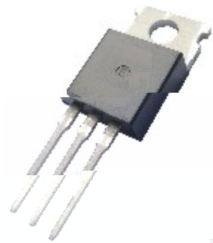
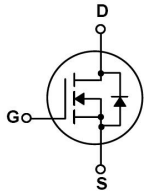


TO-220      N      MOS      N-CHANNEL MOSFET in a TO-220 Plastic Package.

$R_{DS(on)}$        $C_{rss}$   
 Low  $R_{DS(on)}$ , low gate charge, low  $C_{rss}$ , fast switching.

#### DC/DC

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

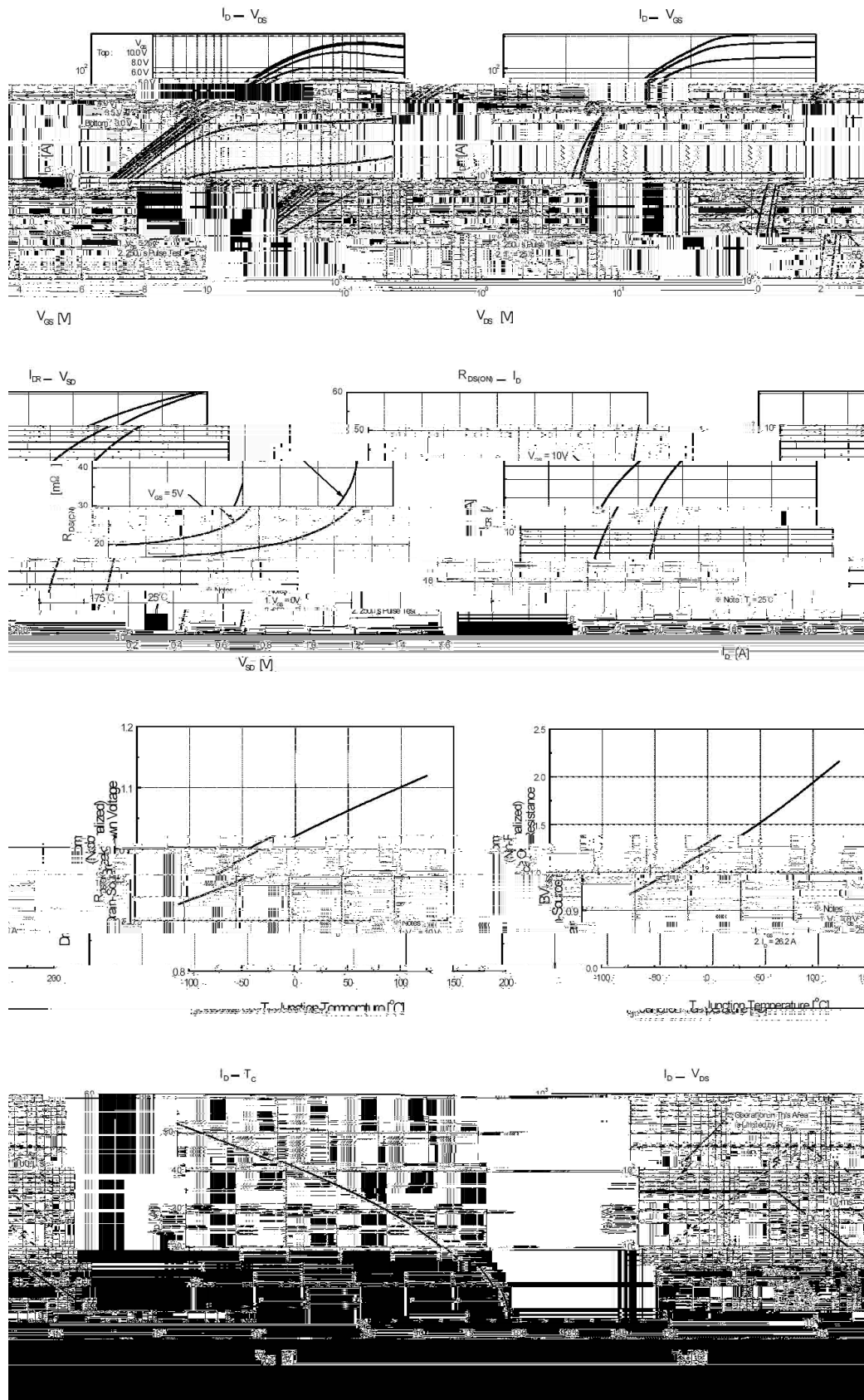


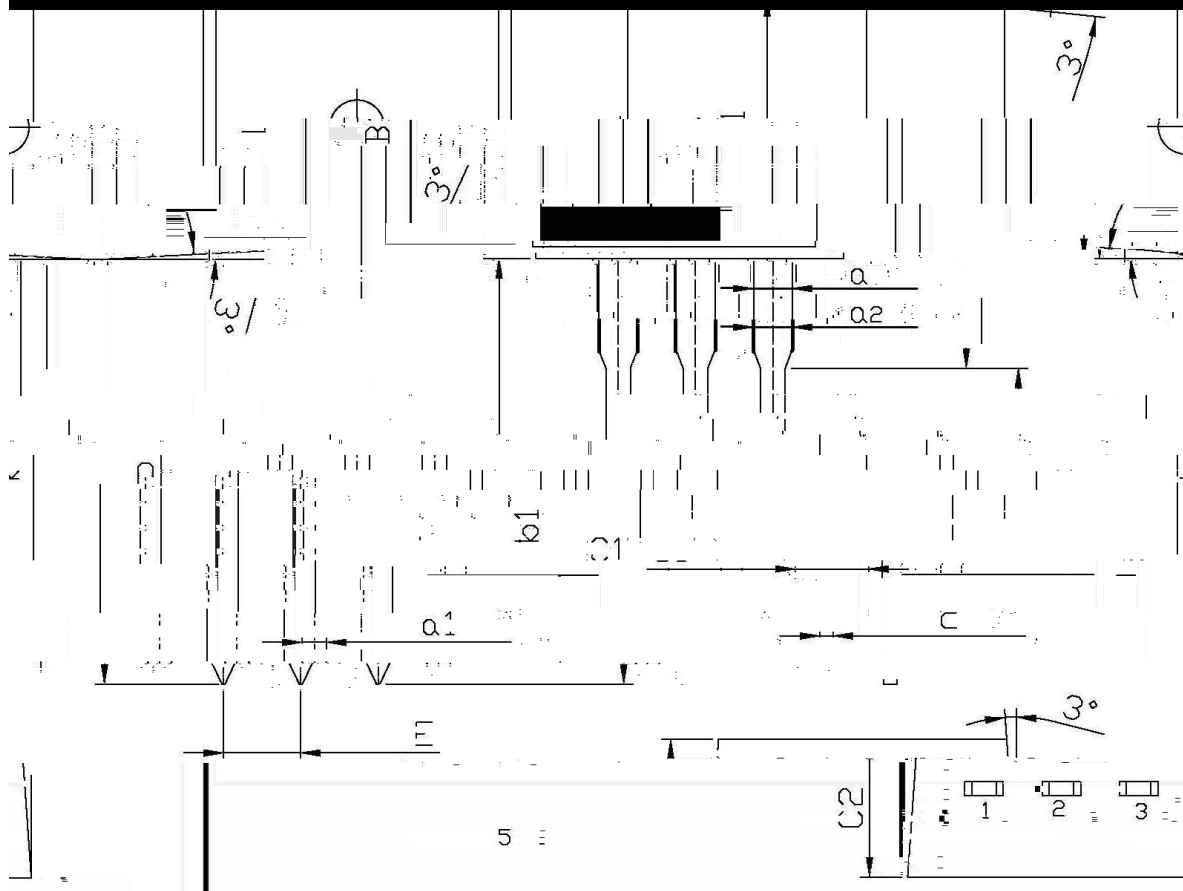
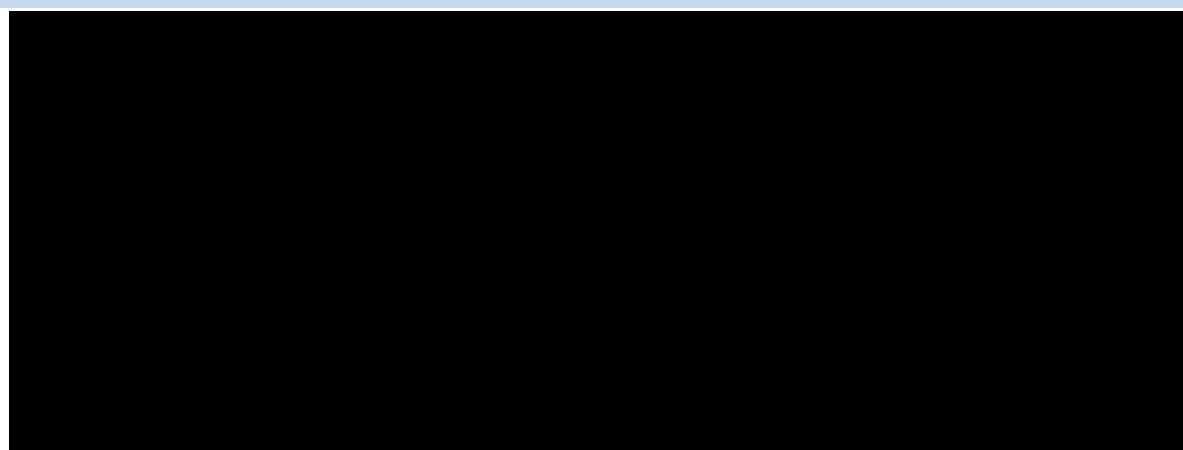
PIN1   G      PIN 2   D      PIN 3   S

See Marking Instructions.

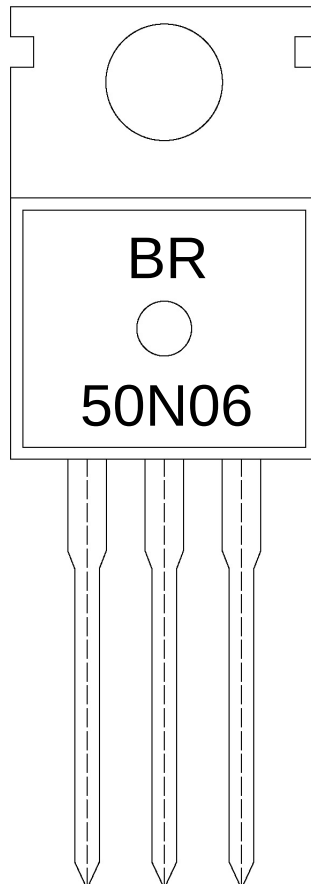
| Parameter                      | Symbol                       | Rating   | Unit             |
|--------------------------------|------------------------------|----------|------------------|
| Drain-Source Voltage           | $V_{DS}$                     | 60       | V                |
| Drain Current                  | $I_D(T_c=25^\circ\text{C})$  | 50       | A                |
| Drain Current                  | $I_D(T_c=100^\circ\text{C})$ | 35.4     | A                |
| Drain Current - Pulsed         | $I_{DM}$                     | 200      | A                |
| Gate-Source Voltage            | $V_{GS}$                     | $\pm 20$ | V                |
| Single Pulsed Avalanche Energy | $E_{AS}$                     | 490      | mJ               |
| Avalanche Current              | $E_{AR}$                     | 12       | mJ               |
| Power Dissipation              | $P_D(T_c=25^\circ\text{C})$  | 120      | W                |
| Operating Temperature Range    | $T_j$                        | 150      | $^\circ\text{C}$ |
| Storage Temperature Range      | $T_{stg}$                    | -55 150  | $^\circ\text{C}$ |

| Parameter                          | Symbol       | Test Conditions                        | Min | Typ   | Max       | Unit |
|------------------------------------|--------------|----------------------------------------|-----|-------|-----------|------|
| Drain-Source Breakdown Voltage     | $BV_{DSS}$   | $V_{GS}=0V$ $I_D=250\text{ A}$         | 60  |       |           | V    |
| Zero Gate Voltage Drain Current    | $I_{DSS}$    | $V_{DS}=60V$ $V_{GS}=0V$               |     |       | 1.0       | A    |
|                                    |              | $V_{DS}=48V$ $T_c=150$                 |     |       | 10        |      |
| Gate-Body Leakage Current, Forward | $I_{GSS}$    | $V_{GS}=\pm 20V$ $V_{DS}=0V$           |     |       | $\pm 0.1$ | A    |
| Gate Threshold Voltage             | $V_{GS(th)}$ | $V_{DS}=V_{GS}$ $I_D=250\text{ A}$     | 2   |       | 4         | V    |
| Total Gate Charge                  | $Q_g$        | $V_{DS}=48V$ $I_D=50A$<br>$V_{GS}=10V$ |     | 32    | 42        | nC   |
| Static Drain-Source On-Resistance  | $R_{DS(on)}$ | $V_{GS}=10V$ $I_D=25A$                 |     | 0.018 | 0.022     |      |
| Drain-Source Diode Forward Voltage | $V_{SD}$     | $V_{GS}=0V$ $I_S=50A$                  |     |       | 1.5       | V    |
| Input Capacitance                  | $C_{iss}$    | $V_{DS}=25V$ $V_{GS}=0V$<br>$f=1.0MHz$ |     | 1050  | 1365      | pF   |
| Output Capacitance                 | $C_{oss}$    |                                        |     | 460   | 600       |      |
| Reverse Transfer Capacitance       | $C_{rss}$    |                                        |     | 70    | 90        |      |
| Turn-On Delay Time                 | $t_{d(on)}$  | $V_{DD}=30V$ $I_D=25A$<br>$R_G=25$     |     | 20    | 50        | ns   |
| Turn-On Rise Time                  | $t_r$        |                                        |     | 100   | 210       |      |
| Turn-Off Delay Time                | $t_{d(off)}$ |                                        |     | 80    | 170       |      |
| Turn-Off Fall Time                 | $t_f$        |                                        |     | 85    | 180       |      |





| Dimensions in Millimeters |      |      | Dimensions in Millimeters |      |      |
|---------------------------|------|------|---------------------------|------|------|
| Symbol                    | Min  | Max  | Symbol                    | Min  | Max  |
| $\Delta$                  | 9.8  | 10.2 | C                         | 1.2  | 1.4  |
| $\alpha$                  | 3.56 | 3.64 | D                         | 6.3  | 6.7  |
| $\beta$                   | 15.7 | 16.1 | B1                        | 9.0  | 9.4  |
| b                         | 12.6 | 13.6 | G1                        | 2.2  | 2.6  |
| b1                        | 9.6  | 10.6 | a1                        | 0.7  | 0.9  |
| c                         | 13.0 | 14.0 | a2                        | 1.25 | 1.45 |



BR

50N06

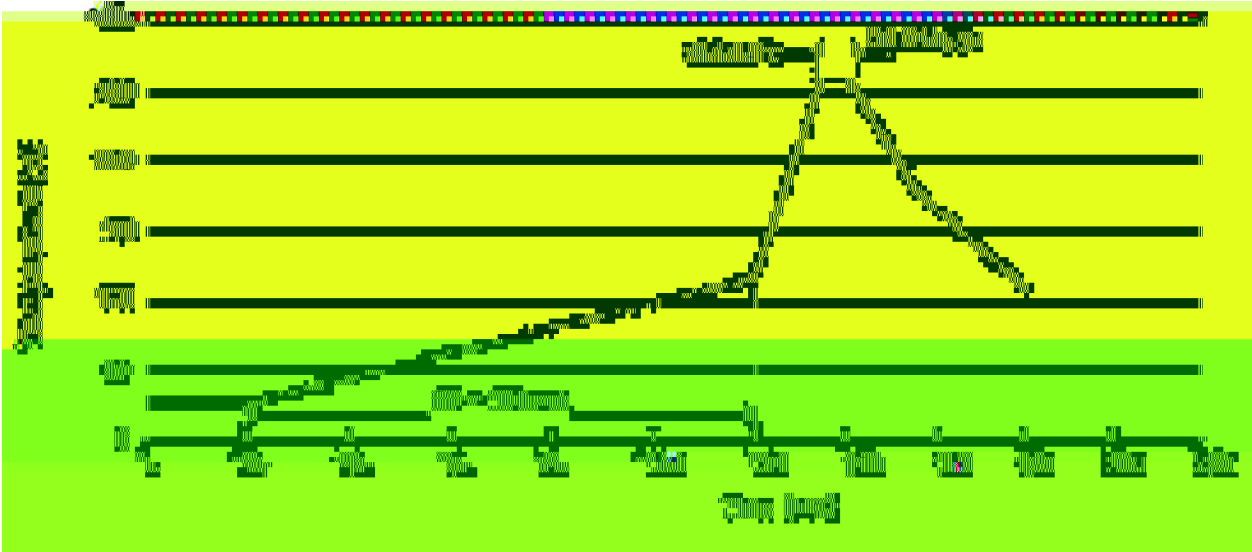
\*\*\*\*

Note:

BR: Company Code

50N06: Product Type Code

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



- 1

25 150

60 90sec;
- 2

255±5

5±0.5sec;
- 3

2 10

/sec.
- Note:  
1.Preheating:25~150 , Time:60~90sec.  
2.Peak Temp.:255±5 , Duration:5±0.5sec.  
3. Cooling Speed: 2~10 /sec.

270±5

10±1 sec.

Temp.:270±5℃

Time:10±1 sec

/ BULK

| Package Type | Units |  |  |  |  | Dimension |  | (unit mm <sup>3</sup> ) |
|--------------|-------|--|--|--|--|-----------|--|-------------------------|
|              |       |  |  |  |  |           |  |                         |
|              |       |  |  |  |  |           |  |                         |