

**/ Descriptions**

TO-220      N      MOS      N-CHANNEL MOSFET in a TO-220 Plastic Package.

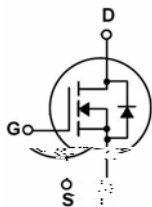
**/ Features**

Low gate charge, low crss, fast switching.

**/ Applications**

DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.

**/ Equivalent Circuit****/ Pinning**

PIN1   G      PIN 2   D      PIN 3   S

**/  $h_{FE}$  Classifications & Marking**

See Marking Instructions.

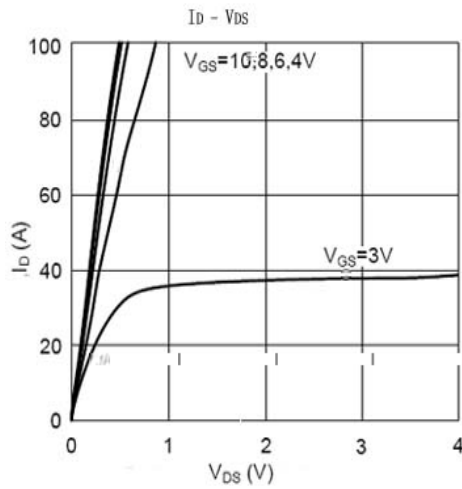
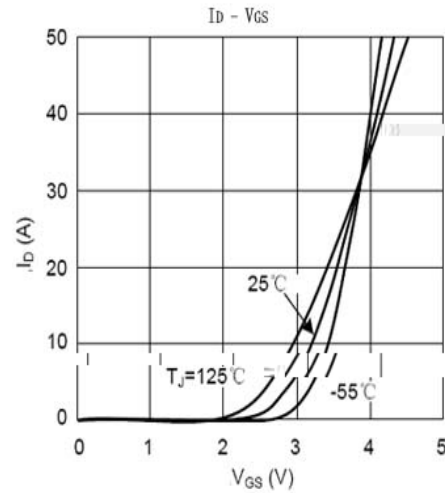
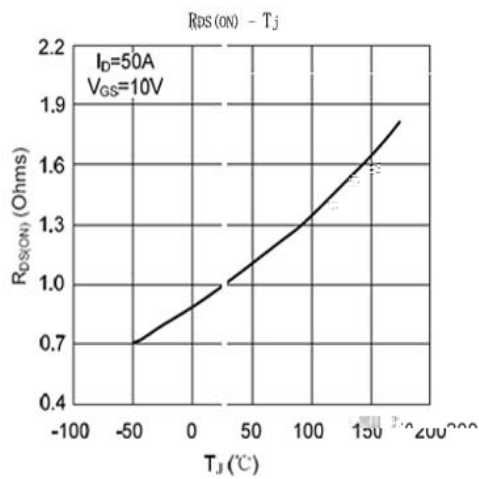
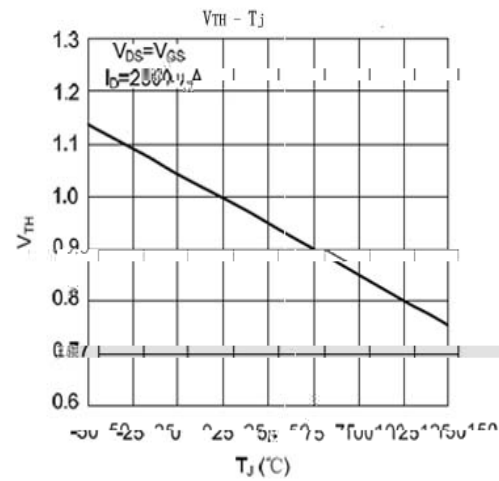
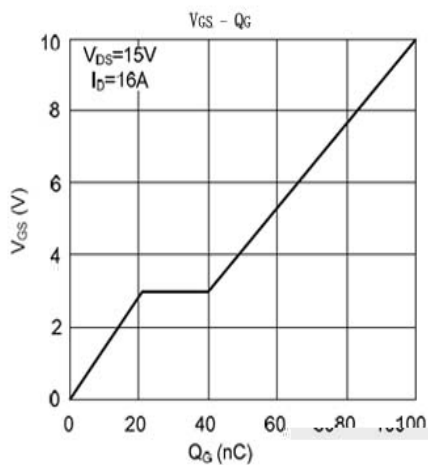
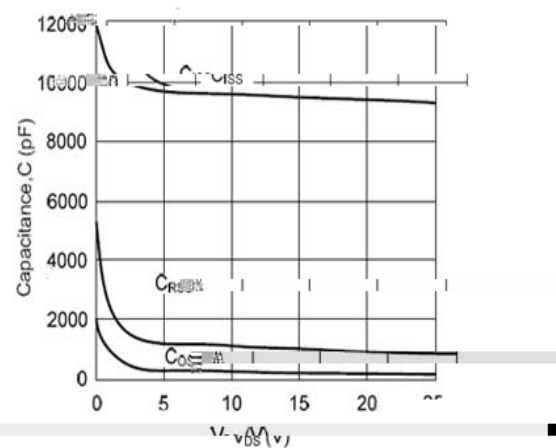
## / Absolute Maximum Ratings(Ta=25 )

| Parameter                              | Symbol                      | Rating     | Unit |
|----------------------------------------|-----------------------------|------------|------|
| Drain-Source Voltage                   | $V_{DSS}$                   | 30         | V    |
| Drain Current                          | $I_D(T_c=25^\circ\text{C})$ | 100        | A    |
| Peak Drain Current                     | $I_{DM}$                    | 400        | A    |
| Gate-Source Voltage                    | $V_{GSS}$                   | $\pm 20$   | V    |
| Single Pulsed Avalanche Energy         | $E_{AS}$                    | 875        | mJ   |
| Total Power Dissipation                | $P_D(T_c=25^\circ\text{C})$ | 100        | W    |
| Junction and Storage Temperature Range | $T_J, T_{STG}$              | -55 to 150 |      |

## / Electrical Characteristics(Ta=25 )

| Parameter                         | Symbol       | Test Conditions                                         | Min | Typ  | Max       | Unit       |
|-----------------------------------|--------------|---------------------------------------------------------|-----|------|-----------|------------|
| Zero Gate Voltage Drain Current   | $BV_{DSS}$   | $V_{GS}=0V$ $I_D=250\mu A$                              | 30  |      |           | V          |
| Zero Gate Voltage Drain Current   | $I_{DSS}$    | $V_{DS}=30V$ $V_{GS}=0V$                                |     |      | 1         | $\mu A$    |
| Gate-Body Leakage Current Forward | $I_{GSS}$    | $V_{GS}=\pm 20V$ $V_{DS}=0V$                            |     |      | $\pm 0.1$ | $\mu A$    |
| Gate Threshold Voltage            | $V_{GS(th)}$ | $V_{DS}=V_{GS}$ $I_D=250\mu A$                          | 1.0 |      | 3.0       | V          |
| Forward On Voltage                | $V_{SD}$     | $I_S=20A$ $V_{GS}=0V$                                   |     |      | 1.5       | V          |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=10V$ $I_D=50A$                                  |     | 3.5  | 4.5       | m $\Omega$ |
|                                   |              | $V_{GS}=4.5V$ $I_D=40A$                                 |     | 5.0  | 7.0       | m $\Omega$ |
| Input Capacitance                 | $C_{iss}$    | $V_{GS}=0V$ $f=1.0MHz$<br>$V_{DS}=15V$                  |     | 9500 |           | pF         |
| Output Capacitance                | $C_{oss}$    |                                                         |     | 800  |           | pF         |
| Reverse Transfer Capacitance      | $C_{rss}$    |                                                         |     | 300  |           | pF         |
| Total Gate Charge                 | $Q_G$        | $V_{DS}=15V$ $V_{GS}=5V$<br>$I_D=16A$                   |     | 50   | 65        | nC         |
| Gate Source Charge                | $Q_{GS}$     |                                                         |     | 20.8 |           | nC         |
| Gate Drain Charge                 | $Q_{GD}$     |                                                         |     | 19   |           | nC         |
| Turn-On Delay Time                | $t_{d(on)}$  | $V_{DD}=15V$ $I_D=1A$<br>$R_{GEN}=6\Omega$ $V_{GS}=10V$ |     | 25.7 | 50        | ns         |
| Turn-On Rise Time                 | $t_r$        |                                                         |     | 10   | 20        | ns         |
| Turn-Off Delay Time               | $t_{d(off)}$ |                                                         |     | 128  | 200       | ns         |
| Turn-Off Fall Time                | $t_f$        |                                                         |     | 34   | 70        | ns         |

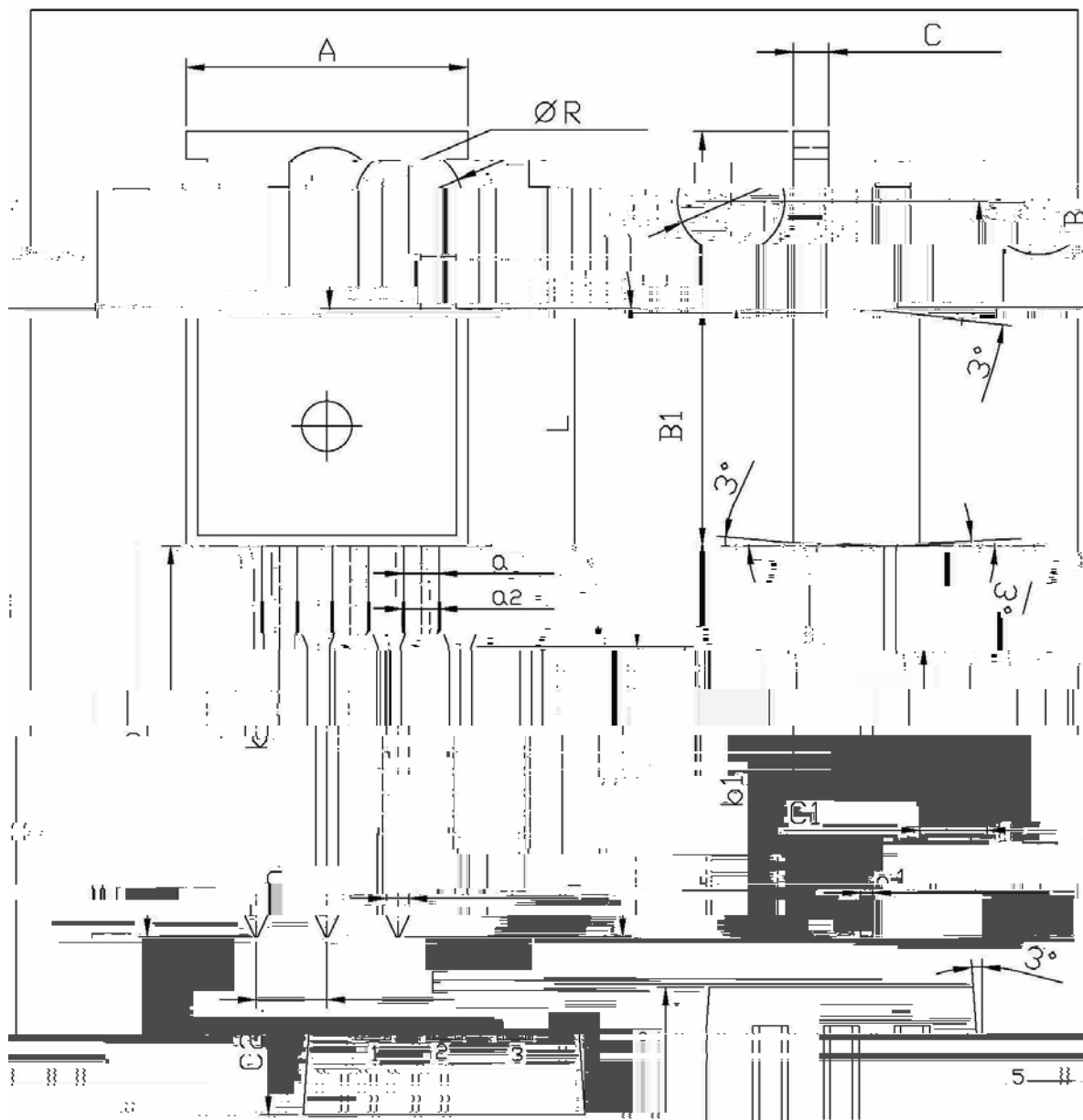
## / Electrical Characteristic Curve



/ Package Dimensions

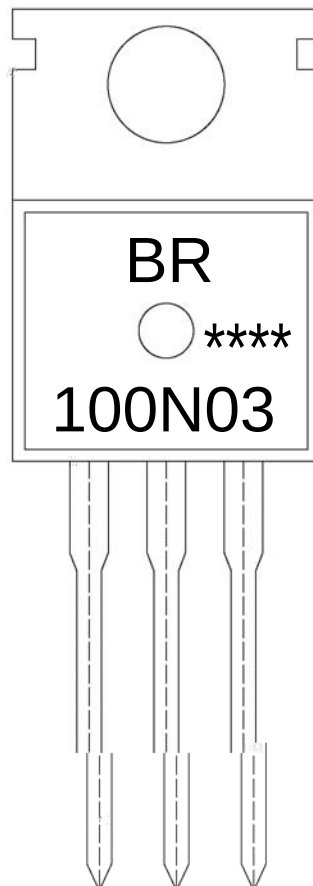
T0-220

单位: mm



| Dimensions In Millimeters |      |      |        | Dimensions In Millimeters |      |        |     |
|---------------------------|------|------|--------|---------------------------|------|--------|-----|
| Symbol                    | Min  | Max  | Symbol | Min                       | Max  | Symbol | Min |
| A                         | 9.8  | 10.2 | C      | 1.2                       |      |        |     |
| R                         | 3.56 | 3.64 | B      | 9.0                       |      |        |     |
| L                         | 15.7 | 16.1 | B1     | 9.0                       |      |        |     |
| b                         | 13.6 | 13.6 | b1     | 9.6                       | 10.6 | a      |     |
| b1                        | 9.6  | 10.6 | b2     | 13.3                      | 14.3 | b3     |     |
| b2                        | 13.3 | 14.3 | b3     | 14.3                      | 15.3 |        |     |
| b3                        | 14.3 | 15.3 |        |                           |      |        |     |

/ Marking Instructions



BR

100N03

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Note:

BR: Company Code

100N03: Product Type.

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

