

## SOT-23-3 Plastic-Encapsulate Transistors

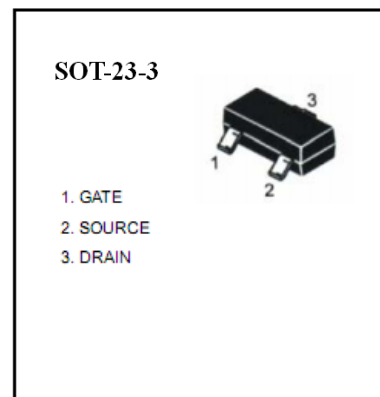
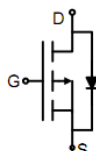
3407 MOSFET(P-Channel)

## FEATURES

High Power and current handing capability

Lead free product is acquired

Surface Mout Package



## MAXIMUM RATINGS (TA=25°C unless otherwise noted)

| Symbol           | Parameter            | Value   | Units |
|------------------|----------------------|---------|-------|
| V <sub>DS</sub>  | Drain-Source voltage | -30     | V     |
| V <sub>GS</sub>  | Gate-Source voltage  | ± 20    | V     |
| I <sub>D</sub>   | Drain current        | -4.1    | A     |
| P <sub>D</sub>   | Power Dissipation    | 1.4     | W     |
| T <sub>j</sub>   | Junction Temperature | -55-150 | °C    |
| T <sub>stg</sub> | Storage Temperature  | -55-150 | °C    |

ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise specified)

| Parameter                          | Symbol               | Test conditions                                                    | MIN  | TYP  | MAX   | UNIT |
|------------------------------------|----------------------|--------------------------------------------------------------------|------|------|-------|------|
| Drain-Source Breakdown Voltage     | V <sub>(BR)DSS</sub> | V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA                        | -30  |      |       | V    |
| Gate-Threshold Voltage             | V <sub>th(GS)</sub>  | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =-250 uA        | -1.0 | -1.5 | -3.0  | V    |
| Gate-body 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> =-24V, V <sub>GS</sub> =0V                         |      |      | -1    | uA   |
| Drain-Source On-Resistance         | R <sub>DS(ON)</sub>  | V <sub>GS</sub> =-10V, I <sub>D</sub> =-4.1A                       |      | 55   | 65    | m Ω  |
|                                    |                      | V <sub>GS</sub> =-4. 5V, I <sub>D</sub> =-4A                       |      | 75   | 95    | m Ω  |
| Forward Trans conductance          | g <sub>fs</sub>      | V <sub>DS</sub> =-5V, I <sub>D</sub> =-4.1A                        | 5.5  |      |       | s    |
| Dynamic Characteristics            |                      |                                                                    |      |      |       |      |
| Input Capacitance                  | C <sub>iSS</sub>     | V <sub>DS</sub> =-15V, V <sub>GS</sub> =0V, f=1MHz                 |      | 700  |       | pF   |
| Output Capacitance                 | C <sub>oSS</sub>     |                                                                    |      | 120  |       |      |
| Reverse Transfer Capacitance       | C <sub>rSS</sub>     |                                                                    |      | 75   |       |      |
| Switching Capacitance              |                      |                                                                    |      |      |       |      |
| Turn-on Delay Time                 | t <sub>d(on)</sub>   | V <sub>DD</sub> =-15V, V <sub>GS</sub> =-10V R <sub>GEN</sub> =3 Ω |      | 9    |       | nS   |
| Turn-on Rise Time                  | t <sub>r</sub>       |                                                                    |      | 5    |       | nS   |
| Turn-off Delay Time                | t <sub>d(off)</sub>  |                                                                    |      | 28   |       | nS   |
| Turn-off Fall Time                 | t <sub>f</sub>       |                                                                    |      | 13.5 |       | nS   |
| Total Gate Charge                  | Q <sub>g</sub>       | V <sub>DS</sub> =-15V, I <sub>D</sub> =-4A, V <sub>GS</sub> =-10V, |      | 14   |       | nC   |
| Gate-Source Charge                 | Q <sub>gs</sub>      |                                                                    |      | 3.1  |       | nC   |
| Gate-Drain Charge                  | Q <sub>gd</sub>      |                                                                    |      | 3    |       | nC   |
| Drain-Source Diode Characteristics |                      |                                                                    |      |      |       |      |
| Diode Forward Voltage              | V <sub>SD</sub>      | V <sub>GS</sub> =0V, I <sub>D</sub> =-1A                           |      |      | -1.2  | V    |

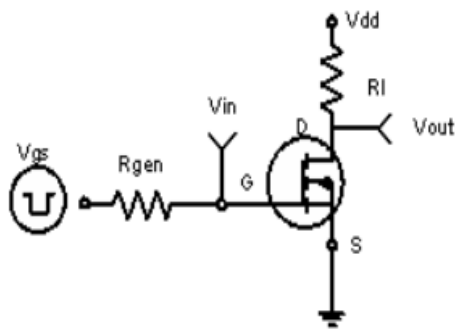


Figure 1: Switching Test Circuit

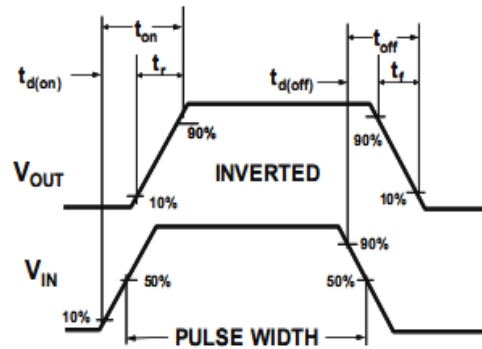


Figure 2: Switching Waveforms

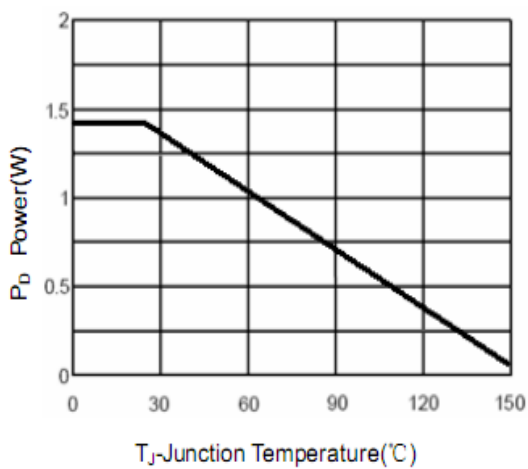


Figure 3 Power Dissipation

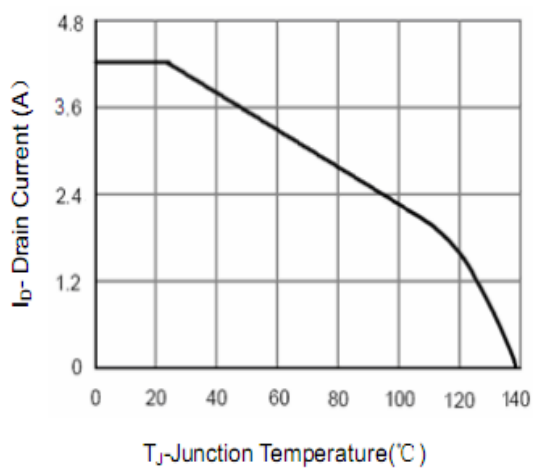


Figure 4 Drain Current

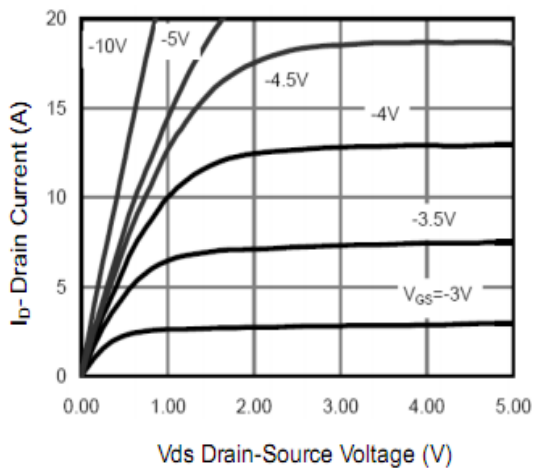


Figure 5 Output CHARACTERISTICS

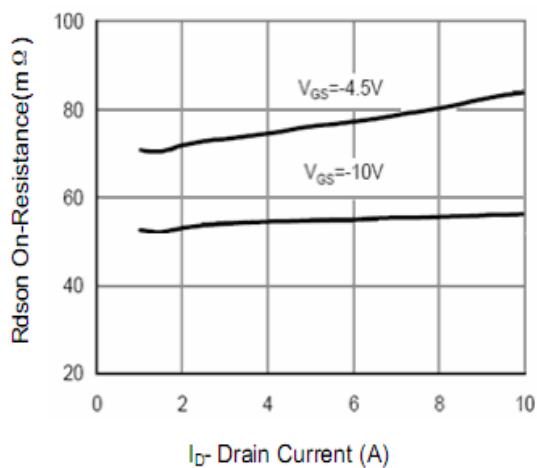


Figure 6 Drain-Source On-Resistance