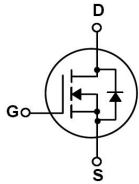


TO-220F      N      MOS      N-CHANNEL MOSFET in a TO-220F Plastic Package.

Low gate charge, low crss, fast switching.

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

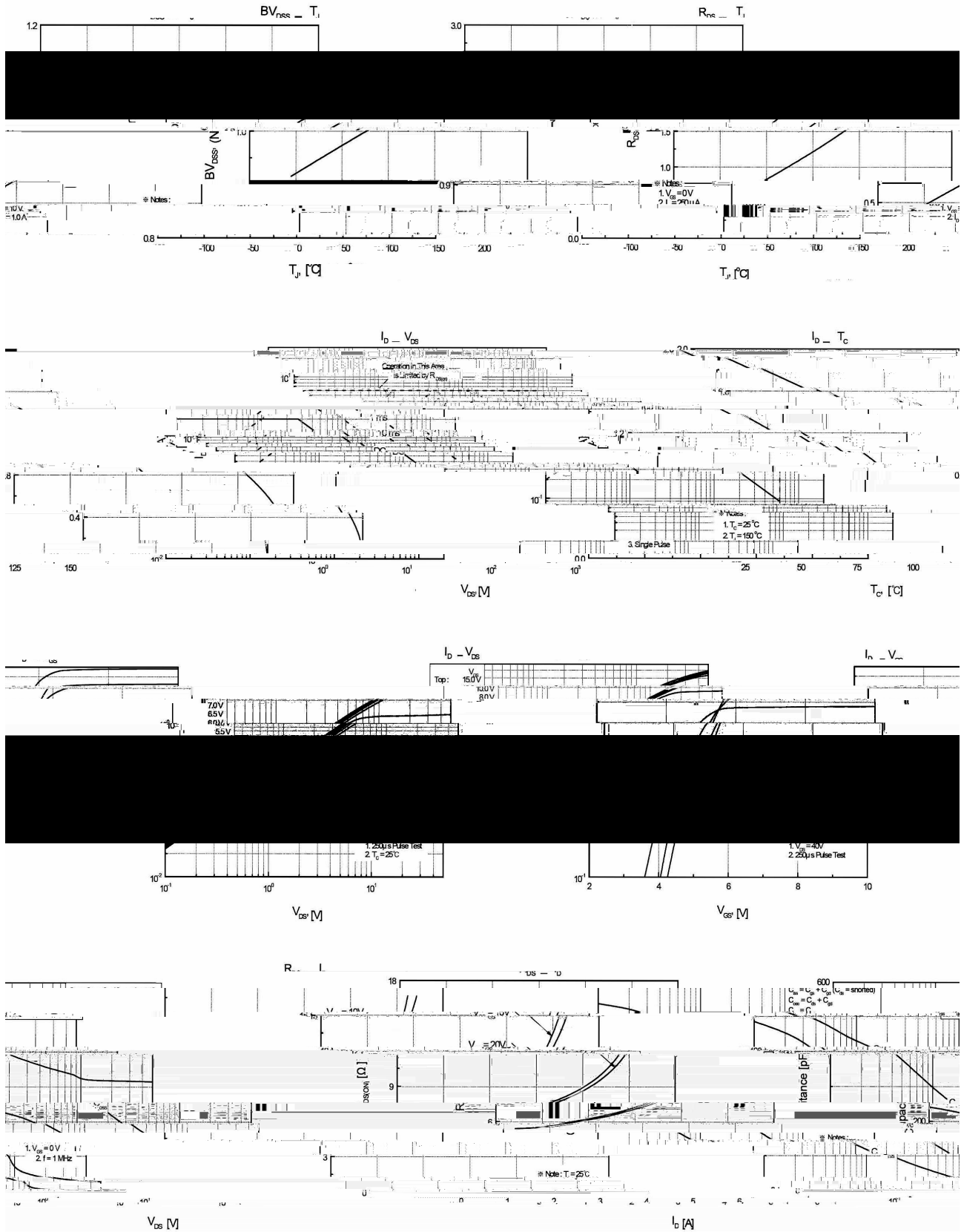


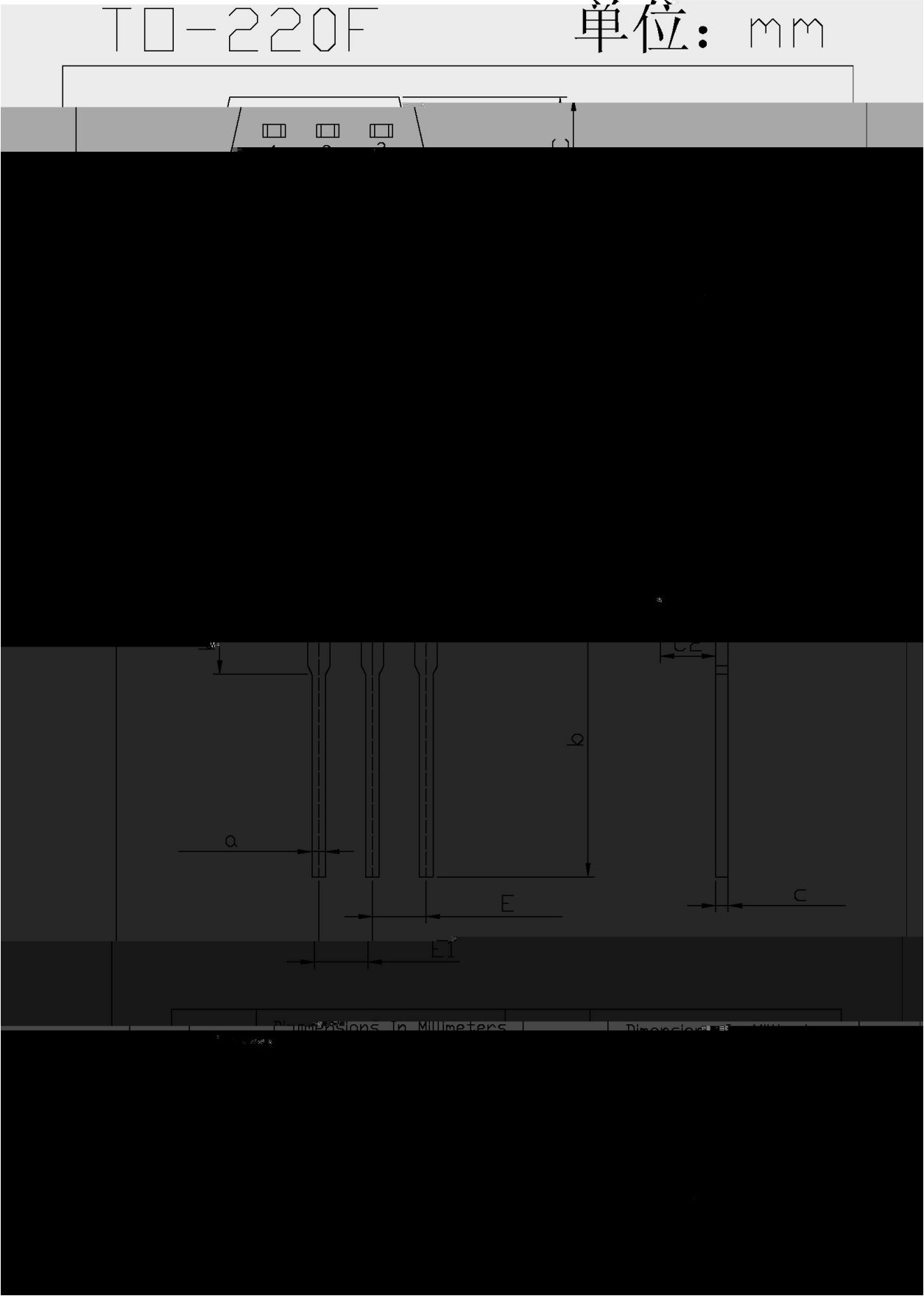
PIN1   G      PIN 2   D      PIN 3   S

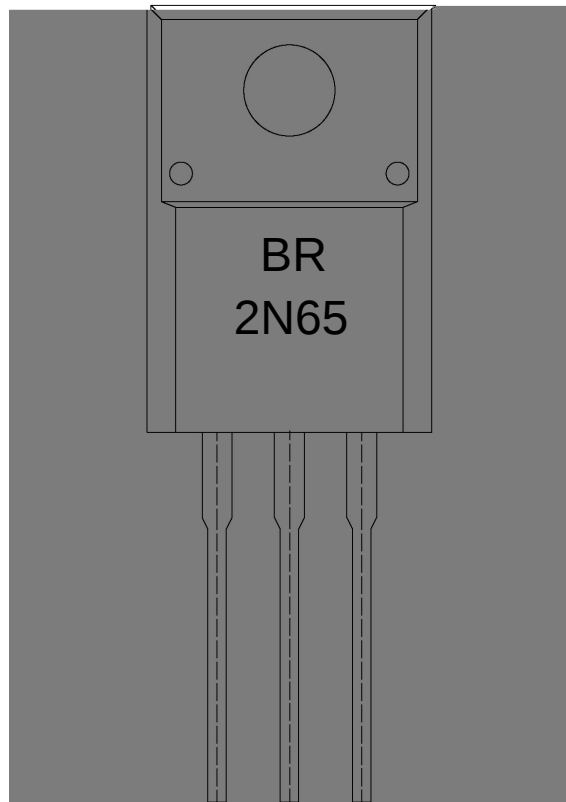
See Marking Instructions.

| Parameter                               | Symbol                       | Rating     | Unit |
|-----------------------------------------|------------------------------|------------|------|
| Drain-Source Voltage                    | $V_{DSS}$                    | 650        | V    |
| Drain Current                           | $I_D(T_C=25^\circ\text{C})$  | 2.0        | A    |
| Drain Current                           | $I_D(T_C=100^\circ\text{C})$ | 1.35       | A    |
| Drain Current - Pulsed                  | $I_{DM}$                     | 8.0        | A    |
| Gate-Source Voltage                     | $V_{GSS}$                    | $\pm 30$   | V    |
| Single Pulsed Avalanche Energy          | $E_{AS}$                     | 120        | mJ   |
| Repetitive Avalanche Energy             | $E_{AR}$                     | 5.4        | mJ   |
| Avalanche Current                       | $I_{AR}$                     | 2.0        | A    |
| Power Dissipation                       | $P_D(T_C=25^\circ\text{C})$  | 23         | W    |
| Operating and Storage Temperature Range | $T_J, T_{STG}$               | -55 to 150 |      |

| Parameter                          | Symbol       | Test Conditions                            | Min | Typ | Max       | Unit     |
|------------------------------------|--------------|--------------------------------------------|-----|-----|-----------|----------|
| Drain-Source Breakdown Voltage     | $BV_{DSS}$   | $V_{GS}=0V$ $I_D=250\mu A$                 | 650 |     |           | V        |
| Zero Gate Voltage Drain Current    | $I_{DSS}$    | $V_{DS}=600V$ $V_{GS}=0V$                  |     |     | 1.0       | $\mu A$  |
|                                    |              | $V_{DS}=480V$ $T_C=125^\circ\text{C}$      |     |     | 100       | $\mu A$  |
| Gate-Body Leakage Current, Forward | $I_{GSS}$    | $V_{GS}=\pm 30V$ $V_{DS}=0V$               |     |     | $\pm 0.1$ | $\mu A$  |
| Gate Threshold Voltage             | $V_{GS(th)}$ | $V_{DS}=V_{GS}$ $I_D=250\mu A$             | 2.0 |     | 4.0       | V        |
| Static Drain-Source On-Resistance  | $R_{DS(on)}$ | $V_{GS}=10V$ $I_D=1.0A$                    |     | 5.6 | 6.5       | $\Omega$ |
| Forward Transconductance           | $g_{FS}$     | $V_{DS}=40V$ $I_D=1.0A$                    |     | 5.0 |           | S        |
| Drain-Source Diode Forward Voltage | $V_{SD}$     | $V_{GS}=0V$ $I_S=2.0A$                     |     |     | 1.4       | V        |
| Input Capacitance                  | $C_{iss}$    | $V_{DS}=25V$ $V_{GS}=0V$<br>$f=1.0MHz$     |     | 320 | 420       | pF       |
| Output Capacitance                 | $C_{oss}$    |                                            |     | 35  | 46        | pF       |
| Reverse Transfer Capacitance       | $C_{rss}$    |                                            |     | 4.5 | 6.0       | pF       |
| Turn-On Delay Time                 | $t_{d(on)}$  | $V_{DD}=300V$ $I_D=2.0A$<br>$R_G=25\Omega$ |     | 8.0 | 30        | ns       |
| Turn-On Rise Time                  | $t_r$        |                                            |     | 23  | 60        | ns       |
| Turn-Off Delay Time                | $t_{d(off)}$ |                                            |     | 25  | 60        | ns       |
| Turn-Off Fall Time                 | $t_f$        |                                            |     | 28  | 70        | ns       |







BR  
2N65

Note:

BR: Company Code

2N65: Product Type.

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

Rev.E Dec.-2015