# BRB7N65

Rev.E Aug.-2017

DATA SHEET

## / Descriptions

TO-263 ṂṂ Ḫ N ۆ MOS ʃ ᾦ Ẓ ٦ N-CHANNEL MOSFET in a TO-263 Plastic Package.

## / Features

Ḫ ɔ U/Ḫ ɾ ɨ ɔ ḳ/À ʜ ʰ ỷ ȍ

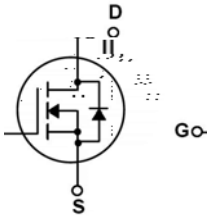
Low gate charge, low crss, fast switching.

## / Applications

ᾷ ᾶ ı ' GF2GF ᾗ ̈Ω ᵓ ı ' À ʜ

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

## / Equivalent Circuit




## / Pinning




PIN1 χ G PIN 2,4 χ D PIN 3 χ S

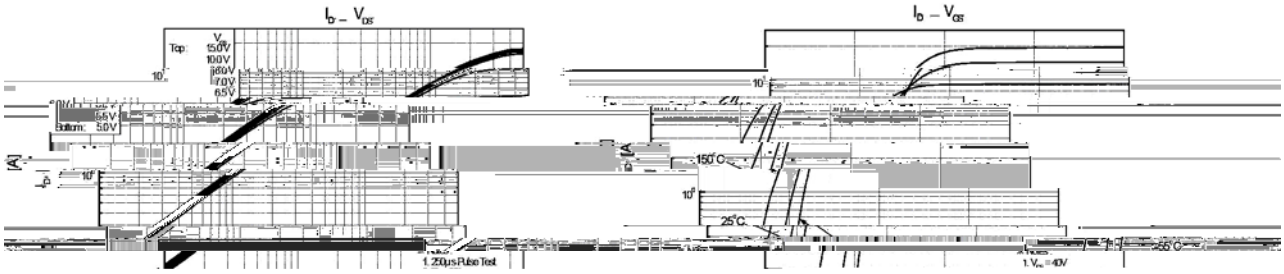
## / $h_{FE}$ Classifications & Marking

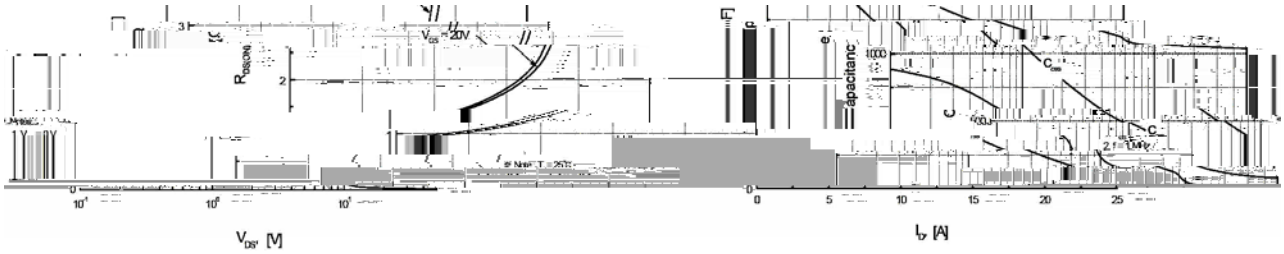
ȍ ʍ ٦ ب ˝ See Marking Instructions.

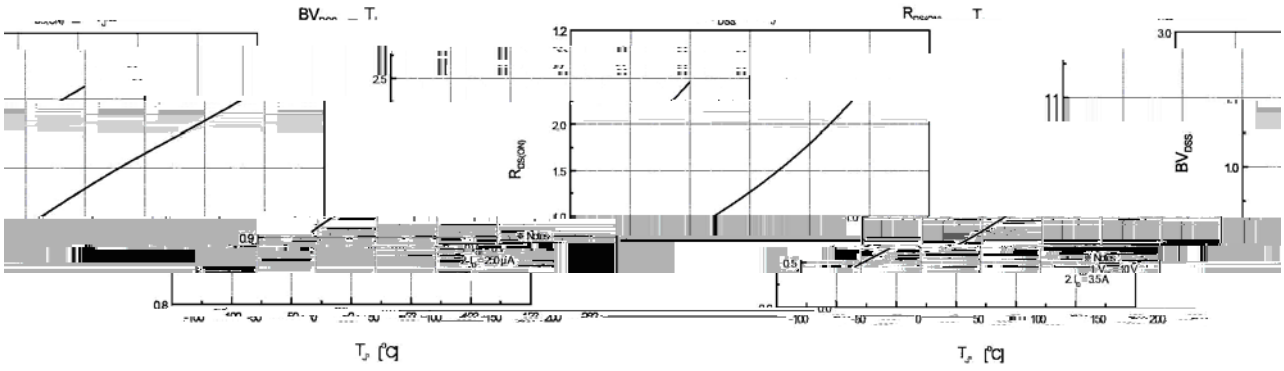
| v ̈Ω<br>Parameter | ɬ N<br>Symbol | ̈Ω Ö<br>Rating | D Ĥ<br>Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DSS}$ | 650 | V |
| Drain Current | $I_D$(Tc=25 ) | 7.0 | A |
| Drain Current | $I_D$(Tc=100 ) | 4.4 | A |
| Drain Current - Pulsed | $I_{DM}$ | 28 | A |
| Gate-Source Voltage | $V_{GS}$ | ±30 | V |
| Single Pulsed Avalanche Energy | $E_{AS}$ | 420 | mJ |
| Repetitive Avalanche Energy | $E_{AR}$ | 14.7 | mJ |
| Avalanche Current | $I_{AR}$ | 7.0 | A |
| Power Dissipation | $P_D$(Tc=25 ) | 147 | W |
| Operating and Storage Temperature Range | $T_J$,$T_{STG}$ | -55 to 150 | |

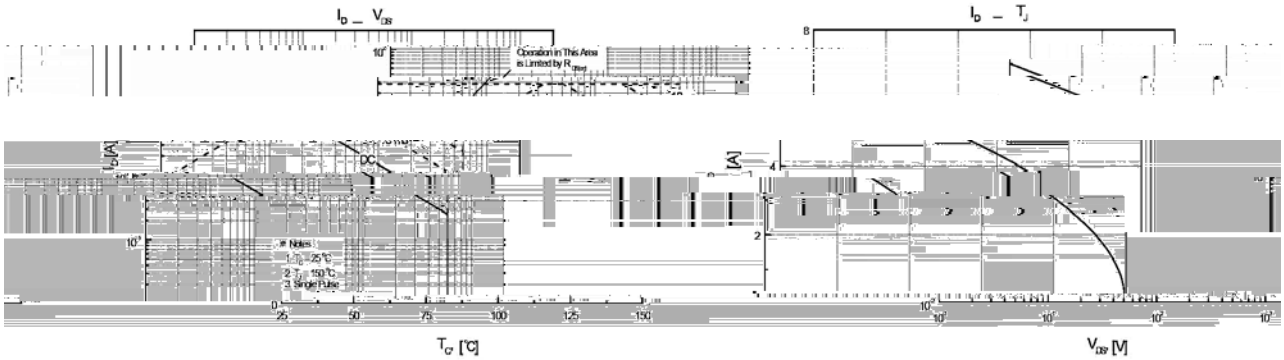
| v ̈Ω<br>Parameter | ɬ N<br>Symbol | ⊥⊥ ;ǀ Ţ<br>Test Conditions | ω ṇ Ö<br>Min | Ɛ ʒ Ö<br>Typ | ω ᶻ Ö<br>Max | D Ĥ<br>Unit |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $V_{GS}$=0V $I_D$=250 A | 650 | | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=650V $V_{GS}$=0V | | | 1.0 | A |
| | | $V_{DS}$=520V $T_C$=125 | | | 100 | A |
| Gate-Body Leakage Current Forward | $I_{GSS}$ | $V_{GS}$=±30V $V_{DS}$=0V | | | ±100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$ $I_D$=250 A | 2.0 | | 4.0 | V |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}$=10V $I_D$=3.5A | | | 1.3 | |
| Forward Transconductance | $g_{FS}$ | $V_{DS}$=40V $I_D$=3.5A | | 8.2 | | S |
| Drain-Source Diode Forward Voltage | $V_{SD}$ | $V_{GS}$=0V $I_S$=7.0A | | | 1.4 | V |

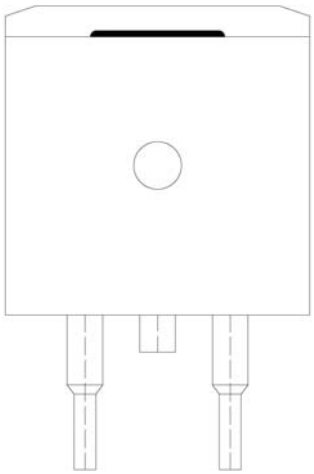
## / Electrical Characteristic Curve





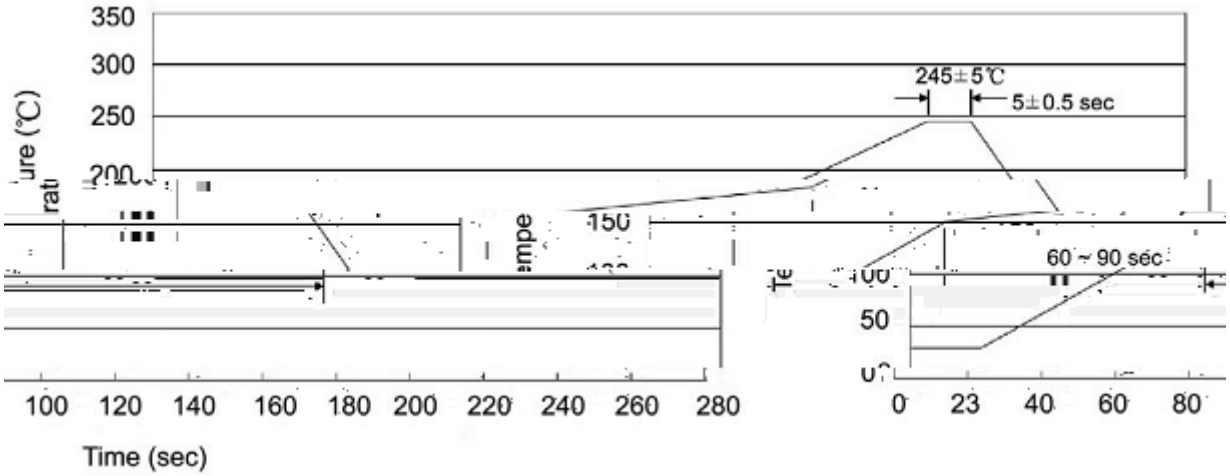
ب ˝ χ

| | |
|---|---|
| BR χ | ѭ ʒ ᴵ ᴵ |
| 7N65 χ | ѭ ʒ ᴺ ᴵ |
| ---- χ | ѭ ɨ ɾ ŋ̈ ᴺ ᴵ ɨ ɐ ɨ ɾ ŋ̈ ᴺ ᴹ ᴾ |

Note:

| | |
|---|---|
| BR: | Company Code |
| 7N65: | Product Type. |
| ****: | Lot No. Code, code change with Lot No. |

## ( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)




ب ˝ χ

1 ⺊ ♬ □ ỷ 25 Ḱ 150 ɫ ı `H ڑ 60 Ḱ 90sec;

2 Š Ö □ ỷ 245 ° 5 ɫ ı `H ڑ ˋY ⺈ ⺮ 5 ° 0.5sec;

3 ì ˙ ⺈ ˛ ɔ ⺌ ỷ ⺮ 2 Ḱ 10 ɫ /sec.

Note:

1.Preheating:25~150 ɫ , Time:60~90sec.

2.Peak Temp.:245 ° 5 ɫ , Duration:5 ° 0.5sec.

3. Cooling Speed: 2~10 ɫ /sec.

## / Resistance to Soldering Heat Test Conditions

□ ỷ χ 260 ° 5 ɫ `H ڑ χ 10 ° 1 sec. Temp.:260±5 Time:10±1 sec

## / Packaging SPEC.

ɔ` γ ⊢ / REEL

| Package Type | Units | | | | | Dimension (unit mm$^3$) | | |
|---|---|---|---|---|---|---|---|---|
| | Units/Reel / | Reels/Inner Box / | Units/Inner Box / | Inner Boxes/Outer Box / | Units/Outer Box / | Reel | Inner Box | Outer Box |
| TO-263 | 800 | 1 | 800 | 5 | 4,000 | 13 ×24 | 360×360×50 | 385×257×392 |

˘ ˥ γ ⊢ / TUBE