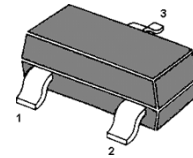


MMFTP84 P-Channel Enhancement Mode Vertical D-MOS Transistor

FEATURES

- Low threshold voltage
- Direct interface to C-MOS, TTL, etc.
- High-speed switching
- No secondary breakdown



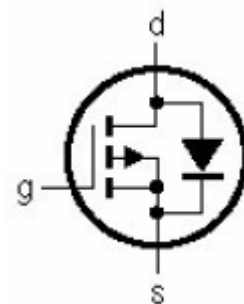
1. Gate 2. Source 3. Drain
SOT-23 Plastic Package

APPLICATIONS

- Line current interrupter in telephone sets
- Relay, high speed and line transformer drivers

CAUTION

- The device is supplied in an antistatic package
- The gate-source input must be protected against static discharge during transport or handling



Absolute Maximum Ratings

| Parameter | Symbol | Value | Unit |
|--|-----------|-------------------|------------------|
| Drain-Source Voltage | $-V_{DS}$ | 50 | V |
| Gate-Source Voltage | V_{GSO} | ± 20 | V |
| Drain Current | $-I_D$ | 130 | mA |
| Peak Drain Current | $-I_{DM}$ | 520 | mA |
| Total Power Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ | P_{tot} | 250 ¹⁾ | mW |
| Operating Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -65 to +150 | $^\circ\text{C}$ |

Thermal Characteristics

| Parameter | Symbol | Value | Unit |
|---|-------------|-------------------|------|
| Thermal Resistance from Junction to Ambient | R_{thj-a} | 500 ¹⁾ | K/W |

¹⁾ Device mounted on a printed-circuit board.

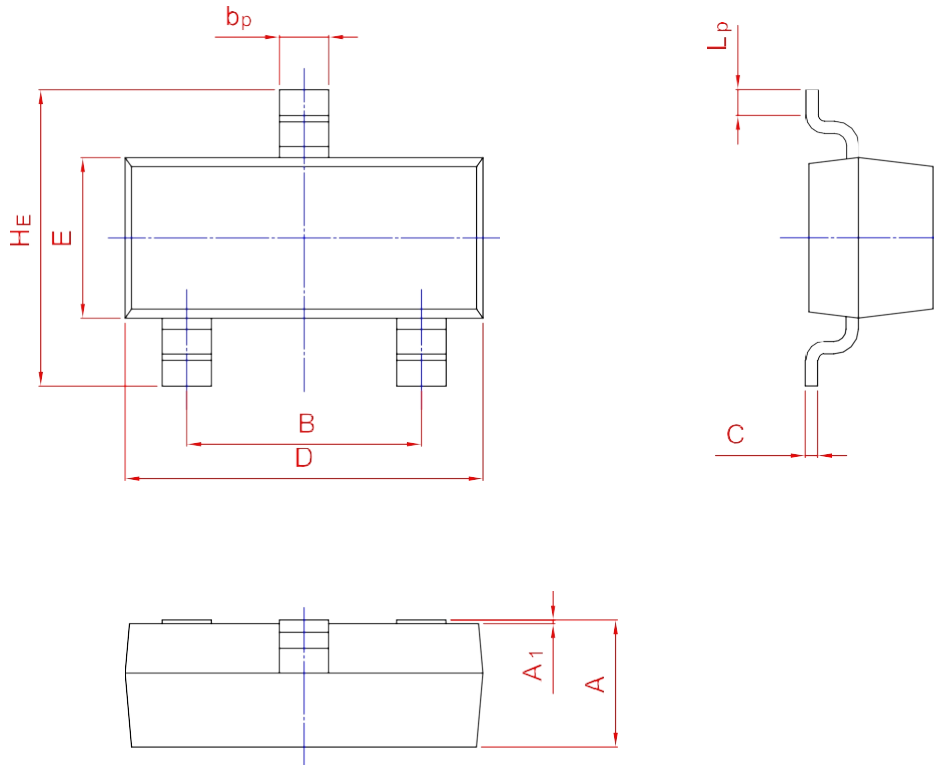
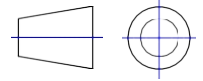
Characteristics at $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|--|----------------|-------------|-------------|-----------------|--------------------------------------|
| Drain-Source Breakdown Voltage at $-I_D = 10\text{ }\mu\text{A}$ | $-V_{(BR)DSS}$ | 50 | - | - | V |
| Gate-Source Threshold Voltage at $V_{DS} = V_{GS}$, $-I_D = 1\text{ mA}$ | $-V_{GSth}$ | 0.8 | - | 2 | V |
| Drain-Source Leakage Current at $-V_{DS} = 40\text{ V}$ at $-V_{DS} = 50\text{ V}$ at $-V_{DS} = 50\text{ V}$, $T_j = 125\text{ }^\circ\text{C}$ | $-I_{DSS}$ | - - - | - - - | 100 10 60 | nA μA μA |
| Gate Leakage Current at $V_{GS} = \pm 20\text{ V}$ | I_{GSS} | - | - | ± 10 | nA |
| Drain-Source On-State Resistance at $-V_{GS} = 10\text{ V}$, $-I_D = 130\text{ mA}$ | R_{DSon} | - | - | 10 | Ω |
| Forward Transfer admittance at $-V_{DS} = 25\text{ V}$, $-I_D = 130\text{ mA}$ | $ y_{fs} $ | 50 | - | - | mS |
| Input Capacitance at $-V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$ | C_{iss} | - | - | 45 | pF |
| Output Capacitance at $-V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$ | C_{oss} | - | - | 25 | pF |
| Reverse Transfer Capacitance at $-V_{DS} = 25\text{ V}$, $f = 1\text{ MHz}$ | C_{rss} | - | - | 12 | pF |
| Turn-On Time at $V_{GS} = 0\text{ to }-10\text{ V}$, $-V_{DD} = 40\text{ V}$, $-I_D = 200\text{ mA}$ | t_{on} | - | 3 | - | ns |
| Turn-Off Time at $V_{GS} = -10\text{ to }0\text{ V}$, $-V_{DD} = 40\text{ V}$, $-I_D = 200\text{ mA}$ | t_{off} | - | 7 | - | ns |

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



| UNIT | A | B | b_p | C | D | E | H_E | A_1 | L_p |
|------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|--------------|
| mm | 1.40 0.95 | 2.04 1.78 | 0.50 0.35 | 0.19 0.08 | 3.10 2.70 | 1.65 1.20 | 3.00 2.20 | 0.100 0.013 | 0.50 0.20 |