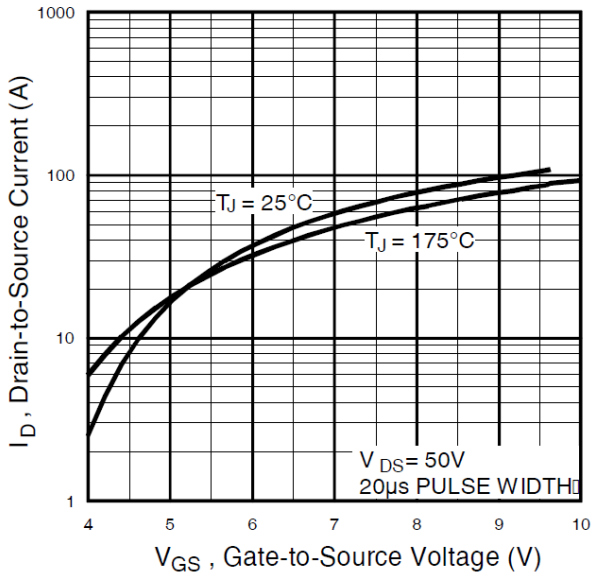
| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage<br>at $I_D$ = 0.25 mA | $BV_{DSS}$ | 100 | - | - | V |
| Drain-Source Leakage Current<br>at $V_{DS}$ = 100 V<br>at $V_{DS}$ = 80 V, $T_J$ = 150℃ | $I_{DSS}$ | -<br>- | -<br>- | 25<br>250 | μA |
| Gate Leakage Current<br>at $V_{GS}$ = ±20 V | $I_{GSS}$ | - | - | ±100 | nA |
| Gate-Source Threshold Voltage<br>at $V_{DS}$ = $V_{GS}$, $I_D$ = 250 μA | $V_{GS(th)}$ | 2 | - | 4 | V |
| Drain-Source On-State Resistance<br>at $V_{GS}$ = 10 V, $I_D$ = 11 A | $R_{DS(on)}$ | - | - | 52 | mΩ |
| Forward Transconductance<br>at $V_{DS}$ = 50 V, $I_D$ = 16 A | $g_{FS}$ | 11 | - | - | S |
| Input Capacitance<br>at $V_{GS}$ = 0 V, $V_{DS}$ = 25 V, f = 1 MHz | $C_{iss}$ | - | 1400 | - | pF |
| Output Capacitance<br>at $V_{GS}$ = 0 V, $V_{DS}$ = 25 V, f = 1 MHz | $C_{oss}$ | - | 330 | - | pF |
| Reverse Transfer Capacitance<br>at $V_{GS}$ = 0 V, $V_{DS}$ = 25 V, f = 1 MHz | $C_{rss}$ | - | 170 | - | pF |
| Turn-On Delay Time<br>at $I_D$ = 16 A, $V_{DD}$ = 50 V, $R_D$= 3 Ω, $R_G$= 5.1 Ω | $t_{d(on)}$ | - | 8.2 | - | ns |
| Turn-On Rise Time<br>at $I_D$ = 16 A, $V_{DD}$ = 50 V, $R_D$= 3 Ω, $R_G$= 5.1 Ω | $t_r$ | - | 39 | - | ns |
| Turn-Off Delay Time<br>at $I_D$ = 16 A, $V_{DD}$ = 50 V, $R_D$= 3 Ω, $R_G$= 5.1 Ω | $t_{d(off)}$ | - | 44 | - | ns |
| Turn-Off Fall Time<br>at $I_D$ = 16 A, $V_{DD}$ = 50 V, $R_D$= 3 Ω, $R_G$= 5.1 Ω | $t_f$ | - | 33 | - | ns |

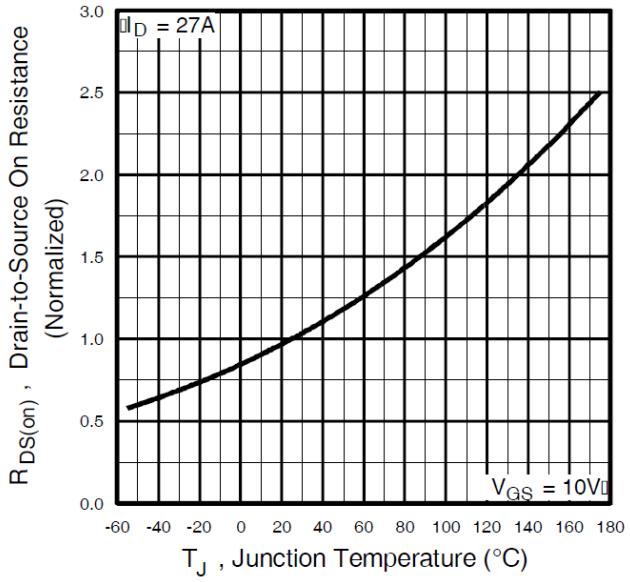
**Drain-Source Body Diode Rating Characteristics**

| Parameter | Symbol | Max. | Unit |
|---|---|---|---|
| Continuous Source-Drain Diode Current | $I_S$ | 20 | A |
| Pulsed Continuous Source-Drain Diode Current | $I_{SM}$ | 110 | A |
| Drain-Source Diode Forward Voltage<br>at $I_S$ = 11 A | $V_{SD}$ | 1.3 | V |

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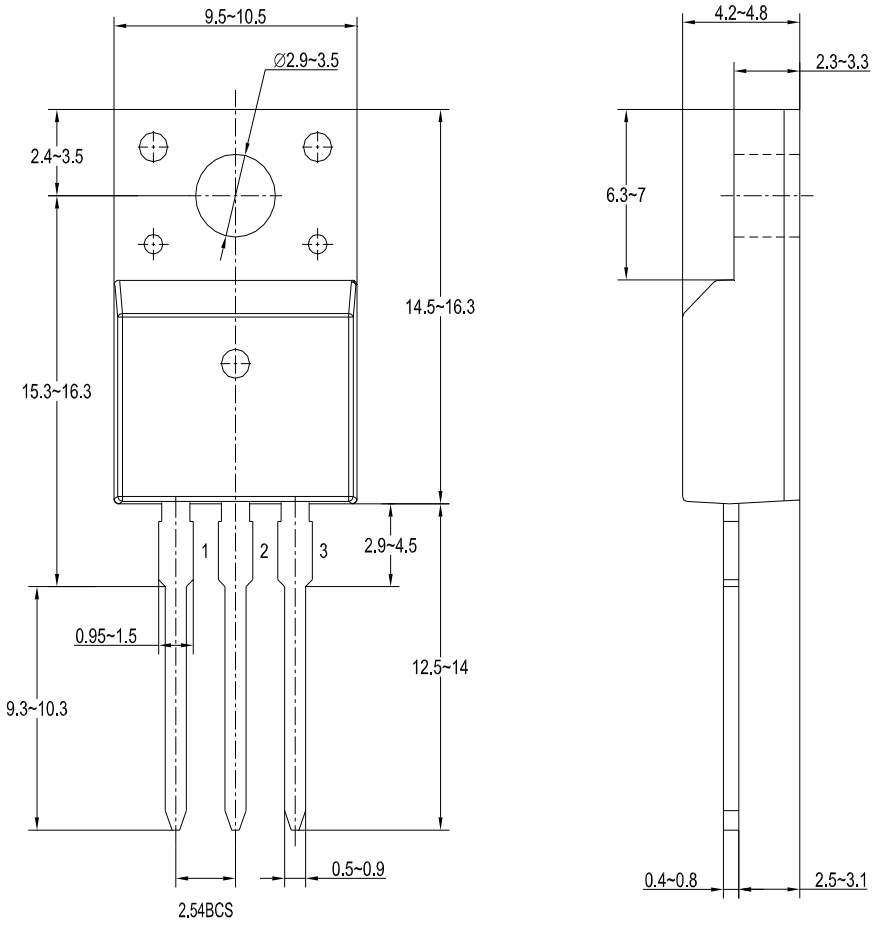
## TO-220F Package Outline

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