

BRD7N50F

Rev.A Jul.-2024



DATA SHEET

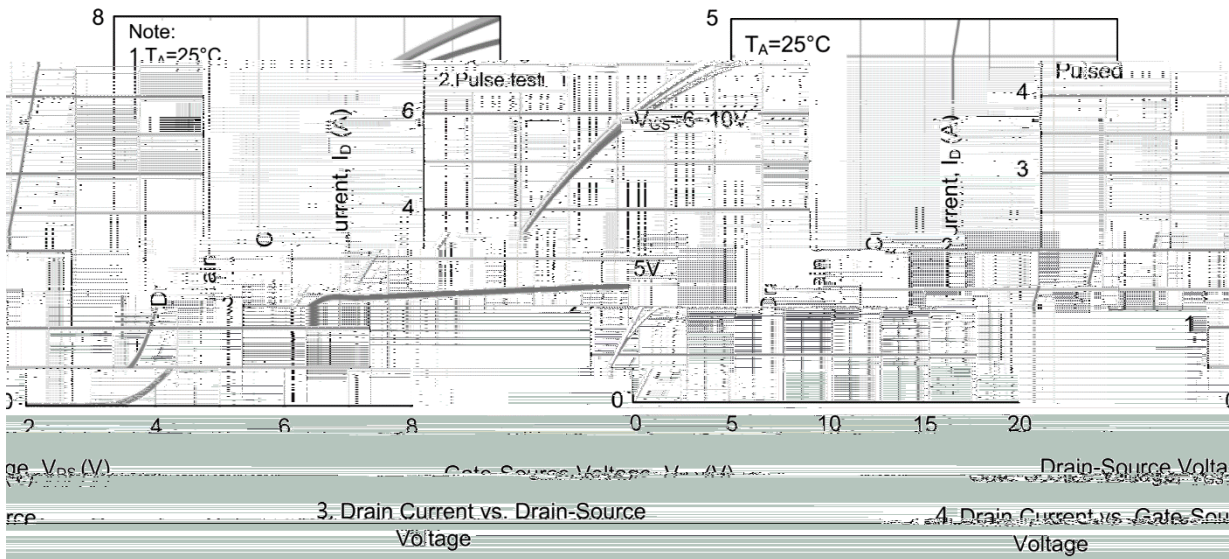
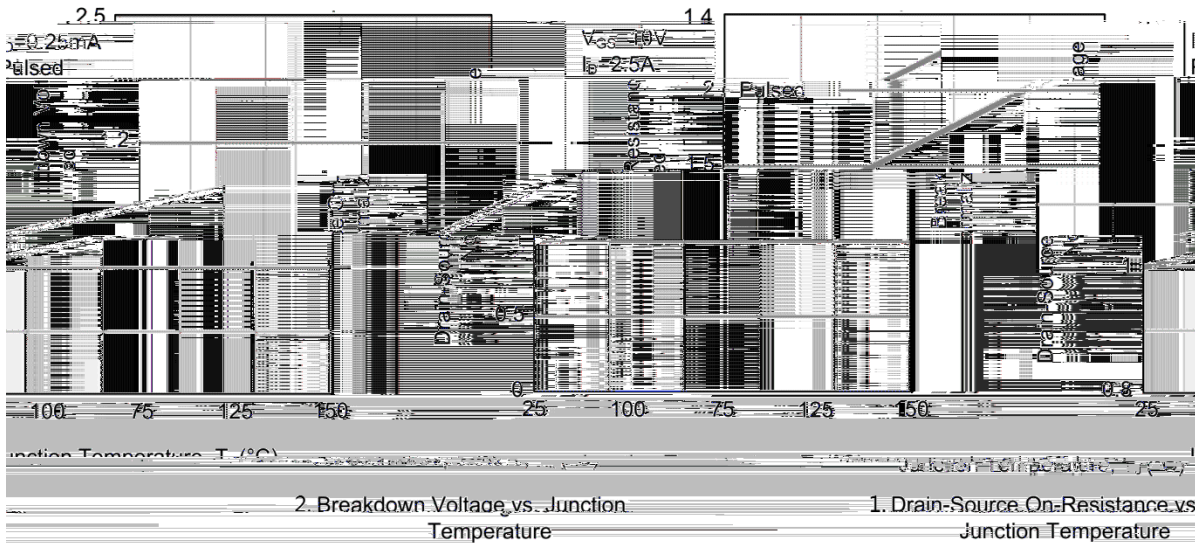
| Parameter | Symbol | Rating | Unit |
|---|-----------------------------|------------|---------------------------|
| Drain-Source Voltage | V_{DSS} | 500 | V |
| Drain Current | $I_D(T_C=25^\circ\text{C})$ | 7 | A |
| Drain Current - Pulsed | I_{DM} | 28 | A |
| Gate-Source Voltage | V_{GS} | ± 30 | V |
| Single Pulsed Avalanche Energy | E_{AS} | 392 | mJ |
| Avalanche Current | I_{AS} | 8.4 | A |
| Power Dissipation | $P_D(T_C=25^\circ\text{C})$ | 50 | W |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to 150 | |
| Junction to Ambient | R_{JA} | 110 | $^\circ\text{C}/\text{W}$ |
| Junction to Case | R_{JC} | 2.5 | $^\circ\text{C}/\text{W}$ |

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|------------------------------------|--------------|-------------------------------------|-----|-----|-----------|---------|
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V$ $I_D=250\mu A$ | 500 | 554 | | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=500V$ $V_{GS}=0V$ | | | 1 | μA |
| Gate-Body Leakage Current Forward | I_{GSS} | $V_{GS}=\pm 30V$ $V_{DS}=0V$ | | | ± 100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}$ $I_D=250\mu A$ | 2.0 | 2.9 | 4.0 | V |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=10V$ $I_D=3.0A$ | | 1.2 | 1.5 | |
| Drain-Source Diode Forward Voltage | V_{SD} | $V_{GS}=0V$ $I_S=1.0A$ | | | 1.4 | V |
| Input Capacitance | C_{iss} | $V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$ | | 570 | | |

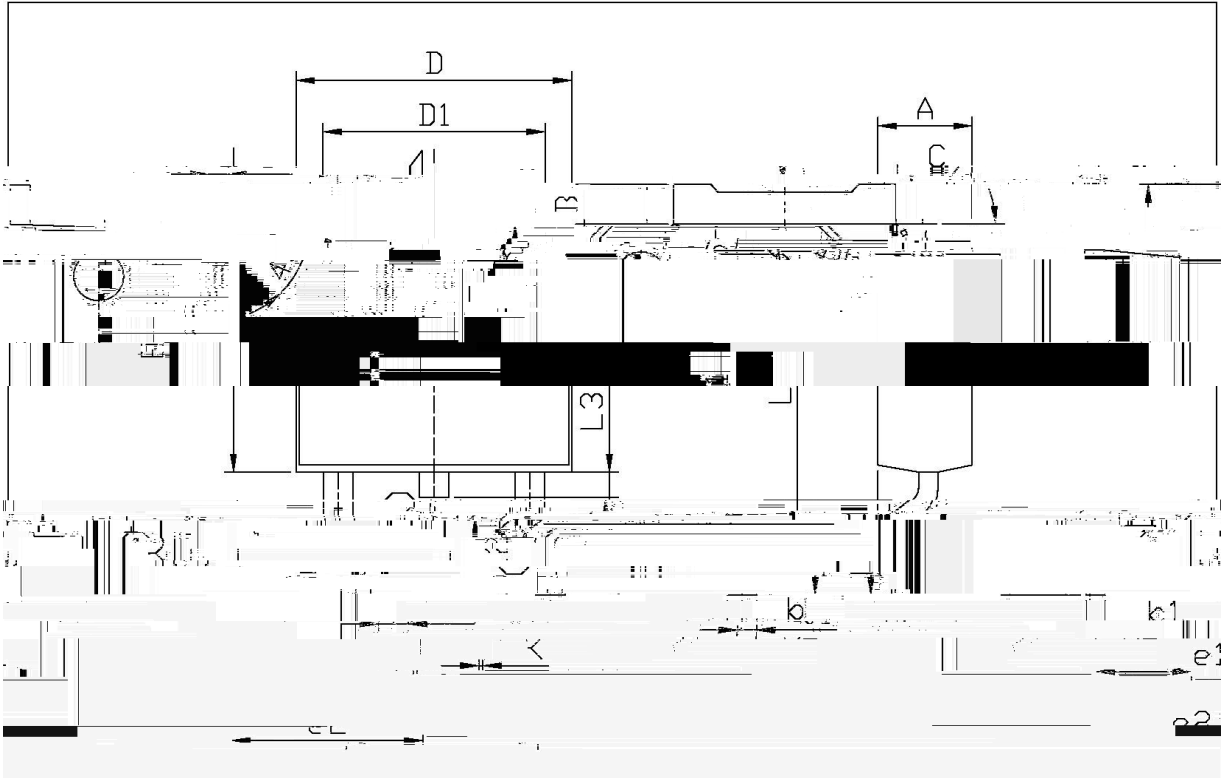
/ Electrical Characteristics(Ta=25)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|--------------|---|-----|------|-----|------|
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DD}=100V$ $I_D=7.0A$ $V_{GS}=10V$ $R_G=25$ | | 11 | | ns |
| Turn-On Rise Time | t_r | | | 17.5 | | |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 53 | | |
| Turn-Off Fall Time | t_f | | | 32 | | |
| Maximum Continuous Drain-Source Diode Forward Current | I_S | | | | 7 | A |
| Maximum Pulsed Drain-Source Diode Forward Current | I_{SM} | | | | 28 | A |
| Reverse Recovery Time | t_{rr} | $V_{GS}=0V$ $I_S=7.0A$ $dI_F/dt=100 A/\mu s$ | | 90 | | ns |
| Reverse Recovery Charge | Q_{rr} | | | 250 | | nC |

/ Electrical Characteristic Curve



/ Package Dimensions

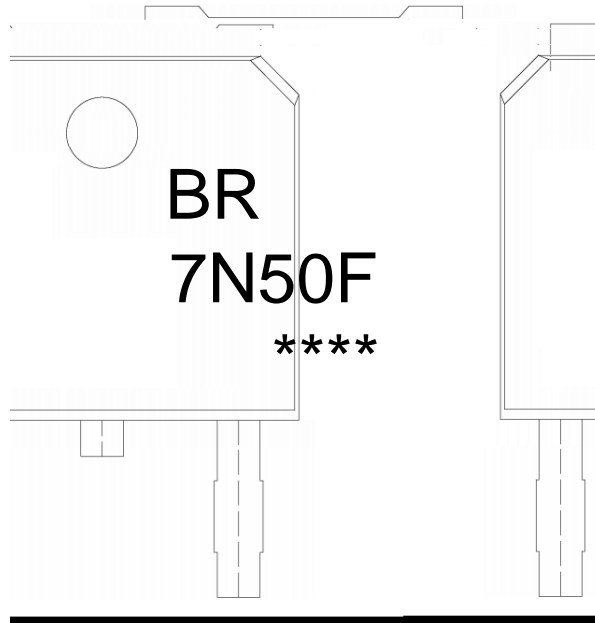


单位: mm

| Dimensions | | In Millimeters | | Dimensions | | In Millimeters | |
|------------|-----|----------------|------|------------|--------|----------------|------|
| Min | Max | Symbol | Min | Max | Symbol | Min | Max |
| | | B | 0.95 | 1.25 | e1 | 2.24 | 2.34 |
| | | b | 0.70 | 0.90 | | 4.72 | 4.72 |
| | | b1 | 0.45 | 0.55 | | 0.85 | 1.05 |
| | | D1 | 5.10 | 5.50 | | 0.00 | 0.10 |

T0-252

/ Marking Instructions



BR

7N50F

Note:

BR: Company Code

7N50F: Product Type Code

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

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