

DESCRIPTION

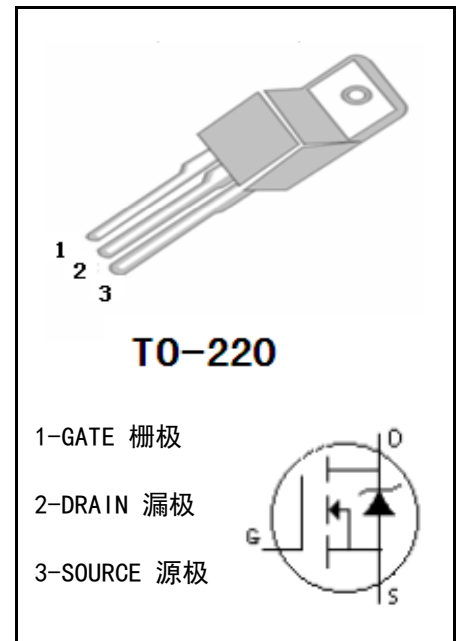
- ELECTRONIC BALLAST
- ELECTRONIC TRANSFORMER
- SWITCH MODE POWER SUPPLY

FEATURES:

- LOW THERMAL RESISTANCE
- HIGH INPUT RESISTANCE
- FAST SWITCHING
- ROHS COMPLIANT

MAXIMUM RATINGS (T_c=25°C)

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|------------------|---------|------|
| Drain-source Voltage | VDS | 80 | V |
| gate-source Voltage | VGS | ±25 | V |
| Continuous Drain Current (T _C =25°C) | ID | 100 | A |
| Drain Current-Pulsed | IDM | 350 | A |
| Total Dissipation | PD | 200 | W |
| Junction Temperature | T _j | 175 | °C |
| Storage Temperature | T _{stg} | -55-175 | °C |
| Single Pulse Avalanche Energy (L=0.5mH) | EAS | 530 | mJ |

MECHANICAL

ELECTRONIC CHARACTERISTICS (T_c=25°C)

| CHARACTERISTICS | SYMBOL | TEST CONDITION | MIN | MAX | UNIT |
|-------------------------------------|----------|--------------------|-----|------|------|
| Drain-source Breakdown Voltage | BVDSS | VGS=0V, ID=250 μA | 80 | | V |
| Gate Threshold Voltage | VGS (TH) | VGS=VDS, ID=250 μA | 2 | 4 | V |
| Drain-source Leakage Current | IDSS | VDS=80V, VGS=0V | | 1 | μA |
| Drain-Source Diode Forward Voltage | VSD | VGS=0V, IS=30A | | 1.2 | V |
| Gate-body Leakage Current (VDS = 0) | IGSS | VGS=±20V | | ±100 | nA |
| Static Drain-source On Resistance | RDS (ON) | VGS=10V, ID=30A | | 7.5 | mΩ |
| Thermal Resistance Junction-case | RthJ-c | | | 0.75 | °C/W |

■ DYNAMIC CHARACTERISTICS (T_c=25°C)

| CHARACTERISTICS | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|------------------------------|------------------|--|-----|------|------|------|
| Input Capacitance | C _{iss} | V _{gsAcFreq} =1.0MHz, V _{dsDc} =35V | - | 4350 | 5400 | pF |
| output Capacitance | C _{oss} | | - | - | 705 | pF |
| Reverse Transfer Capacitance | C _{rss} | | - | - | 610 | pF |

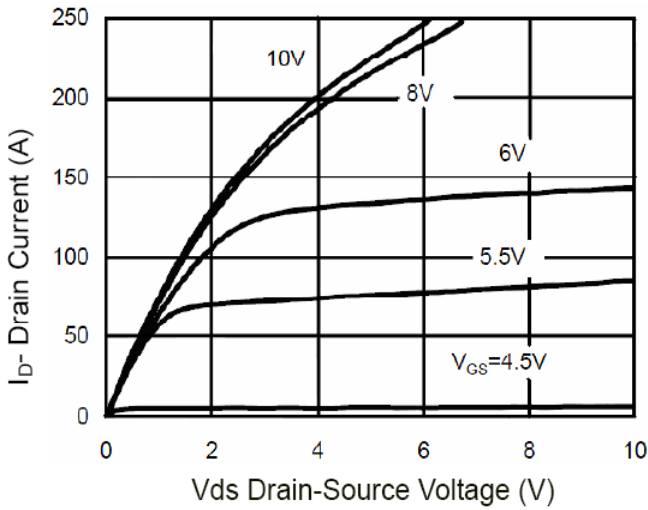
■ SWITCHING CHARACTERISTICS (T_c=25°C)

| CHARACTERISTICS | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|---------------------|---------------------|---|-----|------|-----|------|
| Turn-On Delay Time | t _{d(on)} | V _{DD} =30V, R _L =15Ω V _{GS} =10V, R _G =2.5Ω | - | 17.3 | - | ns |
| Turn-On Rise Time | t _r | | - | 15.2 | - | ns |
| Turn-Off Delay Time | t _{d(off)} | | - | 52 | - | ns |
| Turn-Off Rise Time | t _f | | - | 19 | - | ns |
| Total Gate Charge | Q _g | V _{DS} =30V, I _D =30A, V _{GS} =10V | - | 93.5 | - | nC |
| Gate-Source Charge | Q _{gs} | | - | 20.2 | - | nC |
| Gate-Drain Charge | Q _{gd} | | - | 33.3 | - | nC |

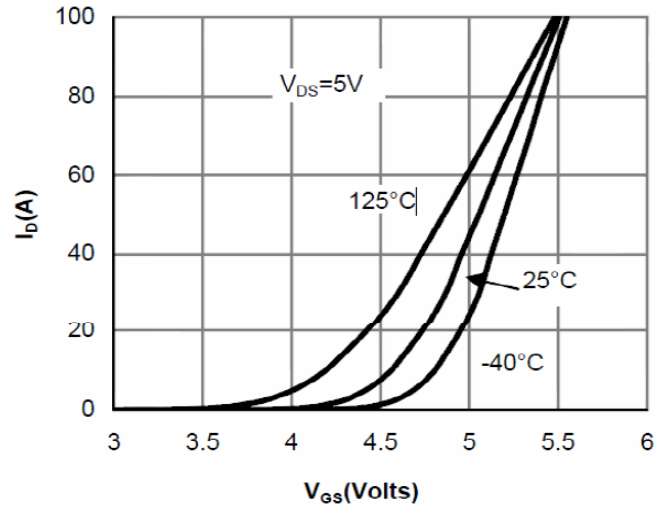
■ DRAIN-SOURCE DIODE MAXIMUM RATINGS AND CHARACTERISTICS (T_c=25°C)

| CHARACTERISTICS | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|-------------------------|-----------------|--|-----|-----|-----|------|
| Diode Forward Voltage | V _{SD} | V _{GS} =0V, I _S =30A | - | - | 1.2 | V |
| Reverse Recovery Time | t _{rr} | V _{GS} =0V, I _S =75A, dI _F /dt=100A/μs | - | 36 | - | ns |
| Reverse Recovery Charge | Q _{rr} | | - | 62 | - | nC |

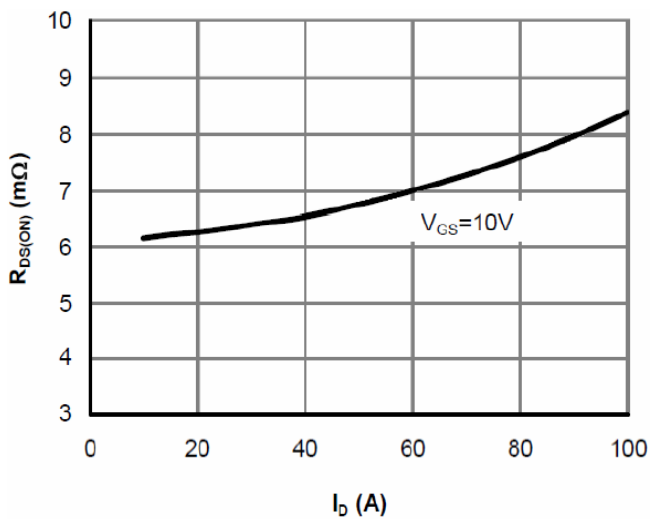
CHARACTERISTICS CURVE



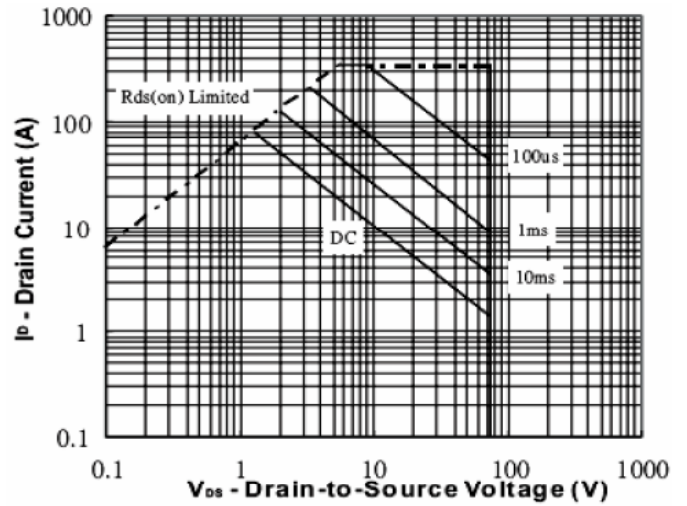
Output Characteristic



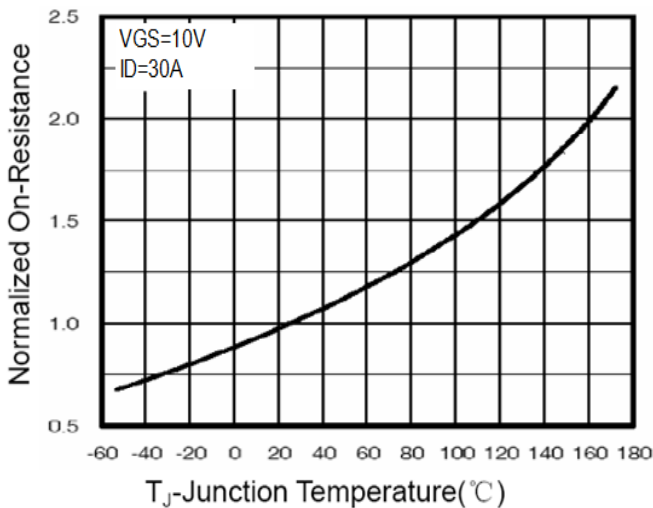
Transfer Characteristic



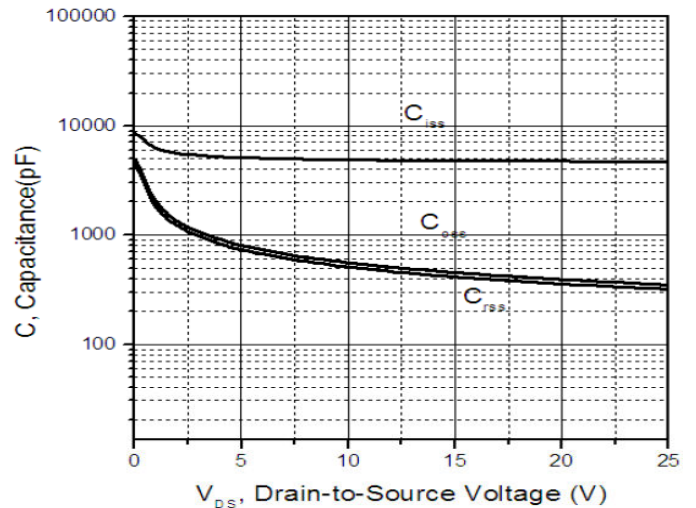
On Resistance Vs Drain Current



Safe operating area

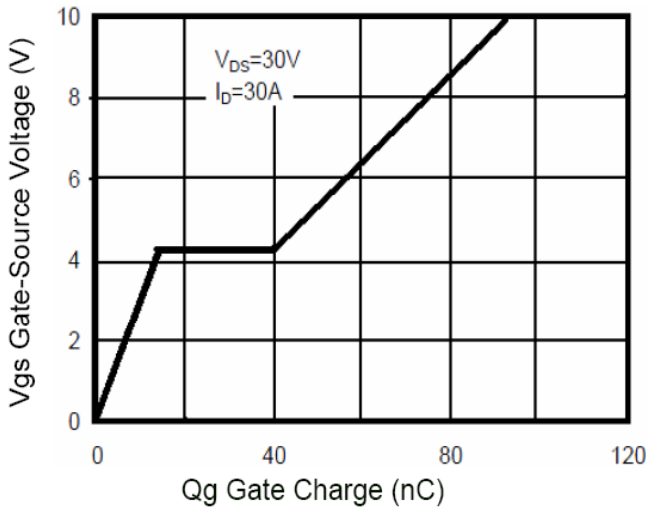


On Resistance Vs Junction Temperature

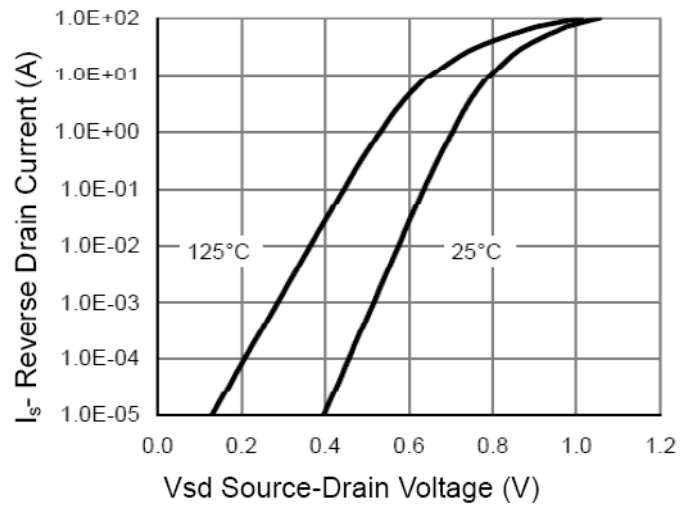


Capacitance

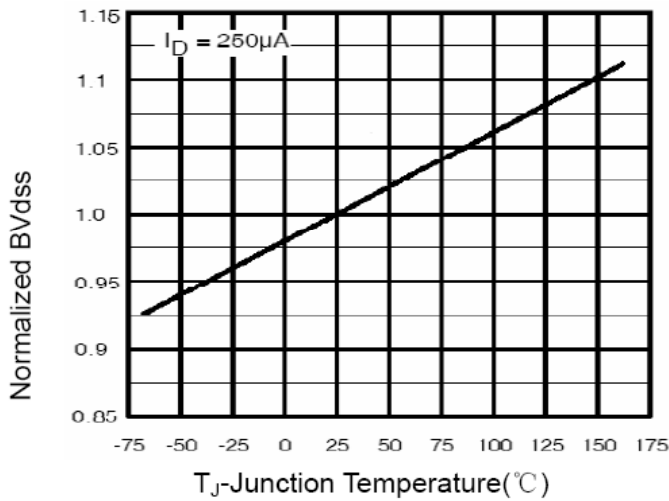
CHARACTERISTICS CURVE



Gate Charge Waveform



Source-Drain Diode Forward Voltage



Breakdown Voltage Vs Junction Temperature



TO-220 MECHANICAL DATA

UNIT: mm

| SYMBOL | MIN | NOM | MAX | SYMBOL | MIN | NOM | MAX |
|--------|------|-----|------|--------|------|------|------|
| A | 4 | | 4.8 | e | 2.44 | 2.54 | 2.64 |
| B | 1.2 | | 1.4 | F | 1.1 | | 1.4 |
| B1 | 1 | | 1.4 | L | 12.5 | | 14.5 |
| b1 | 0.75 | | 0.95 | L1 | 3 | 3.5 | 4 |
| c | 0.4 | | 0.55 | ΦP | 3.7 | 3.8 | 3.9 |
| D | 15 | | 16.5 | Q | 2.5 | | 3 |
| D1 | 5.9 | | 6.9 | Q1 | 2 | | 2.9 |
| E | 9.9 | | 10.7 | | | | |

