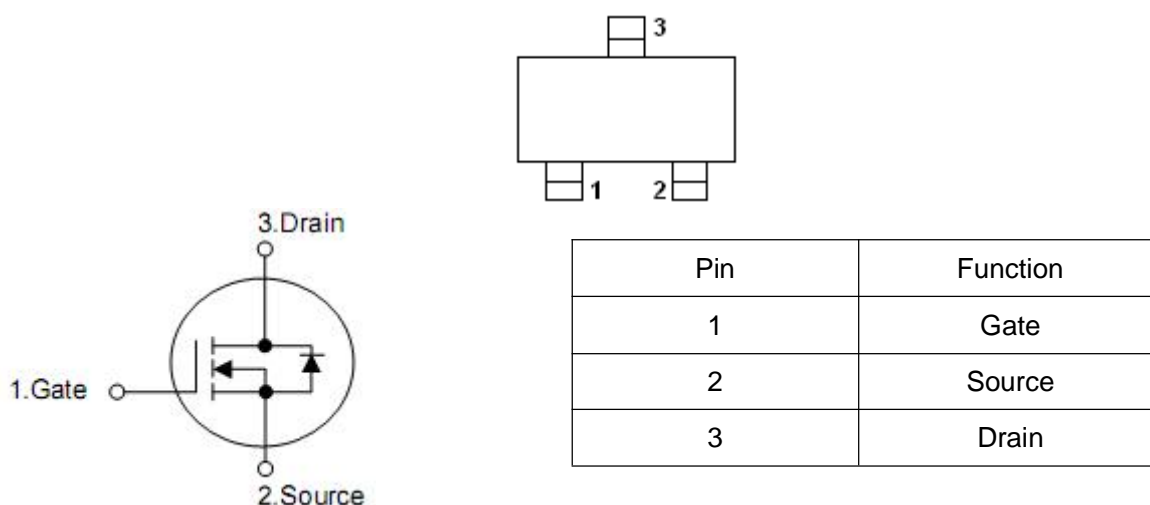


1. Features

- n $V_{DS}=30V, R_{DS(on)}=0.057\Omega @ V_{GS}=10V, I_D=3.5A$
- n $V_{DS}=30V, R_{DS(on)}=0.094\Omega @ V_{GS}=4.5V, I_D=2.8A$
- n Power MOSFET
- n 100% R_g tested

2. Symbol



3. Absolute maximum ratings

($T_A=25^\circ\text{C}$, unless otherwise noted)

| Parameter | Symbol | Rating | Units |
|--|----------------|------------------------|------------------|
| Drain-source voltage | V_{DS} | 30 | V |
| Gate-source voltage | V_{GS} | ± 20 | V |
| Drain current continuous ($T_J=150^\circ\text{C}$) ^{a, b} | I_D | $T_A=25^\circ\text{C}$ | 3.5 |
| | | $T_A=70^\circ\text{C}$ | 2.8 |
| Pulsed drain current ^a | I_{DM} | 16 | A |
| Continuous source current (diode conduction) ^{a, b} | I_S | 1.25 | |
| Power dissipation ^{a, b} | P_D | $T_A=25^\circ\text{C}$ | 1.25 |
| | | $T_A=70^\circ\text{C}$ | 0.8 |
| Junction and storage temperature range | T_J, T_{STG} | -55 to 150 | $^\circ\text{C}$ |

| Parameter | Symbol | Typ | Max | Units |
|---------------------------------------|------------|-----|-----|--------------------|
| Maximum junction-ambient ^a | R_{thJA} | - | 100 | $^\circ\text{C/W}$ |
| | | 130 | - | |

Notes

- a. Surface mounted on FR4 board,
- b. $t \leq 5$ sec.

4. Electrical characteristics

(T_A=25°C, unless otherwise noted)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Units |
|--|----------------------|--|-----|------|-------|-------|
| Static | | | | | | |
| Drain-source breakdown voltage | V _{(BR)DSS} | V _{DS} =0V, I _D =250μA | 30 | - | - | V |
| Gate threshold voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | 1 | - | 1.8 | V |
| Gate- body leakage | I _{GSS} | V _{GS} =±20V, V _{DS} =0V | - | - | ±100 | nA |
| Zero gate voltage drain current | I _{DSS} | V _{DS} =25V, V _{GS} =0V | - | - | 1 | μA |
| On-state drain current ^a | I _{D(on)} | V _{DS} ≥4.5V, V _{GS} =10V | 6 | - | - | A |
| | | V _{DS} ≥4.5V, V _{GS} =4.5V | 4 | - | - | |
| Static drain-source on-resistance ^a | R _{DS(on)} | V _{GS} =10V, I _D =3.5A | - | - | 0.057 | Ω |
| | | V _{GS} =4.5V, I _D =2.8A | - | - | 0.094 | |
| Forward transconductance ^a | g _{fs} | V _{DS} =4.5V, I _D =-3.5A | - | 6.9 | - | S |
| Diode forward voltage | V _{SD} | V _{GS} =0V, I _S =1.25A | - | 0.8 | 1.2 | V |
| Dynamic^b | | | | | | |
| Total gate charge | Q _g | V _{DS} =15V, V _{GS} =5V, I _D =3.5A | - | 4.2 | 7 | nC |
| Total gate charge | Q _{gt} | V _{DS} =15V, V _{GS} =10V I _D =3.5A | - | 8.5 | 20 | |
| Gate-source charge | Q _{gs} | | - | 1.9 | - | |
| Gate-drain charge | Q _{gd} | | - | 1.35 | - | |
| Gate resistance | R _G | | 0.5 | - | 2.4 | Ω |
| Input capacitance | C _{iss} | V _{DS} =15V, V _{GS} =0V, f=1MHz | - | 555 | - | pF |
| Output capacitance | C _{oss} | | - | 120 | - | |
| Reverse transfer capacitance | C _{rss} | | - | 60 | - | |
| Switching | | | | | | |
| Turn-on delay time | t _{d(on)} | V _{DD} =15V, I _D =1A, R _L =15Ω, R _G =6Ω, V _{GEN} =10V | - | 9 | 20 | ns |
| Rise time | t _r | | - | 7.5 | 18 | |
| Turn-off delay time | t _{d(off)} | | - | 17 | 35 | |
| Fall time | t _f | | - | 5.2 | 12 | |

Notes

- a. Guaranteed by design, not subject to production testing.
- b. Pulse test; pulse width ≤ 300μs, duty cycle ≤ 2%.

5. Test circuits and waveforms

