

Product Summary

| $V_{(BR)DSS}$ | $R_{DS(on)MAX}$ | I_D |
|---------------|-----------------|-------|
| 900V | $2.5\Omega@10V$ | 5A |

Feature

- Low $R_{DS(ON)}$
- Fast switching
- Low gate charge
- Low Reverse transfer capacitances

Application

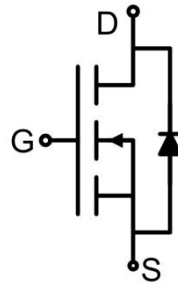
- Power factor correction (PFC)
- Power switching application

Package

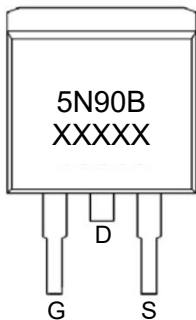


TO-263AB

Circuit Diagram



Marking



Absolute Maximum Ratings (T_C=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|------------------------|------------|------|
| Drain-Source Voltage | V _{DS} | 900 | V |
| Gate-Source Voltage | V _{GS} | ±30 | V |
| Continuous Drain Current | I _D | 5 | A |
| Continuous Drain Current(T _C =100°C) | I _D (100°C) | 3.2 | A |
| Pulsed Drain Current | I _{DM} | 20 | A |
| Power Dissipation | P _D | 156 | W |
| Thermal Resistance,Junction-to-Case | R _{θJC} | 0.8 | °C/W |
| Thermal Resistance from Junction to Ambient | R _{θJA} | 50 | °C/W |
| Single pulse avalanche energy ²⁾ | E _{AS} | 180 | mJ |
| Junction Temperature | T _J | 150 | °C |
| Storage Temperature Range | T _{STG} | -55 ~ +150 | °C |

Electrical Characteristics (T_A=25°C unless otherwise noted)

| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|----------------------|--|------|------|------|------|
| Static Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} = 0V, I _D =250μA | 900 | | | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =900V,V _{GS} = 0V | | | 25 | μA |
| Gate-Body Leakage Current | 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 |
| Drain-Source on-Resistance ¹⁾ | R _{DSON} | V _{GS} =10V, I _D =2.5A | | | 2.5 | Ω |
| Dynamic Characteristics³⁾ | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} =25V,V _{GS} =0V,f =1MHz | | 1156 | | pF |
| Output Capacitance | C _{oss} | | | 90 | | |
| Reverse Transfer Capacitance | C _{rss} | | | 6.4 | | |
| Total Gate Charge | Q _g | V _{DS} =720V,V _{GS} =10V,I _D =5A | | 30 | | nC |
| Gate-Source Charge | Q _{gs} | | | 5 | | |
| Gate-Drain Charge | Q _{gd} | | | 15 | | |
| Turn-on Delay Time | t _{d(on)} | V _{DD} =450V, I _D =5A, R _G =10Ω | | 17 | | nS |
| Turn-on Rise Time | t _r | | | 14 | | |
| Turn-off Delay Time | t _{d(off)} | | | 40 | | |
| Turn-off Fall Time | t _f | | | 19 | | |
| Source-Drain Diode Characteristics | | | | | | |
| Diode Forward voltage ¹⁾ | V _{SD} | V _{GS} =0V, I _{SD} =5A | | | 1.5 | V |
| Reverse Recovery Time | t _{rr} | V _{GS} =0V, I _{SD} =5A, | | 590 | | nS |
| Reverse Recovery Charge | Q _{rr} | di/dt=100A/μs | | 2.6 | | uC |

Notes:

- 1) The data tested by pulsed, pulse width ≤ 300μs, duty cycle ≤ 2%
- 2) The E_{AS} data shows Max. rating. The test condition is V_{DD} = 100V, V_{GS} = 15V, L = 10mH
- 3) Guaranteed by design, not subject to production.

Typical Characteristics

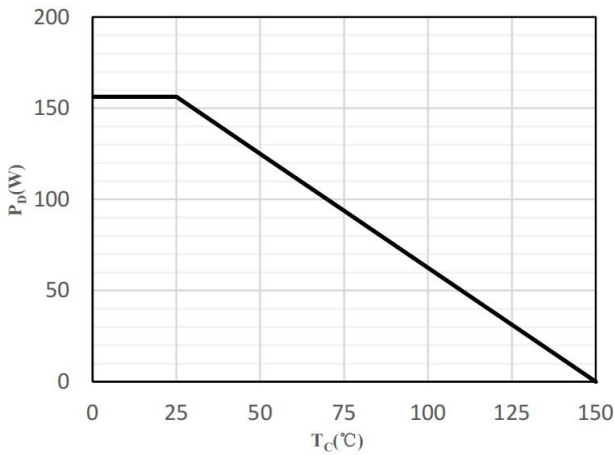


Fig 1 Power Dissipation

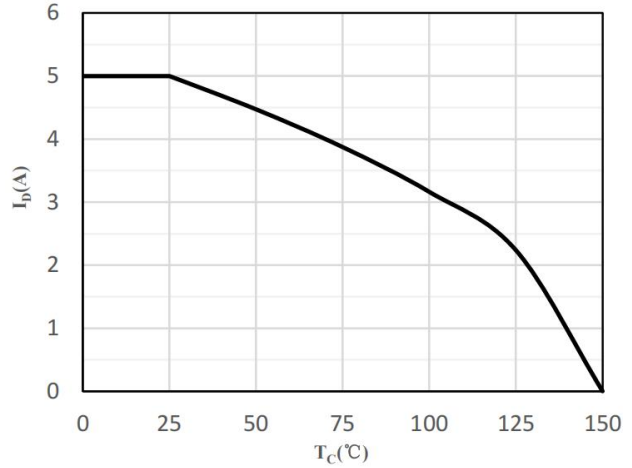


Fig 2 Drain Current

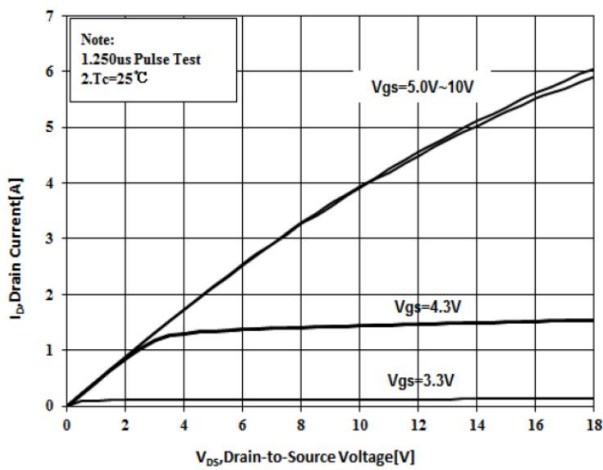


Fig 3 Typical Output Characteristics

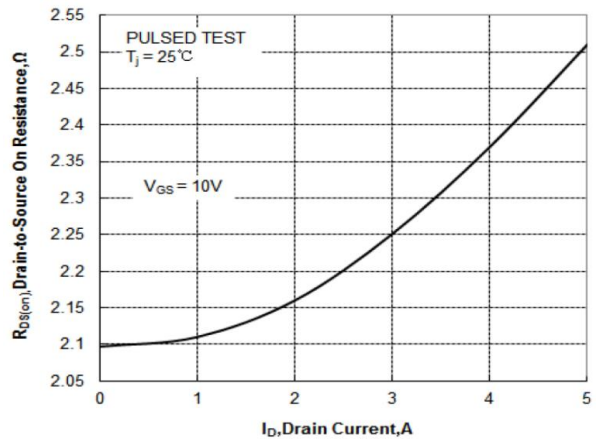


Fig 4 On-Resistance vs. Drain Current and Gate Voltage

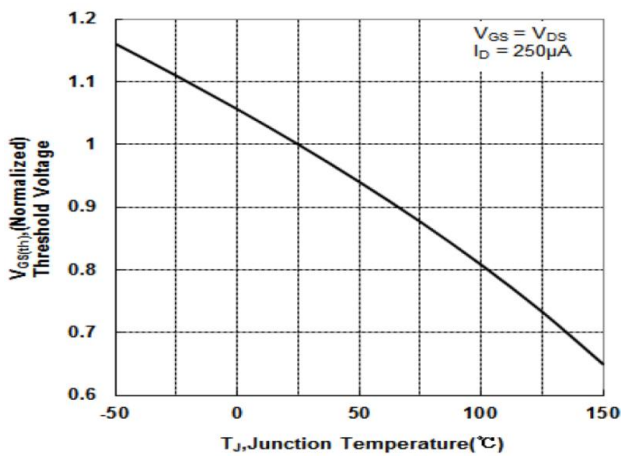


Fig 5 Normalized $V_{GS(th)}$ vs. Junction Temperature

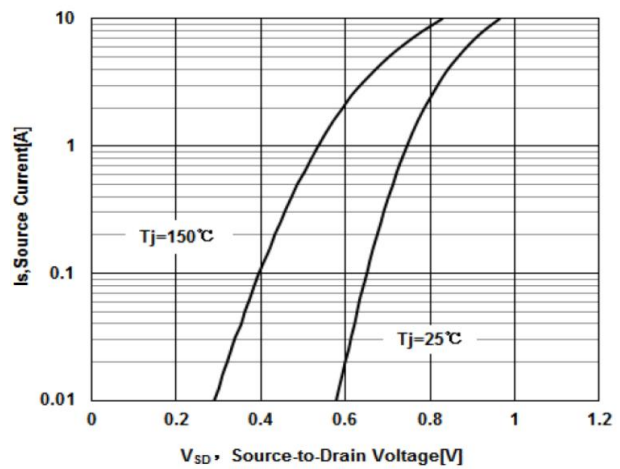


Fig 6 Body-Diode Characteristics

Typical Characteristics

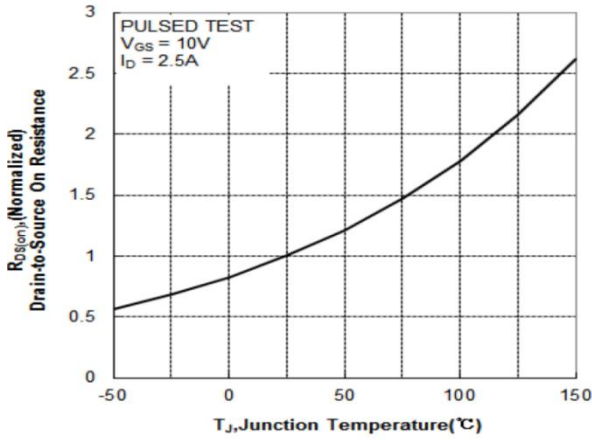


Fig 7 Normalized On-Resistance vs. Junction Temperature

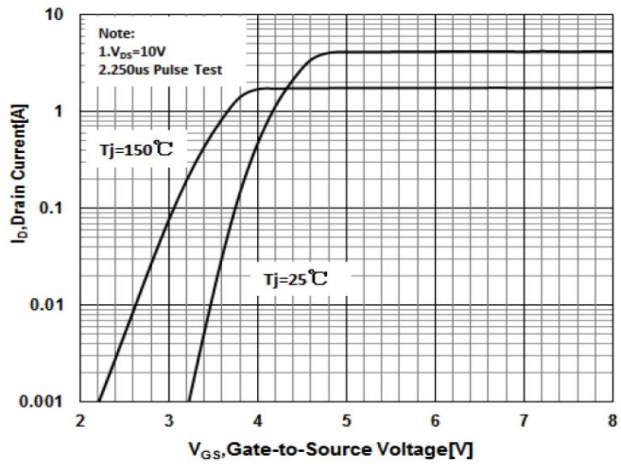


Fig 8 Transfer Characteristics

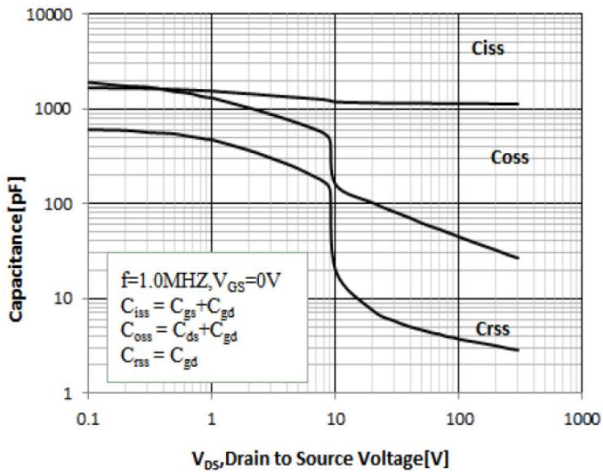


Fig 9 Capacitance Characteristics

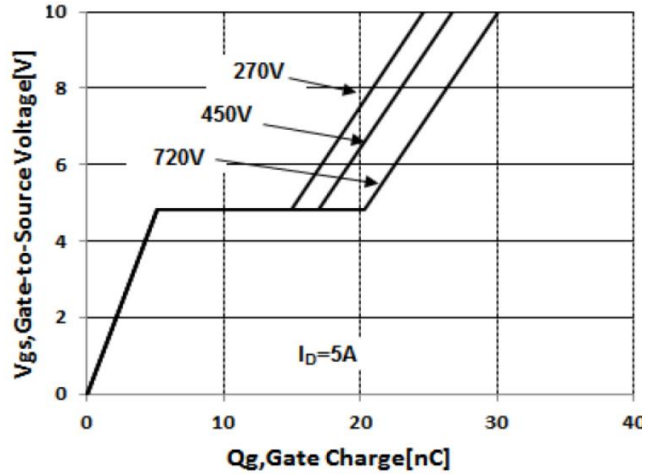


Fig 10 Gate-Charge Characteristics

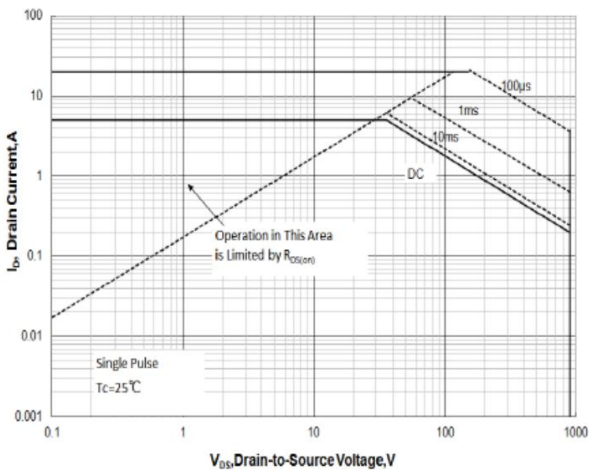
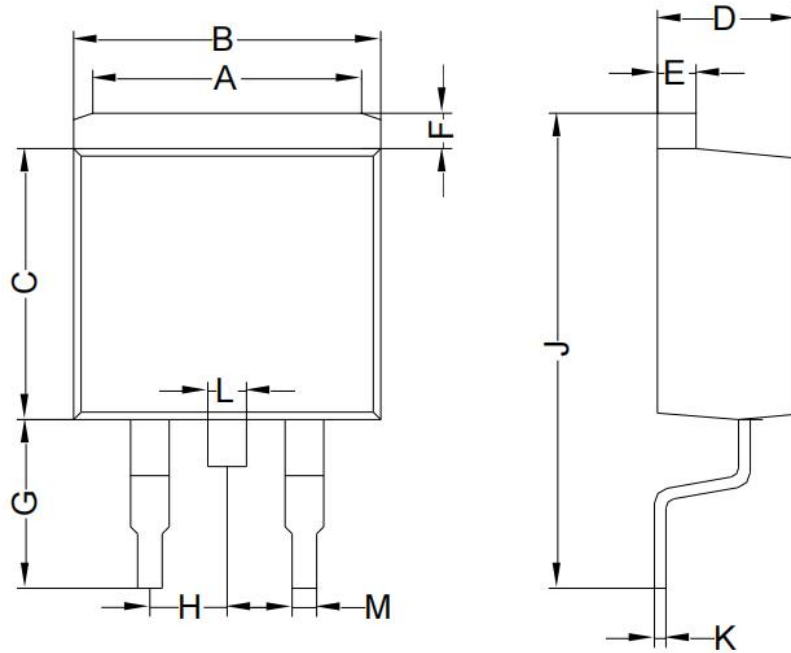


Fig 11 Safe Operation Area

TO-263AB Package Information



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 6.000 | 8.000 | 0.236 | 0.315 |
| B | 9.900 | 10.300 | 0.390 | 0.406 |
| C | 8.500 | 9.100 | 0.335 | 0.358 |
| D | 4.370 | 4.770 | 0.172 | 0.188 |
| E | 1.070 | 1.470 | 0.042 | 0.058 |
| F | 1.070 | 1.470 | 0.042 | 0.058 |
| G | 5.340 | 5.740 | 0.210 | 0.226 |
| H | 2.440 | 2.640 | 0.096 | 0.104 |
| J | 15.300 | 15.900 | 0.602 | 0.626 |
| K | 0.280 | 0.480 | 0.011 | 0.019 |
| L | 1.170 | 1.370 | 0.046 | 0.054 |
| M | 0.710 | 0.910 | 0.028 | 0.036 |