

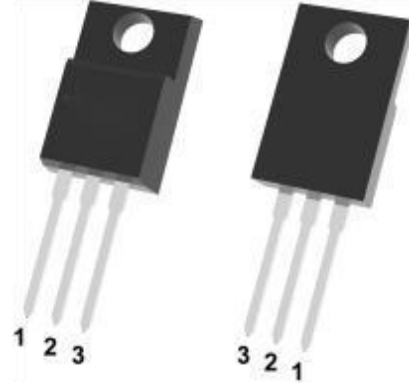
24A 500V N Channel MOSFET

Features

- $V_{DS} = 500V$ $I_D = 24A$
- $R_{DS(ON)}@10V \leq 0.25\Omega$ (Typ. 0.17Ω)
- $R_{DS(ON)}@6V \leq 0.3\Omega$ (Typ. $0.18m\Omega$)

Applications

- Designed for high voltage.
- High speed power switching applications such as high efficiency switched mode power supplies.
- Active power factor correction.

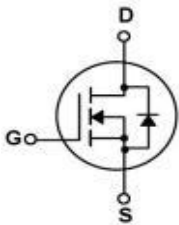


PIN1: G PIN 2: D PIN 3: S

Descriptions

N-Channel MOSFET in a TO-220FL Plastic Package.

Equivalent Circuit



Marking

See Marking Instructions

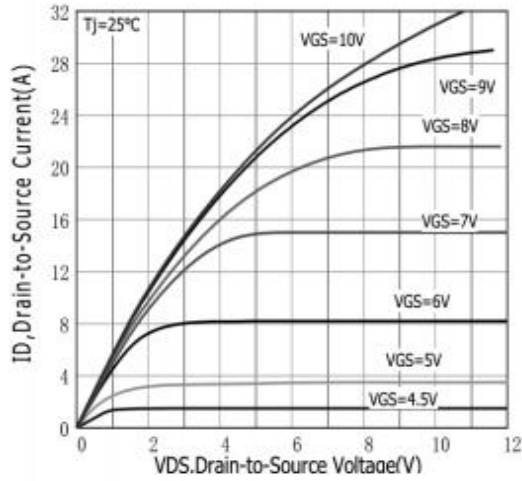
Absolute Maximum Ratings(Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|-----------------------------------|--------------------------|---------|------|
| Drain-to-Source Breakdown Voltage | V _{DSS} | 500 | V |
| Continuous Drain Current | I _D (Tc=25°C) | 24 | A |
| Drain Current Pulsed | I _{DM} | 90 | A |
| Gate-to-Source Voltage | V _{GS} | ±30 | V |
| Avalanche Current | I _{AS} | 21 | A |
| Single Pulse Avalanche Energy | E _{AS} | 1960 | mJ |
| Power Dissipation | P _D (Tc=25°C) | 50 | W |
| Junction Temperature Range | T _j | 150 | °C |
| Storage Temperature Range | T _{stg} | -55~150 | °C |
| Thermal Resistance Junction-Case | R _{θJC} | 2.5 | °C/W |

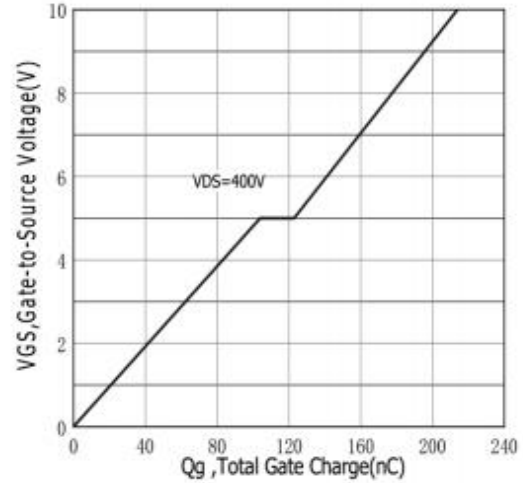
Electrical Characteristics(Ta=25°C)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------------|---|-----|-------|------|------|
| Drain-to-Source Breakdown Voltage | V _{DSS} | V _{GS} =0V I _D =250μA | 500 | 550 | | V |
| Drain-to-Source Leakage Current | I _{DSS} | V _{DS} =500V V _{GS} =0V | | | 1.0 | μA |
| Gate-to-Source Forward Leakage | I _{GSS} | V _{GS} =±30V V _{DS} =0V | | | ±100 | nA |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} I _D =250μA | 2.0 | | 4.0 | V |
| Static Drain-to-Source On-Resistance | R _{DS(on)} | V _{GS} =10V I _D =12A | | 0.17 | 0.25 | Ω |
| Static Drain-to-Source On-Resistance | R _{DS(on)} | V _{GS} =6V I _D =6A | | 0.18 | 0.3 | Ω |
| Diode Forward Voltage | V _{SD} | V _{GS} =0V I _{SD} =24A | | | 1.4 | V |
| Input Capacitance | C _{iss} | V _{DS} =25V V _{GS} =0V f=1.0MHz | | 4364 | | pF |
| Output Capacitance | C _{oss} | | | 311 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 138 | | |
| Turn-On Delay Time | t _{d(on)} | V _{DD} =250V I _D =24A R _G =10Ω | | 28.8 | | ns |
| Rise Time | t _r | | | 5.6 | | |
| Turn-Off Delay Time | t _{d(off)} | | | 106.4 | | |
| Fall Time | t _f | | | 9.6 | | |
| Total Gate Charge | Q _g | V _{DS} =400V I _D =24A V _{GS} =10V | | 214 | | nC |
| Gate-Source Charge | Q _{gs} | | | 104 | | |
| Gate-Drain Charge | Q _{gd} | | | 19 | | |

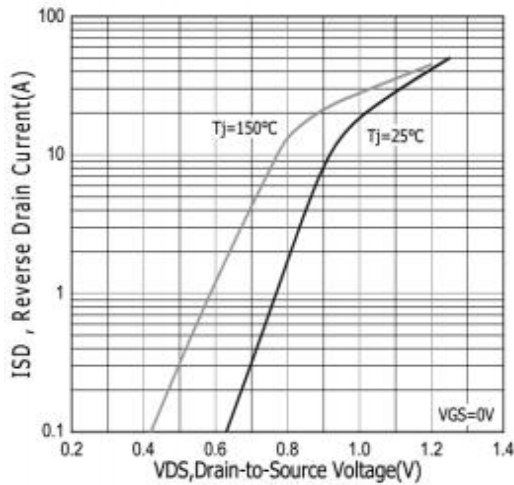
Electrical Characteristic Curve



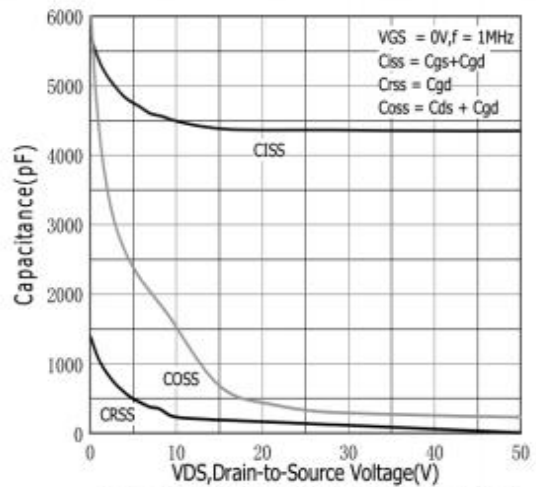
1. Typical Output Characteristics



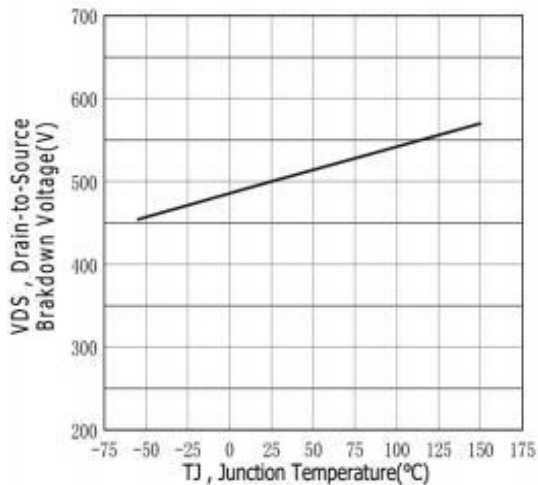
2. Typical Gate Charge vs Gate to Source Voltage



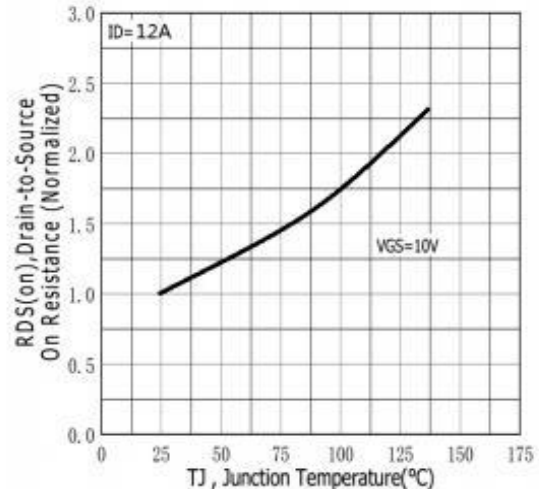
3. Typical Body Diode Transfer Characteristics



4. Typical Capacitance vs Drain to Source Voltage

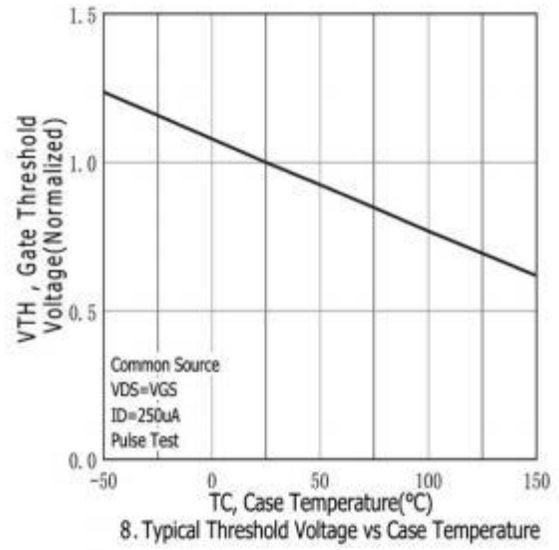
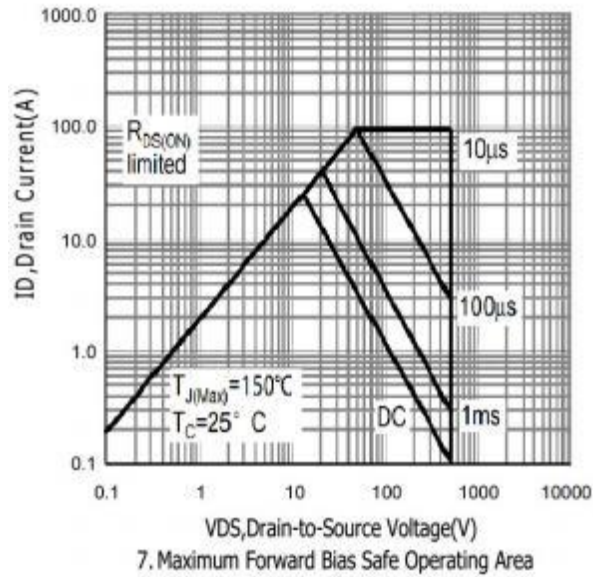


5. Typical Breakdown Voltage vs Junction Temperature

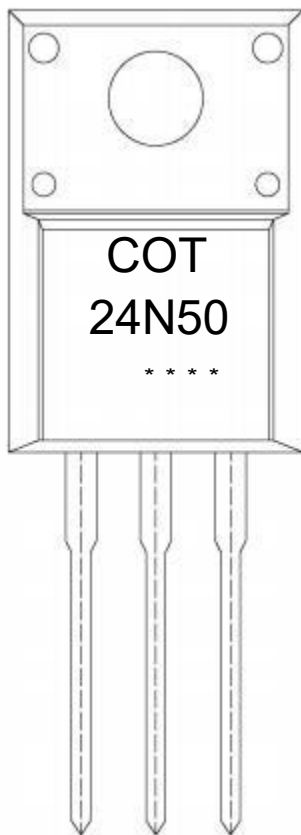


6. Typical Drain to Source on Resistance vs Junction Temperature

Electrical Characteristic Curve



Marking Instructions



Note:

COT: Company Code

24N50: Product Type.

****: Lot No. Code, code change with Lot No.

Packaging SPEC.

TUBE INFORMATION

| Package Type | Units | | | | | Dimension (unit: mm ³) | | |
|--------------|------------|-----------------|-----------------|-----------------------|-----------------|------------------------------------|------------|-------------|
| | Units/Tube | Tubes/Inner Box | Units/Inner Box | Inner Boxes/Outer Box | Units/Outer Box | Tube | Inner Box | Outer Box |
| TO-220FL | 50 | 20 | 1,000 | 5 | 5,000 | 532×33×7.0 | 555×164×50 | 575×290×180 |

Package Outline Dimensions

TO-220FL

单位: mm

