

Product Summary

| $V_{(BR)DSS}$ | $R_{DS(on)TYP}$ | I_D |
|---------------|-----------------|-------|
| 100V | 2.4mΩ@10V | 240A |

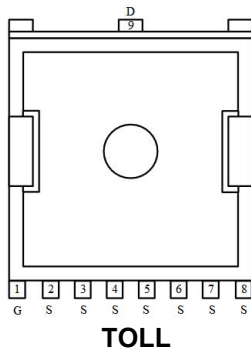
Feature

- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

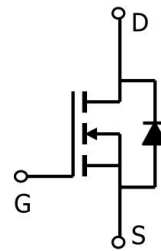
Applications

- Power switching application
- DC-DC Converter
- Power Management

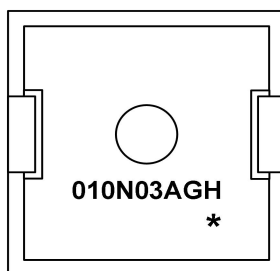
Package



Circuit diagram



Marking



010N03AGH : Product code
* : Month code

Absolute maximum ratings (Ta=25°C, unless otherwise noted)

| Parameter | Symbol | Rating | Unit |
|--|-----------------|------------|------|
| Drain source voltage | V_{DS} | 100 | V |
| Gate source voltage | V_{GS} | ± 20 | V |
| Continuous drain current(Tc=25°C) | I_D | 240 | A |
| Pulsed drain current | I_{DM} | 960 | A |
| Power dissipation(Tc=25°C) | P_D | 360 | W |
| Single pulsed avalanche energy ¹⁾ | E_{AS} | 1850 | mJ |
| Thermal resistance, junction-case | $R_{\theta JC}$ | 0.35 | °C/W |
| Operation and storage temperature | T_{stg}, T_j | -55 to 150 | °C |

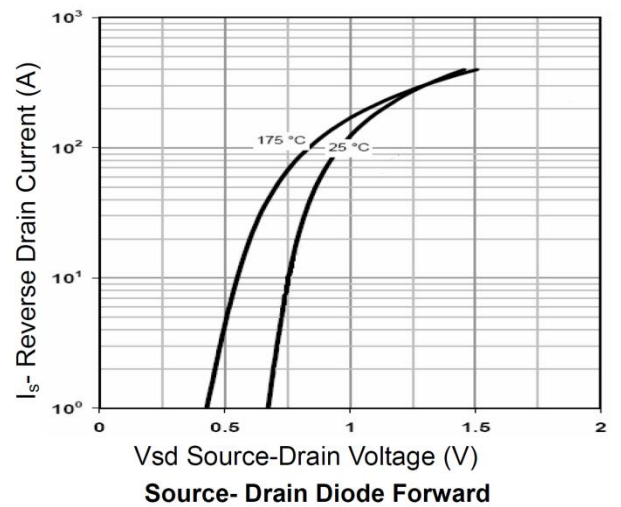
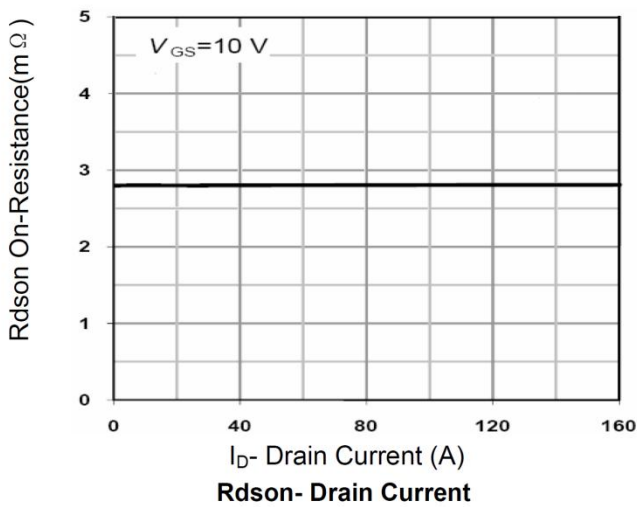
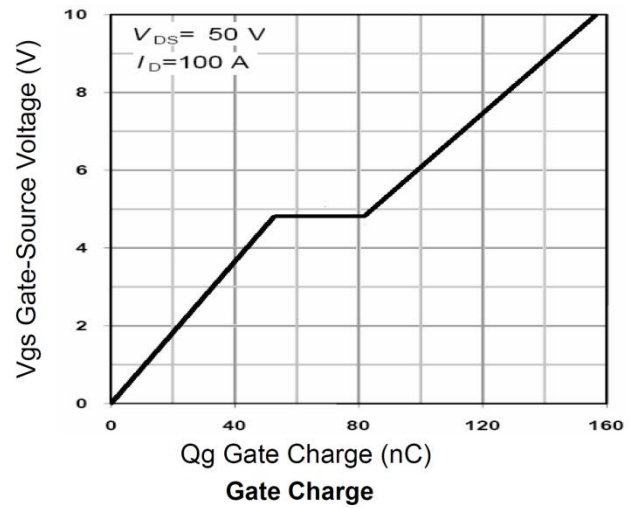
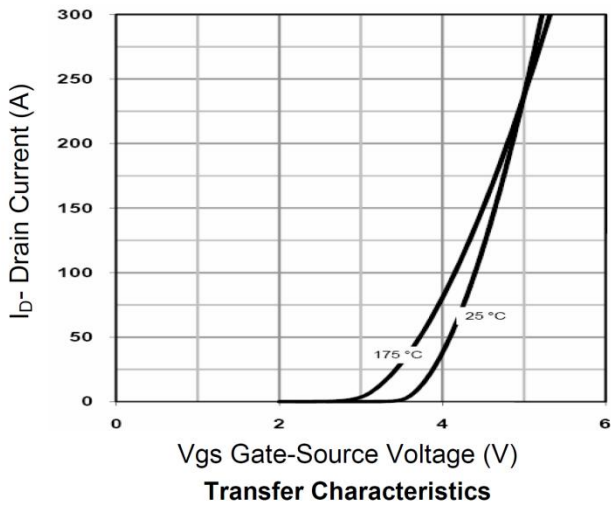
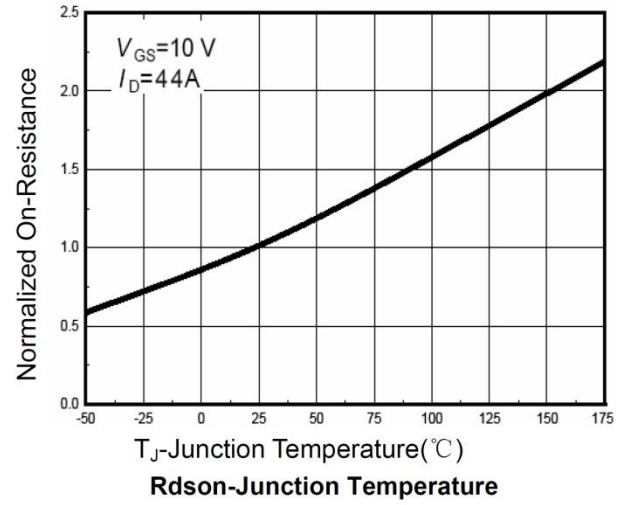
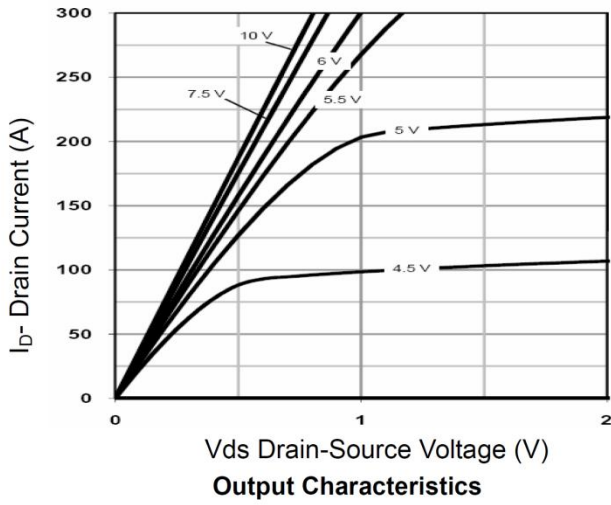
Electrical characteristics (Ta=25°C, unless otherwise noted)

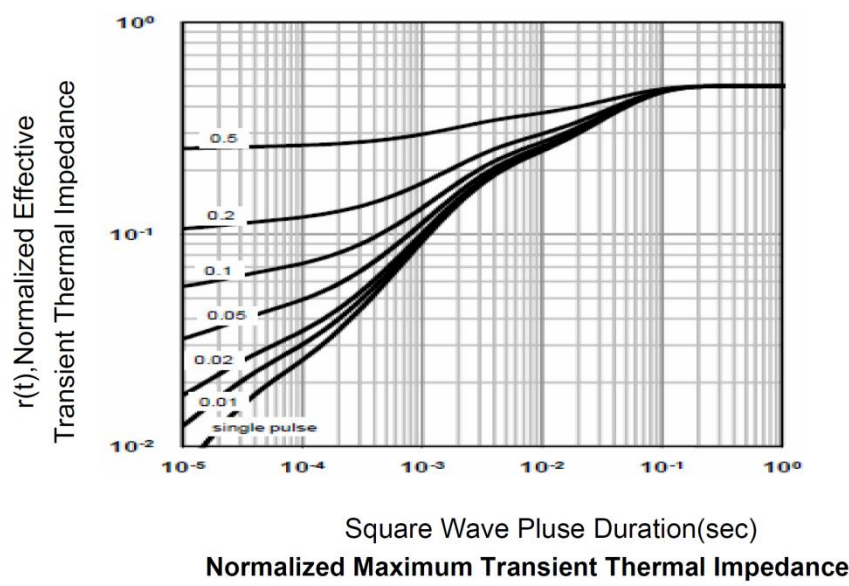
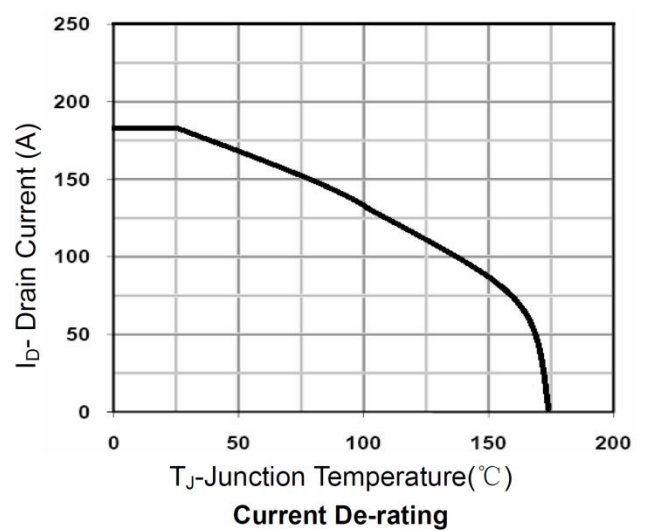
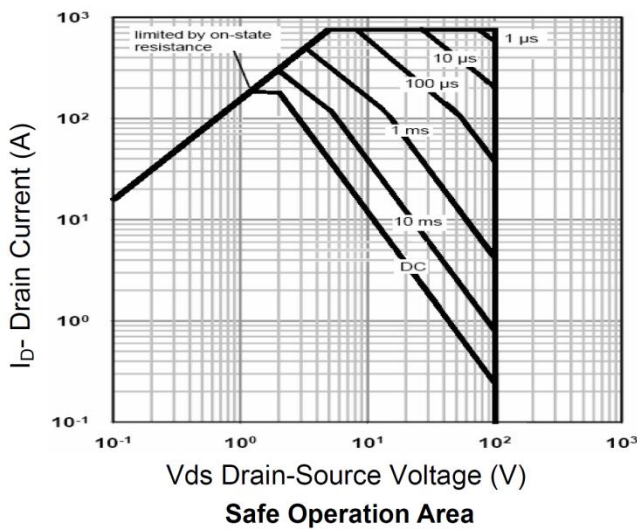
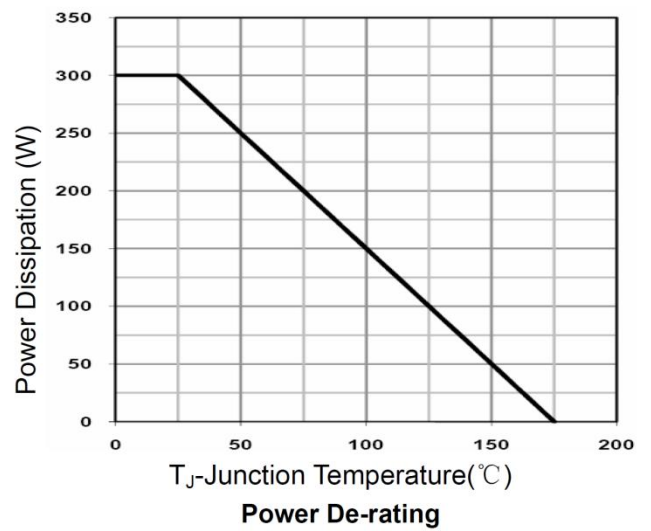
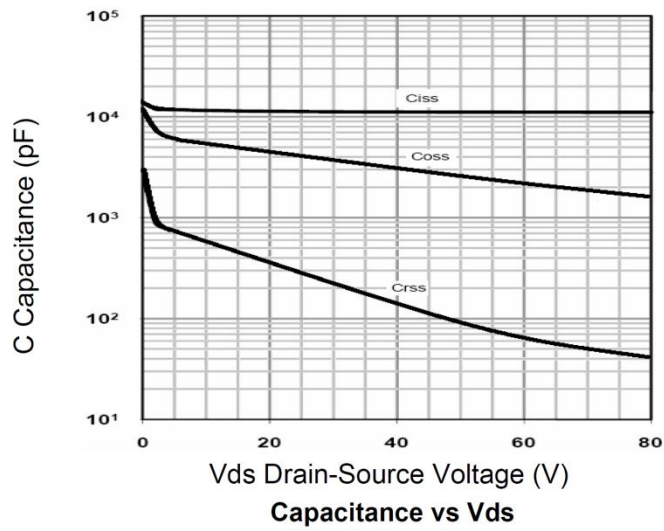
| Characteristics | Symbol | Test Condition | Min | Typ | Max | Unit |
|--|--------------|---|-----|------|-----------|------------|
| Static Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $I_D = 250\mu A, V_{GS} = 0V$ | 100 | - | - | V |
| Drain Cut-Off Current | I_{DSS} | $V_{DS} = 80V, V_{GS} = 0V$ | - | - | 1 | μA |
| Gate Leakage Current | I_{GSS} | $V_{GS} = \pm 20V, V_{DS} = 0V$ | - | - | ± 0.1 | |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\mu A$ | 2.0 | 2.5 | 4.0 | V |
| Drain-Source ON Resistance | $R_{DS(ON)}$ | $V_{GS} = 10V, I_D = 30A$ | - | 2.4 | 3.0 | m Ω |
| Dynamic Characteristics | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS} = 50V, V_{GS} = 0V, f = 1.0MHz$ | - | 6980 | - | pF |
| Output Capacitance | C_{oss} | | - | 653 | - | |
| Reverse Transfer Capacitance | C_{rss} | | - | 24 | - | |
| Switching Characteristics | | | | | | |
| Total Gate Charge | Q_g | $V_{DS} = 50V, V_{GS} = 10V, I_D = 100A$ | - | 158 | - | nC |
| Gate-Source Charge | Q_{gs} | | - | 53 | - | |
| Gate-Drain Charge | Q_{gd} | | - | 27 | - | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{GS} = 10V, V_{DS} = 50V, I_D = 100A, R_G = 6\Omega$ | - | 26 | - | ns |
| Rise Time | t_r | | - | 75 | - | |
| Turn-Off Delay Time | $t_{d(off)}$ | | - | 87 | - | |
| Fall Time | t_f | | - | 30 | - | |
| Drain-Source Body Diode Characteristics | | | | | | |
| Source-Drain Diode Forward Voltage | V_{SD} | $I_S = 1A, V_{GS} = 0V$ | - | - | 1.2 | V |

Note:

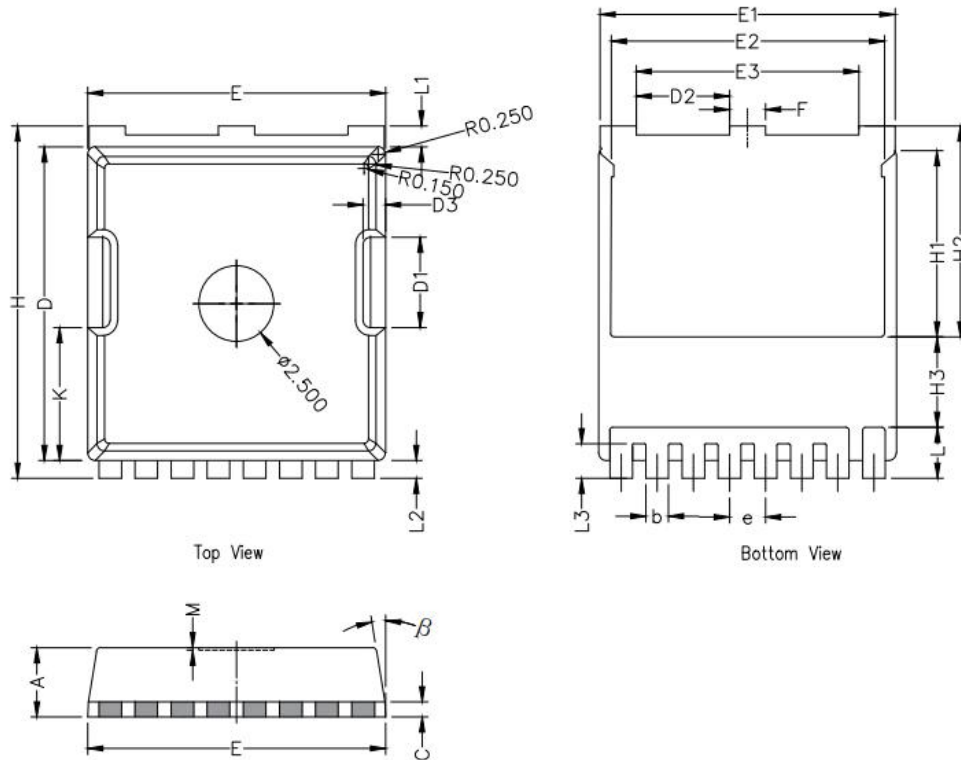
- E_{AS} is tested at starting $T_j = 25^\circ C, V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH, R_g = 25\Omega$;

Typical Characteristics





TOLL Package Information



| Symbol | Dimensions In Millimeters | | |
|---------|---------------------------|-------|-------|
| | Min. | Nom. | Max. |
| A | 2.20 | 2.30 | 2.40 |
| b | 0.65 | 0.75 | 0.85 |
| C | 0.508 REF | | |
| D | 10.25 | 10.40 | 10.55 |
| D1 | 2.85 | 3.00 | 3.15 |
| E | 9.75 | 9.90 | 10.05 |
| E1 | 9.65 | 9.80 | 9.95 |
| E2 | 8.95 | 9.10 | 9.25 |
| E3 | 7.25 | 7.40 | 7.55 |
| e | 1.20 BSC | | |
| F | 1.05 | 1.20 | 1.35 |
| H | 11.55 | 11.70 | 11.85 |
| H1 | 6.03 | 6.18 | 6.33 |
| H2 | 6.85 | 7.00 | 7.15 |
| H3 | 3.00 BSC | | |
| L | 1.55 | 1.70 | 1.85 |
| L1 | 0.55 | 0.7 | 0.85 |
| L2 | 0.45 | 0.6 | 0.75 |
| M | 0.08 REF. | | |
| β | 8° | 10° | 12° |
| K | 4.25 | 4.40 | 4.55 |