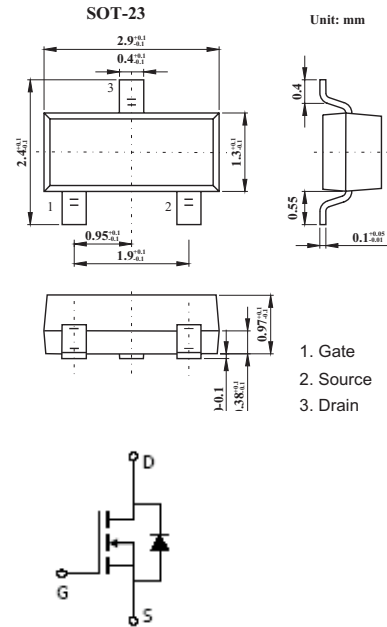


N-Channel Enhancement Mode Field Effect Transistor

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 5.8 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 28m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 33m\Omega (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 52m\Omega (V_{GS} = 2.5V)$



■ Absolute Maximum Ratings $T_a = 25^\circ C$


| Parameter | Symbol | Rating | Unit |
|---|----------------|------------------|--------------|
| Drain-Source Voltage | V_{DS} | 30 | V |
| Gate-Source Voltage | V_{GS} | ± 12 | V |
| Continuous Drain Current | I_D | $T_A=25^\circ C$ | 5.8 |
| | | $T_A=70^\circ C$ | |
| Pulsed Drain Current * | I_{DM} | 30 | A |
| Power Dissipation | P_D | $T_A=25^\circ C$ | 1.4 |
| | | $T_A=70^\circ C$ | |
| Thermal Resistance.Junction- to-Ambient | R_{thJA} | 85 | $^\circ C/W$ |
| Thermal Resistance.Junction- to-Case | R_{thc} | 43 | $^\circ C/W$ |
| Junction and Storage Temperature Range | T_J, T_{STG} | -55 to 150 | $^\circ C$ |

* Repetitive rating, pulse width limited by junction temperature.

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit |
|---------------------------------------|---------------------|--|-----|------|-------|------|
| Drain-Source Breakdown Voltage | V _{DSS} | I _D =250 μ A, V _{GS} =0V | 30 | | | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{Ds} =24V, V _{GS} =0V | | | 1 | μ A |
| | | V _{Ds} =24V, V _{GS} =0V, T _J =55°C | | | 5 | |
| Gate-Body leakage current | I _{GSS} | V _{Ds} =0V, V _{GS} =± 12V | | | ± 100 | nA |
| Gate Threshold Voltage | V _{GS(th)} | V _{Ds} =V _{GS} I _D =250 μ A | 0.7 | 1.1 | 1.4 | V |
| Static Drain-Source On-Resistance | R _{DS(on)} | V _{GS} =10V, I _D =5.8A | | 22.8 | 28 | m Ω |
| | | V _{GS} =10V, I _D =5.8A T _J =125°C | | 32 | 39 | |
| | | V _{GS} =4.5V, I _D =5A | | 27.3 | 33 | m Ω |
| | | V _{GS} =2.5V, I _D =4A | | 43.3 | 52 | m Ω |
| On state drain current | I _{D(on)} | V _{GS} =4.5V, V _{Ds} =5V | 30 | | | A |
| Forward Transconductance | g _{FS} | V _{Ds} =5V, I _D =5A | 10 | 15 | | S |
| Input Capacitance | C _{iss} | V _{GS} =0V, V _{Ds} =15V, f=1MHz | | 823 | 1050 | pF |
| Output Capacitance | C _{oss} | | | 99 | | pF |
| Reverse Transfer Capacitance | C _{rss} | | | 77 | | pF |
| Gate resistance | R _g | V _{GS} =0V, V _{Ds} =0V, f=1MHz | | 1.4 | 2 | Ω |
| Total Gate Charge | Q _g | V _{GS} =4.5V, V _{Ds} =15V, I _D =5.8A | | 9.7 | 12 | nC |
| Gate Source Charge | Q _{gs} | | | 1.6 | | nC |
| Gate Drain Charge | Q _{gd} | | | 3.1 | | nC |
| Turn-On DelayTime | t _{D(on)} | V _{GS} =10V, V _{Ds} =15V, R _L =2.7 Ω, R _{GEN} =3 Ω | | 3.3 | 5 | ns |
| Turn-On Rise Time | t _r | | | 4.8 | 7 | ns |
| Turn-Off DelayTime | t _{D(off)} | | | 26.3 | 40 | ns |
| Turn-Off Fall Time | t _f | | | 4.1 | 6 | ns |
| Body Diode Reverse Recovery Time | t _{rr} | I _F =5A, di/dt=100A/ μ s | | 16 | 20 | ns |
| Body Diode Reverse Recovery Charge | Q _{rr} | I _F =5A, di/dt=100A/ μ s | | 8.9 | 12 | nC |
| Maximum Body-Diode Continuous Current | I _S | | | | 2.5 | A |
| Pulsed Body-Diode Current * | I _{SM} | | | | 30 | A |
| Diode Forward Voltage | V _{SD} | I _S =1A, V _{GS} =0V | | 0.71 | 1 | V |

* Repetitive rating, pulse width limited by junction temperature.

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