

### Product Summary

| $V_{(BR)DSS}$ | $R_{DS(on)TYP}$ | $I_D$ |
|---------------|-----------------|-------|
| 100V          | 1.6mΩ@10V       | 260A  |

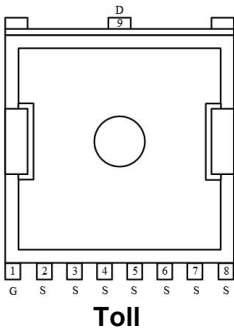
### Feature

- Fast Switching
- Low Gate Charge and R<sub>DS(on)</sub>
- 100% Single Pulse avalanche energy Test

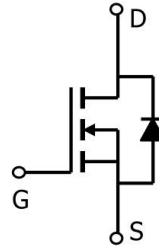
### Applications

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

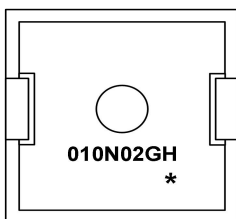
### Package



### Circuit diagram



### Marking



**010N02GH** : 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                          | $V_{GS}$        | $\pm 20$   | V    |
| Continuous drain current(Tc=25°C)            | $I_D$           | 260        | A    |
| Continuous drain current(Tc=100°C)           | $I_D$           | 175        | A    |
| Pulsed drain current                         | $I_{DM}$        | 860        | A    |
| Power dissipation(Tc=25°C)                   | $P_D$           | 280        | W    |
| Single pulsed avalanche energy <sup>1)</sup> | $E_{AS}$        | 1560       | mJ   |
| Thermal resistance, junction-case            | $R_{\theta JC}$ | 0.45       | °C/W |
| Operation and storage temperature            | $T_{stg}, T_j$  | -55 to 175 | °C   |

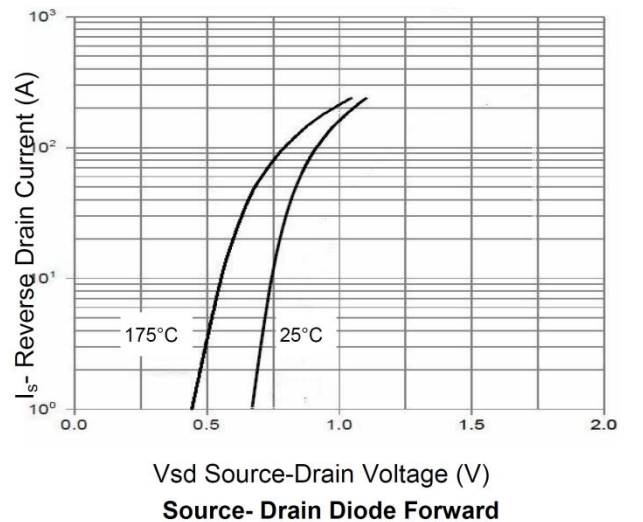
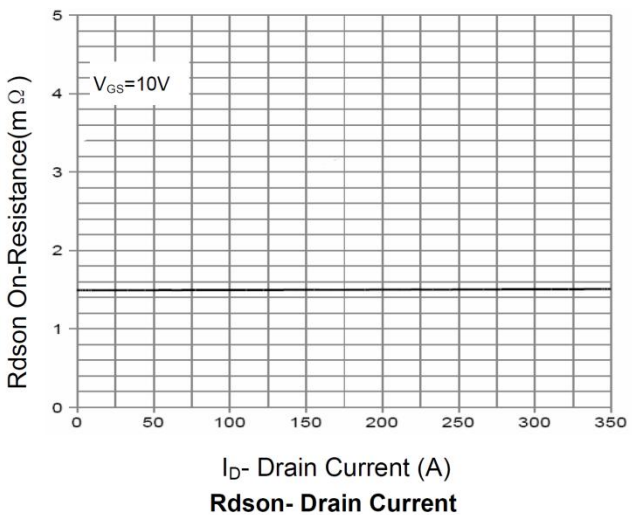
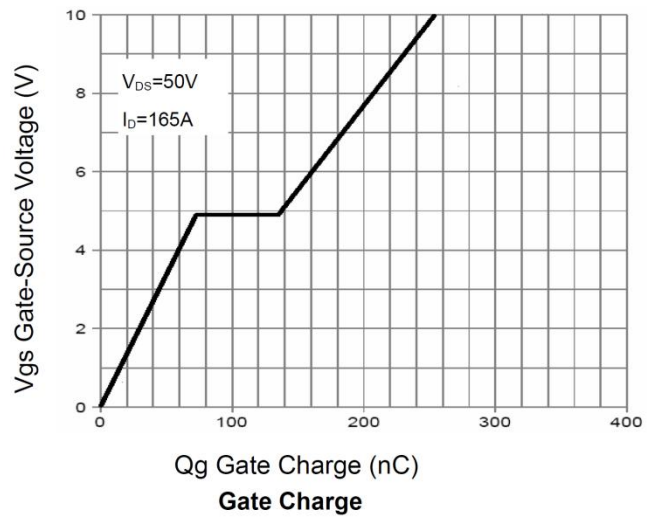
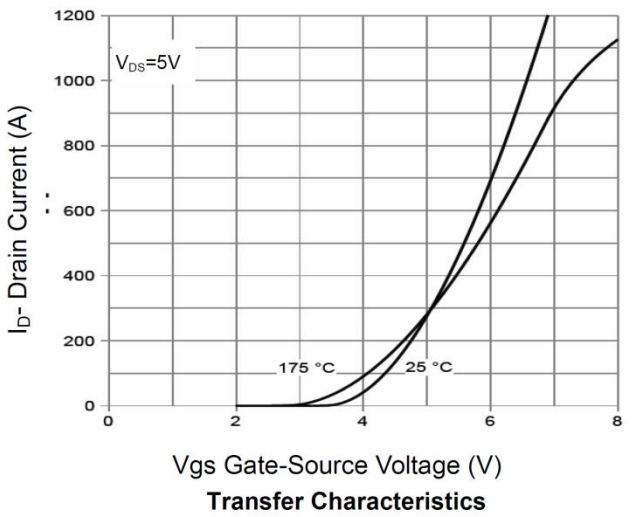
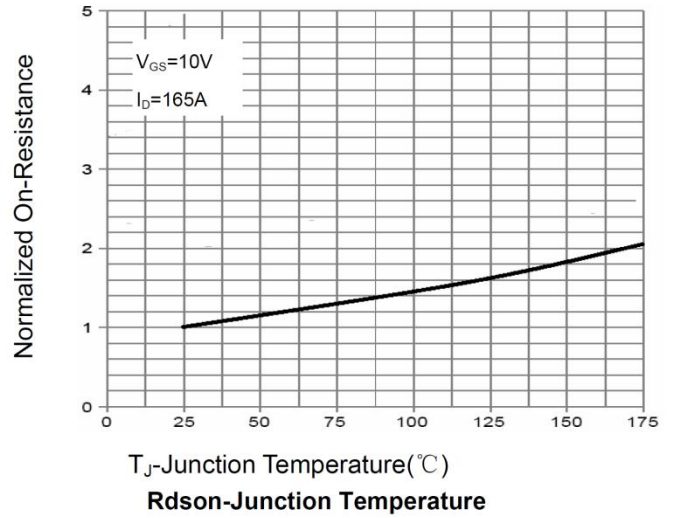
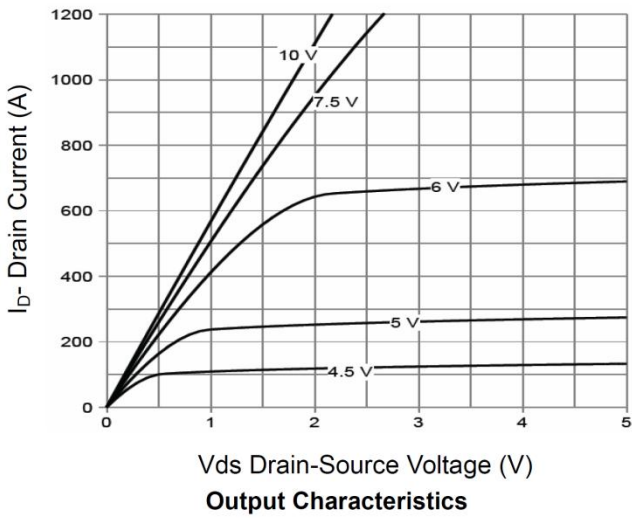
**Electrical characteristics (Ta=25°C, unless otherwise noted)**

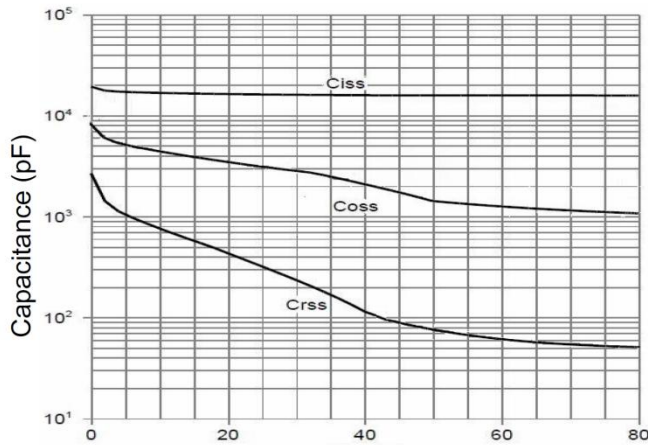
| Characteristics                                | Symbol       | Test Condition   | Min | Typ  | Max       | Unit       |
|--|--------------|--|-----|------|-----------|------------|
| <b>Static Characteristics</b>                  |              |  |     |      |           |            |
| Drain-Source 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         | $\mu A$    |
| Gate Leakage Current                           | $I_{GSS}$    | $V_{GS} = \pm 20V, V_{DS} = 0V$                                | -   | -    | $\pm 0.1$ |            |
| Gate Threshold Voltage                         | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\mu A$                              | 2.7 | 3.2  | 4         | V          |
| Drain-Source ON Resistance                     | $R_{DS(ON)}$ | $V_{GS} = 10V, I_D = 20A$                                      | -   | 1.6  | 2         | m $\Omega$ |
| <b>Dynamic Characteristics</b>                 |              |  |     |      |           |            |
| Input Capacitance                              | $C_{iss}$    | $V_{DS} = 50V, V_{GS} = 0V, f = 1.0MHz$                        | -   | 9625 | -         | pF         |
| Output Capacitance                             | $C_{oss}$    |  | -   | 1608 | -         |            |
| Reverse Transfer Capacitance                   | $C_{rss}$    |  | -   | 75   | -         |            |
| <b>Switching Characteristics</b>               |              |  |     |      |           |            |
| Total Gate Charge                              | $Q_g$        | $V_{DS} = 50V, V_{GS} = 10V, I_D = 20A$                        | -   | 160  | -         | nC         |
| Gate-Source Charge                             | $Q_{gs}$     |  | -   | 31   | -         |            |
| Gate-Drain Charge                              | $Q_{gd}$     |  | -   | 37   | -         |            |
| Turn-On Delay Time                             | $t_{d(on)}$  | $V_{GS} = 10V, V_{DS} = 50V, R_L = 2.5\Omega, R_G = 6.0\Omega$ | -   | 35   | -         | ns         |
| Rise Time                                      | $t_r$        |  | -   | 68   | -         |            |
| Turn-Off Delay Time                            | $t_{d(off)}$ |  | -   | 150  | -         |            |
| Fall Time                                      | $t_f$        |  | -   | 105  | -         |            |
| <b>Drain-Source Body Diode Characteristics</b> |              |  |     |      |           |            |
| Source-Drain Diode Forward Voltage             | $V_{SD}$     | $I_S = 1A, V_{GS} = 0V$  | -   | -    | 1.2       | V          |

Note:

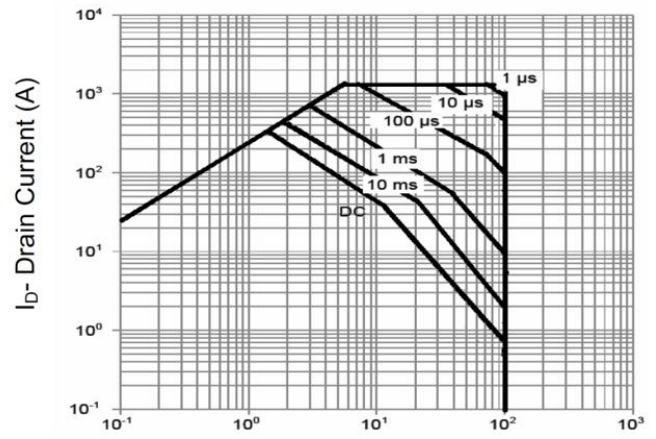
- $E_{AS}$  is tested at starting  $T_j = 25^\circ C, V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH, R_g = 25m\Omega$ ;

**Typical Characteristics**

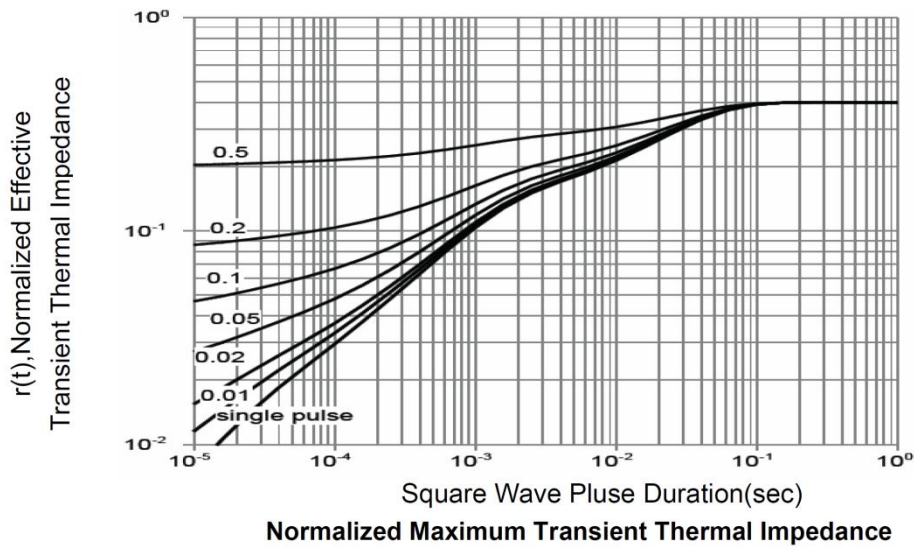




V<sub>ds</sub> Drain-Source Voltage (V)  
**Capacitance vs V<sub>ds</sub>**

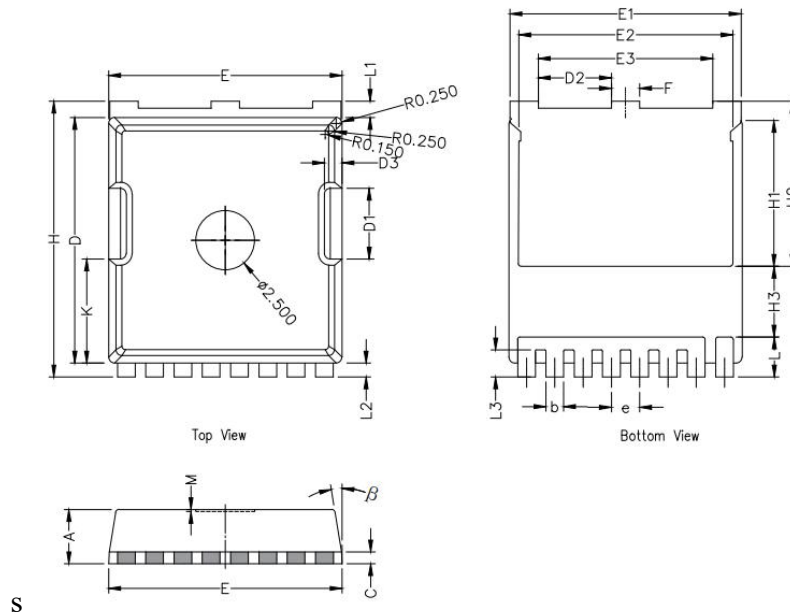


V<sub>ds</sub> Drain-Source Voltage (V)  
**Safe Operation Area**



**Normalized Maximum Transient Thermal Impedance**

**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.                 |       |       |
| $\beta$ | 8°                        | 10°   | 12°   |
| K       | 4.25                      | 4.40  | 4.55  |



制 修 订 记 录

| 文件版本 | 制修日期      | 修订页次 | 修订人 | 变更内容          |
|------|-----------|------|-----|---------------|
| 1.0  | 2022/7/26 |      | 王余林 | 规格书建立         |
| 1.1  | 2023/8/15 |      | 覃源  | 根据FT更新Rdson   |
| 1.2  | 2024/1/30 |      | 陈志鹏 | 增加高温ID, 修正曲线图 |
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