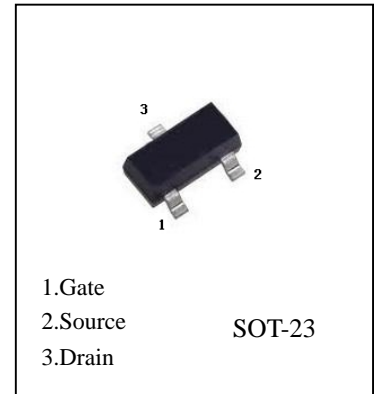


**FEATURES**

- Lower on-resistance
- Reliable and Rugged

**HOA2307**
**P-Channel MOSFET**


Absolute Maximum Ratings (TA=25°C, unless otherwise noted)

| Parameter  | Symbol                            | Ratings     | Unit |
|--|-----------------------------------|-------------|------|
| Drain-Source Voltage                                 | V <sub>DS</sub>                   | -30         | V    |
| Gate-source Voltage                                  | V <sub>GS</sub>                   | ±20         | V    |
| Drain Current (Continuous) <sup>a</sup>              | I <sub>D</sub>                    | -2.7        | A    |
| Total Power Dissipation @TA=25°C <sup>b</sup>        | P <sub>D</sub>                    | 1.1         | W    |
| Operating Junction and Storage Temperature Range     | T <sub>j</sub> , T <sub>stg</sub> | -55 to +150 | °C   |
| Thermal Resistance Junction to Ambient (PCB mounted) | R <sub>JA</sub>                   | 114         | °C/W |

Electrical Characteristics (TA=25°C, unless otherwise noted)

| Parameter                                     | Symbol               | Test Condition   | Min | Typ   | Max   | Unit |
|---|----------------------|--|-----|-------|-------|------|
| <b>Static</b>                                 |                      |  |     |       |       |      |
| Drain-Source Breakdown Voltage                | V <sub>(BR)DSS</sub> | V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA                              | -30 |       |       | V    |
| Gate-Source Threshold Voltage                 | V <sub>GS(th)</sub>  | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA                | -1  |       | -3    |      |
| Gate-Source Leakage                           | I <sub>GSS</sub>     | V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V                               |     |       | ±100  | nA   |
| Zero Gate Voltage Drain Current               | I <sub>DSS</sub>     | V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V                               |     |       | -1    | μA   |
|   |                      | V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 55°C        |     |       | -10   |      |
| Drain-Source On-State Resistance <sup>c</sup> | R <sub>DS(on)</sub>  | V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -2.5A                            |     | 0.110 | 0.138 | Ω    |
|   |                      | V <sub>GS</sub> = -10V, I <sub>D</sub> = -3.5A                             |     | 0.073 | 0.088 |      |
| Forward Transconductance <sup>c</sup>         | g <sub>fs</sub>      | V <sub>DS</sub> = -10V, I <sub>D</sub> = -3.5A                             |     | 7     |       | S    |
| <b>Dynamic<sup>d</sup></b>                    |                      |  |     |       |       |      |
| Input Capacitance                             | C <sub>iss</sub>     | V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1MHz                     |     | 340   |       | pF   |
| Output Capacitance                            | C <sub>oss</sub>     |  |     | 67    |       |      |
| Reverse Transfer Capacitance                  | C <sub>rss</sub>     |  |     | 51    |       |      |
| Total Gate Charge                             | Q <sub>g</sub>       | V <sub>DS</sub> = -15V, V <sub>GS</sub> = -4.5V,<br>I <sub>D</sub> = -2.5A |     | 4.1   | 6.2   | nC   |
| Gate-Source Charge                            | Q <sub>gs</sub>      |  |     | 1.3   |       |      |
| Gate-Drain Charge                             | Q <sub>gd</sub>      |  |     | 1.8   |       |      |
| Gate Resistance                               | R <sub>g</sub>       | f = 1MHz   |     | 10    |       | Ω    |

## HOA2307

|  |              |   |  |      |      |    |
|--|--------------|---|--|------|------|----|
| Turn-On Delay Time                             | $t_{d(on)}$  | $V_{DD}=-15V,$<br>$R_L=15\Omega, I_D =-1A,$<br>$V_{GEN}=-4.5V, R_g=1\Omega$ |  | 40   | 60   | ns |
| Rise Time                                      | $t_r$        |   |  | 40   | 60   |    |
| Turn-Off Delay Time                            | $t_{d(off)}$ |   |  | 20   | 40   |    |
| Fall Time                                      | $t_f$        |   |  | 17   | 30   |    |
| <b>Drain-source Body diode characteristics</b> |              |   |  |      |      |    |
| Body Diode Voltage                             | $V_{SD}$     | $I_S=-0.75A, V_{GS}=0$  |  | -0.8 | -1.2 | V  |

**Notes:**

- $t=5s$ .
- Surface mounted on 1" × 1" FR4 board.
- Pulse Test : Pulse Width < 300 $\mu$ s, Duty Cycle  $\leq$ 2%.
- Guaranteed by design, not subject to production testing.

## HOA2307 Typical Characteristics

