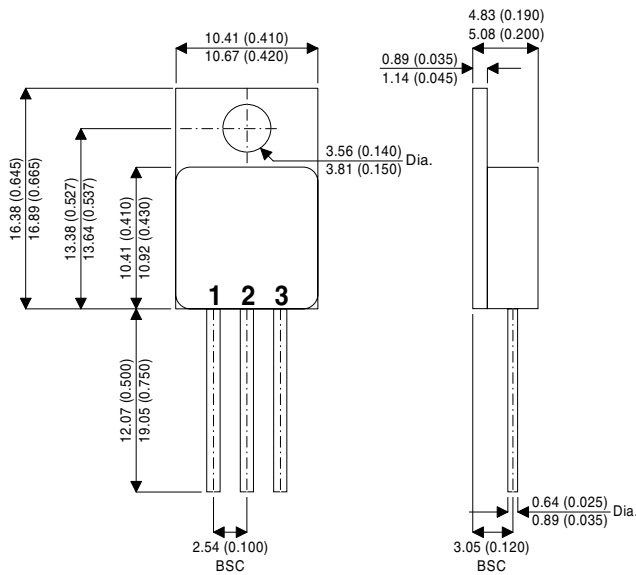


MECHANICAL DATA

Dimensions in mm(inches)



TO-257AB Metal Package

Pin 1 – Gate Pin 2 – Drain Pin 3 – Source

**P-CHANNEL
ENHANCEMENT MODE
TRANSISTOR**

$V_{(BR)DSS}$ **-100V**
 $I_{D(A)}$ **-14A**
 $R_{DS(on)}$ **0.20Ω**

FEATURES

- TO257AB HERMETIC PACKAGE FOR HIGH RELIABILITY APPLICATIONS
- SCREENING OPTIONS AVAILABLE
- SIMPLE DRIVE REQUIREMENTS

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)

| | | |
|----------------|--|----------------------------|
| V_{DS} | Drain – Source Voltage | - 100V |
| V_{GS} | Gate – Source Voltage | ±20V |
| I_D | Continuous Drain Current ($T_J = 150^{\circ}C$) | $T_C = 25^{\circ}C$ -14A |
| | | $T_C = 100^{\circ}C$ -8.7A |
| I_{DM} | Pulsed Drain Current | 56A |
| P_D | Power Dissipation | $T_C = 25^{\circ}C$ 70W |
| | | $T_C = 100^{\circ}C$ 27W |
| T_J, T_{stg} | Operating Junction and Storage Temperature Range | -55 to 150°C |
| T_L | Lead Temperature ($1/16$ " from case for 10 sec.) | 300°C |

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ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise stated)

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit | | |
|---|---|---|---------------------------|------|---------------------|---------------|---------------|
| STATIC ELECTRICAL RATINGS | | | | | | | |
| $V_{(BR)DSS}$ | Drain–Source Breakdown Voltage | $V_{GS} = 0$ | $I_D = -250\mu\text{A}$ | -100 | V | | |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS} = V_{GS}$ | $I_D = -250\mu\text{A}$ | -2 | -4 | V | |
| I_{GSS} | Gate – Body Leakage | $V_{DS} = 0$ | $V_{GS} = \pm 20\text{V}$ | | ± 100 | nA | |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{DS} = -80\text{V}$ $V_{GS} = 0$ | $T_J = 125^\circ\text{C}$ | | -25 -250 | μA | |
| $I_{D(on)}$ | On–State Drain Current ¹ | $V_{DS} = -10\text{V}$ | $V_{GS} = -10\text{V}$ | -14 | | A | |
| $r_{DS(on)}$ | Drain – Source On–State Resistance ¹ | $V_{GS} = -10\text{V}$ $I_D = 8.7\text{A}$ | $T_J = 125^\circ\text{C}$ | | 0.15 2.3 0.32 | Ω | |
| g_{fs} | Forward Transconductance ¹ | $V_{DS} = -15\text{V}$ | $I_{DS} = -8.7\text{A}$ | 5.0 | | S | |
| DYNAMIC CHARACTERISTICS | | | | | | | |
| C_{iss} | Input Capacitance | $V_{GS} = 0$ | | | 1300 | pF | |
| C_{oss} | Output Capacitance | $V_{DS} = 25\text{V}$ | | | 750 | | |
| C_{riss} | Reverse Transfer Capacitance | $f = 1\text{MHz}$ | | | 310 | | |
| Q_g | Total Gate Charge ² | $V_{DS} = -50$ | | | 50 | 62 | nC |
| Q_{gs} | Gate Source Charge ² | $V_{GS} = -10\text{V}$ | $I_D = -14\text{A}$ | | 10 | 15 | |
| Q_{gd} | Gate Drain Charge ² | | | | 27 | 35 | |
| $t_{d(on)}$ | Turn–On Delay Time ² | $V_{DD} = -50\text{V}$ | $I_D = -14\text{A}$ | | 10 | 30 | ns |
| t_r | Rise Time ² | $V_{GEN} = -10\text{V}$ | | | 50 | 80 | |
| $t_{d(off)}$ | Turn–Off Delay Time ² | $R_L = 3.5\Omega$ | | | 40 | 80 | |
| t_f | Fall Time ² | $R_G = 4.7\Omega$ | | | 40 | 60 | |
| SOURCE – DRAIN DIODE CHARACTERISTICS | | | | | | | |
| I_S | Continuous Current | | | | -14 | A | |
| I_{SM} | Pulsed Current | | | | -56 | | |
| V_{SD} | Diode Forward Voltage ¹ | $I_F = -14\text{A}$ | $V_{GS} = 0$ | | -2 | V | |
| t_{rr} | Reverse Recovery Time | $I_F = -14\text{A}$ | | | 150 | 300 | ns |
| Q_{rr} | Reverse Recovery Charge | $di/dt = 100\text{A}/\mu\text{s}$ | | | 0.3 | | μC |

¹ Pulse test : Pulse Width < 300 μs ,Duty Cycle < 2%

² Independent of Operating Temperature

THERMAL RESISTANCE CHARACTERISTICS

| Parameter | Min. | Typ. | Max. | Unit |
|------------|------|------|------|---------------------------|
| R_{thJC} | | | 1.8 | |
| R_{thJA} | | | 80 | $^\circ\text{C}/\text{W}$ |
| R_{thCS} | | 1.0 | | |

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