

BRCS050N04BD

Rev.B Nov.-2022

/ Descriptions

TO-263 N
N-CHANNEL MOSFET in a TO-263 Plastic Package.

/ Features

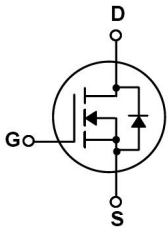
Ultra Low On-Resistance,fast switching,HF Product.

/ Applications

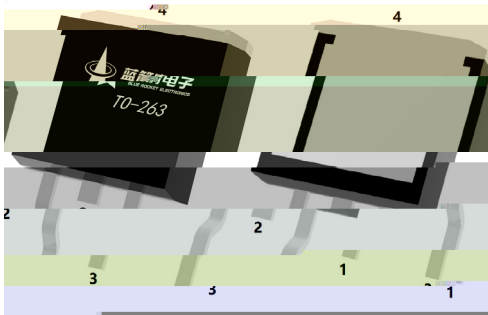
PFC

These devices are well suited for high efficient switched mode power supplies Active power factor correction, electronic lamp ballast based on half bridge topology.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 4 D PIN 3 S

/ Marking

See Marking Instructions.

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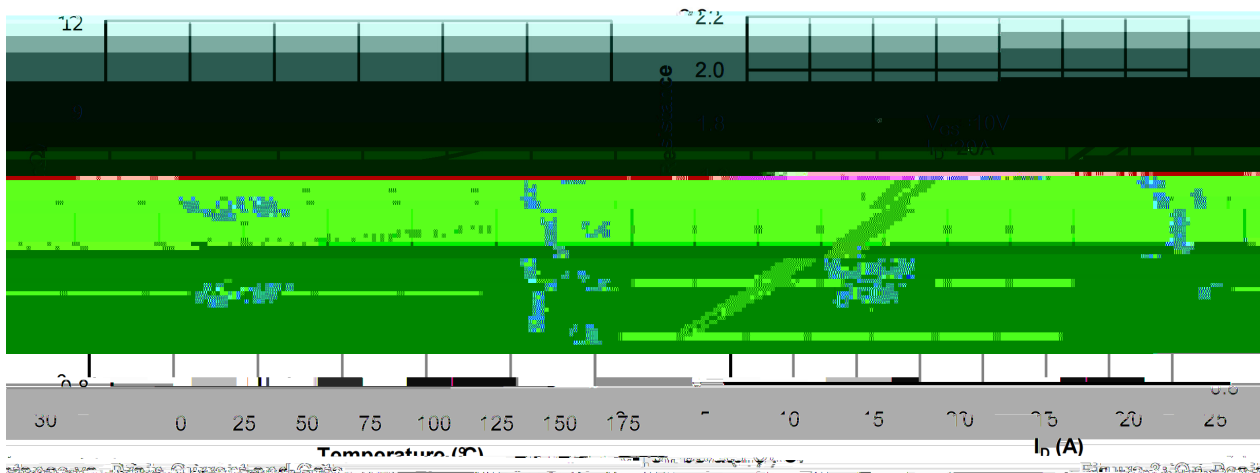
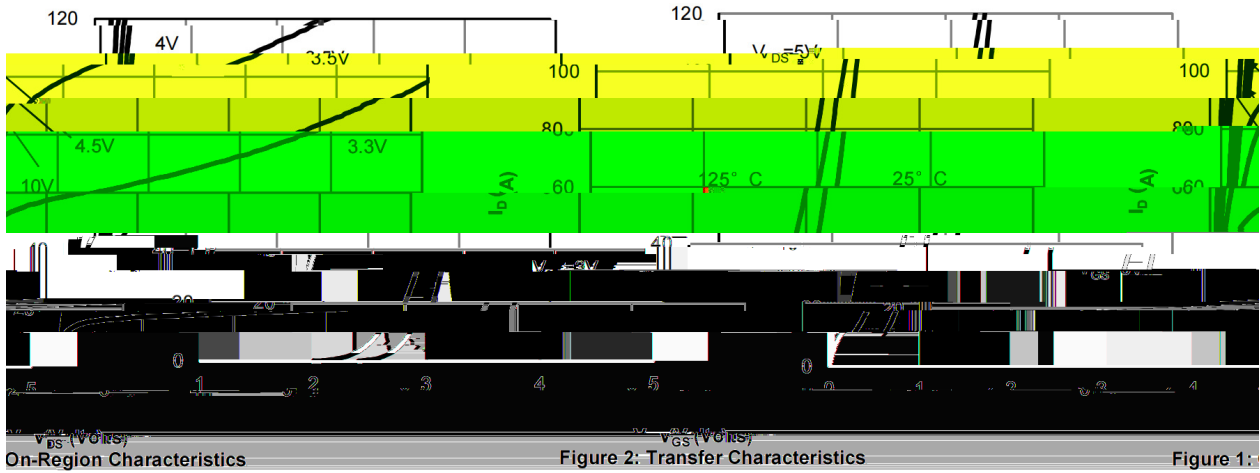
| Parameter | | Symbol | Rating | Unit |
|---|---------------|-----------------------------|------------|------|
| Drain-Source Voltage | | V_{DSS} | 40 | V |
| Drain Current | | $I_D(T_C=25^\circ\text{C})$ | 196 | A |
| Pulsed Drain Current | | I_{DM} | 500 | A |
| Gate-Source Voltage | | V_{GS} | ± 20 | V |
| Single Pulsed Avalanche Energy(L=0.5mH) | | E_{AS} | 561.8 | mJ |
| Avalanche Current | | I_{AS} | 26.5 | A |
| Total Power Dissipation | | $P_D(T_C=25^\circ\text{C})$ | 347 | W |
| Junction and Storage Temperature Range | | T_J, T_{STG} | -55 to 150 | |
| Thermal Resistance-Junction to Ambient | t ≤ 10 s | R_{JA} | 15 | /W |
| | Steady-State | | 60 | |
| Thermal Resistance-Junction to Case | Steady-State | R_{JC} | 0.36 | |

Parameter

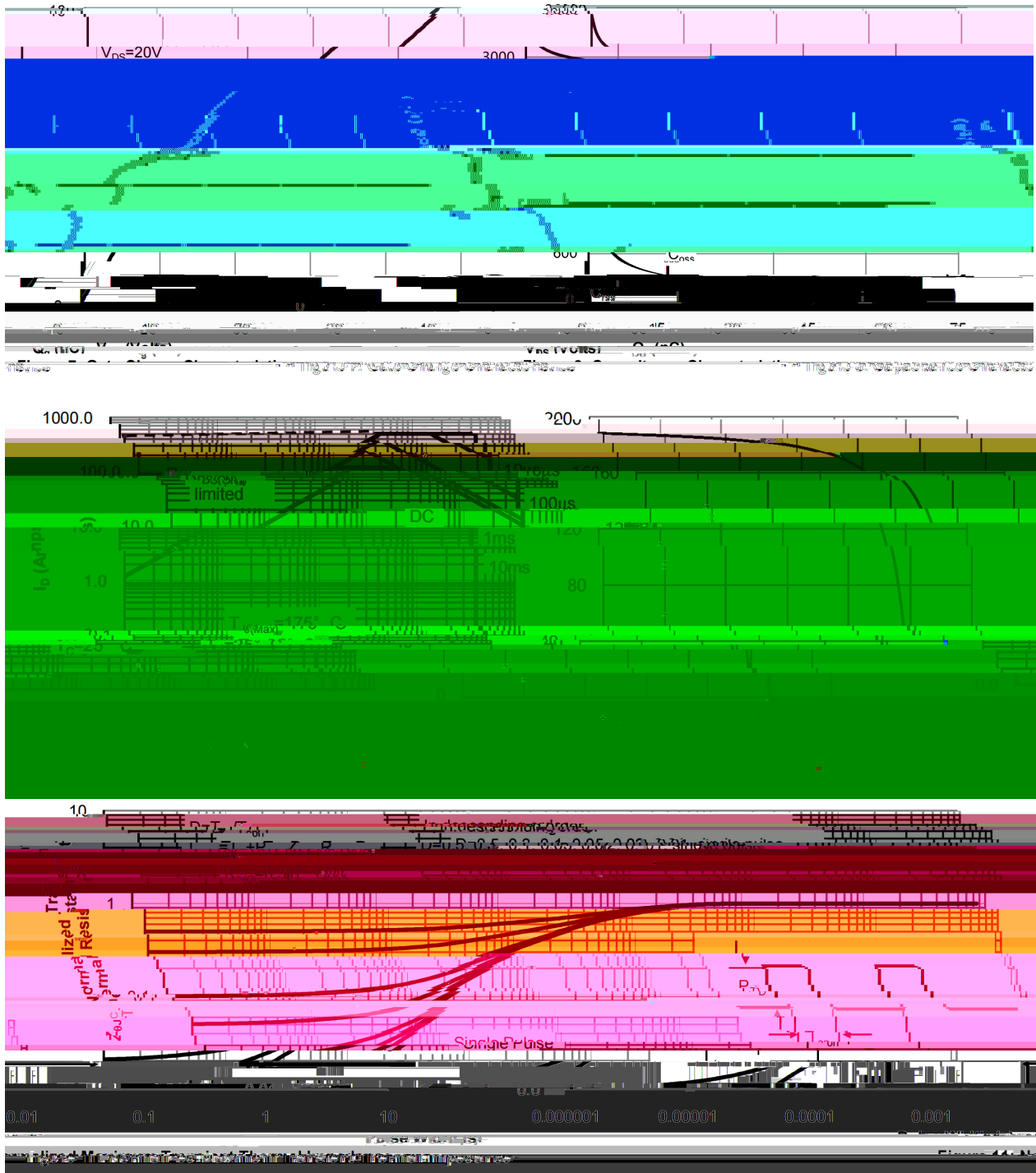
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------|--------------|--|-----|-----|-----|------|
| Total Gate Charge | $Q_g(10V)$ | $V_{GS}=10V$ $V_{DS}=20V$ $I_D=20A$ | | 70 | | nC |
| Total Gate Charge | $Q_g(4.5V)$ | | | 15 | | |
| Gate Source Charge | Q_{gs} | | | 15 | | |
| Gate Drain Charge | Q_{gd} | | | 22 | | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{GS}=10V$ $V_{DS}=20V$ $R_L=1$ $R_{GEN}=3$ | | 15 | | ns |
| TuTime | t_r | | | 30 | | |
| Tuf Delay Time | $t_{d(off)}$ | | | 54 | | |
| Tuf Fall Time | t_f | | | 20 | | |

3

/ Electrical Characteristic Curve



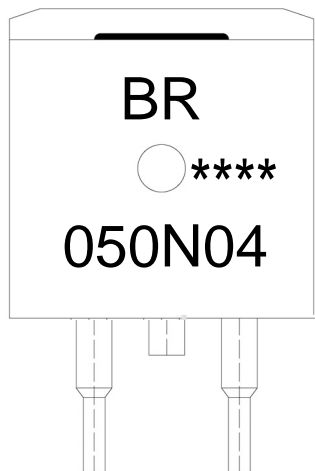
/ Electrical Characteristic Curve



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/ Marking Instructions



BR

050N 04

Note:

BR: Company Code

050N04: Product Type

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

