## / Absolute Maximum Ratings($T_a$=25 )

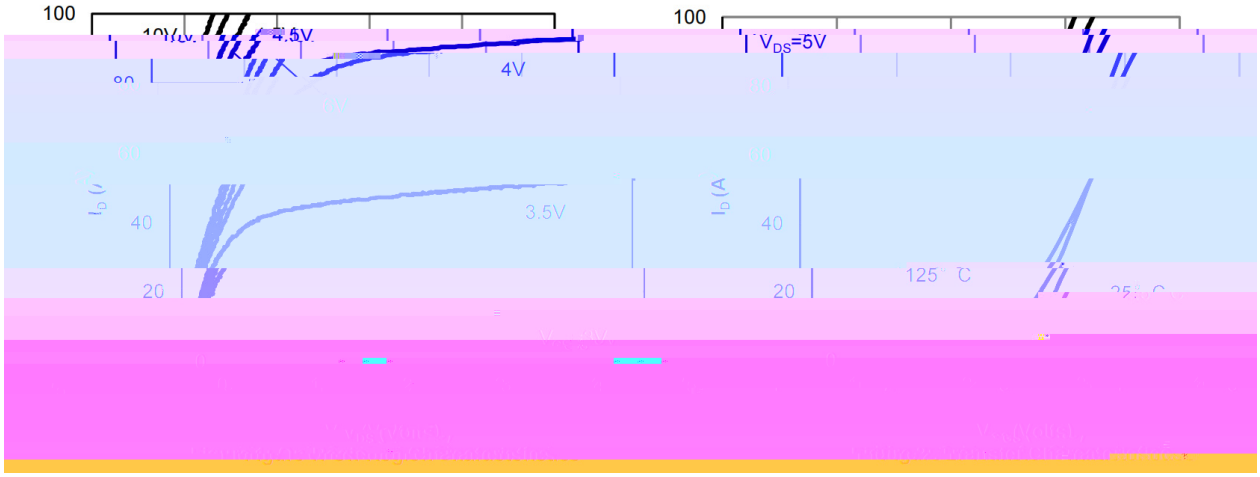
| Parameter | | Symbol | Rating | Unit |
|---|---|---|---|---|
| Drain-Source Voltage | | $V_{DS}$ | 100 | V |
| Continuous Drain Current | | $I_D$ | 46 | A |
| Pulsed Drain Current | | $I_{DM}$ | 184 | A |
| Gate-Source Voltage | | $V_{GS}$ | ± 20 | V |
| Power Dissipation | | $P_D$($T_c$=25 ) | 78 | W |
| Avalanche energy(L=0.5mH) | | $E_{AS}$ | 24.5 | mJ |
| Avalanche Current(L=0.5mH) | | $I_{AS}$ | 7.0 | A |
| Junction and Storage Temperature Range | | $T_j$, $T_{stg}$ | -55 to 150 | |
| Maximum Junction-to-Ambient | t ≤ 10s | $R_{\theta JA}$ | 17 | / W |
| | Steady-State | | 55 | |
| Maximum Junction-to-Case | Steady-State | $R_{\theta JC}$ | 1.6 | |

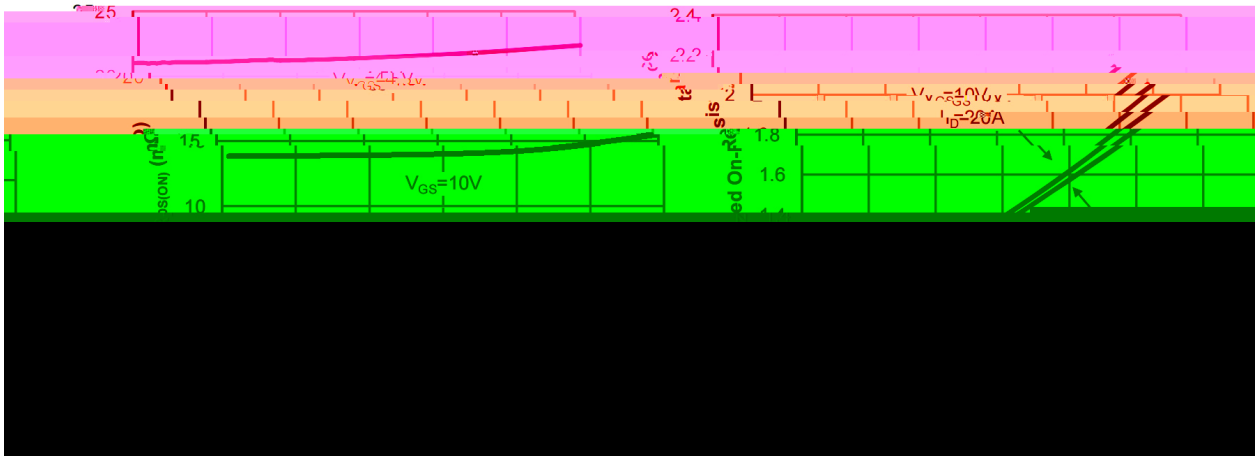
## / Electrical Characteristics(Ta=25 )

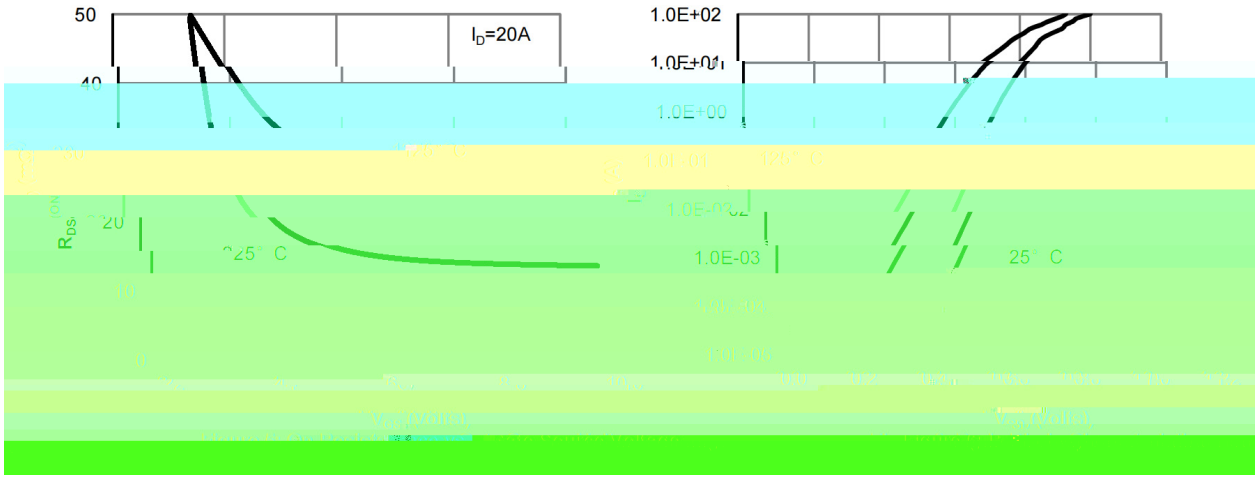
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $I_D$=250uA, $V_{GS}$=0V | 100 | 109 | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=100V, $V_{GS}$=0V | | | 1 | uA |
| Gate-Body leakage current | $I_{GSS}$ | $V_{DS}$=0V, $V_{GS}$= ±20V | | | ±100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$, $I_D$=250uA | 1.0 | 1.7 | 2.5 | V |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}$=10V, $I_D$=20A | | 14.8 | 15 | mΩ |
| | | $V_{GS}$=4.5V, $I_D$=10A | | 20.4 | 25 | |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=1A, $V_{GS}$=0V | | | 1.2 | V |
| Input Capacitance | $C_{iss}$ | $V_{DS}$=25V $V_{GS}$=0V f=1.0MHz | | 1140 | | pF |
| Output Capacitance | $C_{oss}$ | | | 600 | | |
| Reverse Transfer Capacitance | $C_{rss}$ | | | 60 | | |
| Gate resistance | $R_g$ | $V_{GS}$=0V $V_{DS}$=0V f=1MHz | | 1.6 | | Ω |
| Total Gate Charge | $Q_{g(10V)}$ | $V_{GS}$=10V, $V_{DS}$=50V, $I_D$=20A | | 32.5 | | nC |
| Total Gate Charge | $Q_{g(4.5V)}$ | | | 15.5 | | |
| Gate Source Charge | $Q_{gs}$ | | | 6.5 | | |
| Gate Drain Charge | $Q_{gd}$ | | | 5 | | |

# BRCS150N10SZCQ

## / Electrical Characteristic Curve



## / Electrical Characteristic Curve

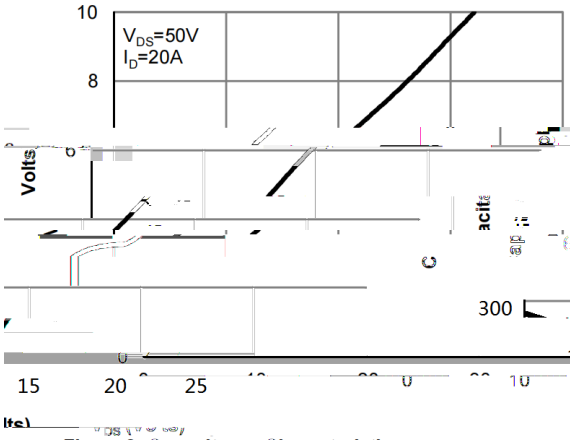



Figure 8: Capacitance Characteristics

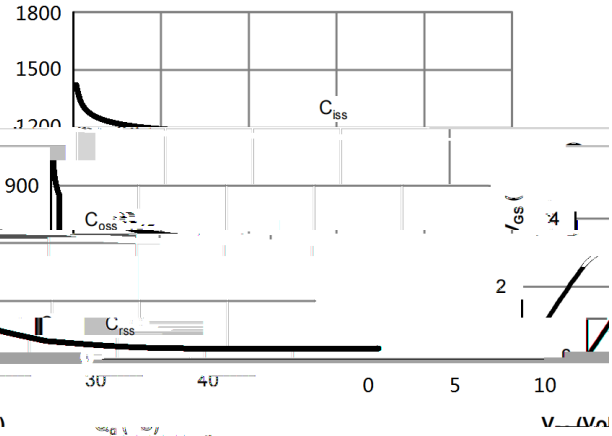
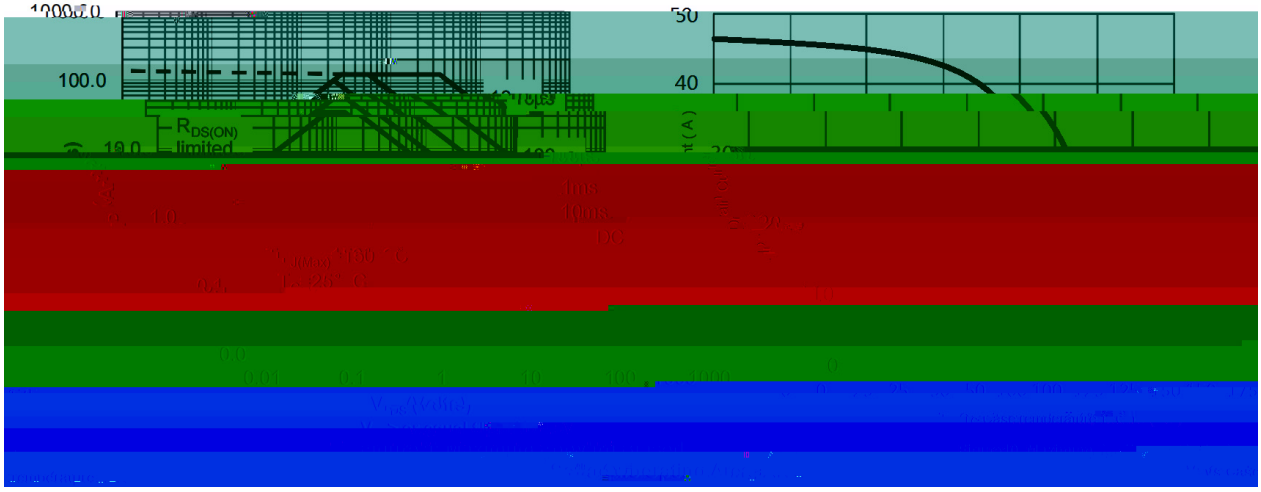
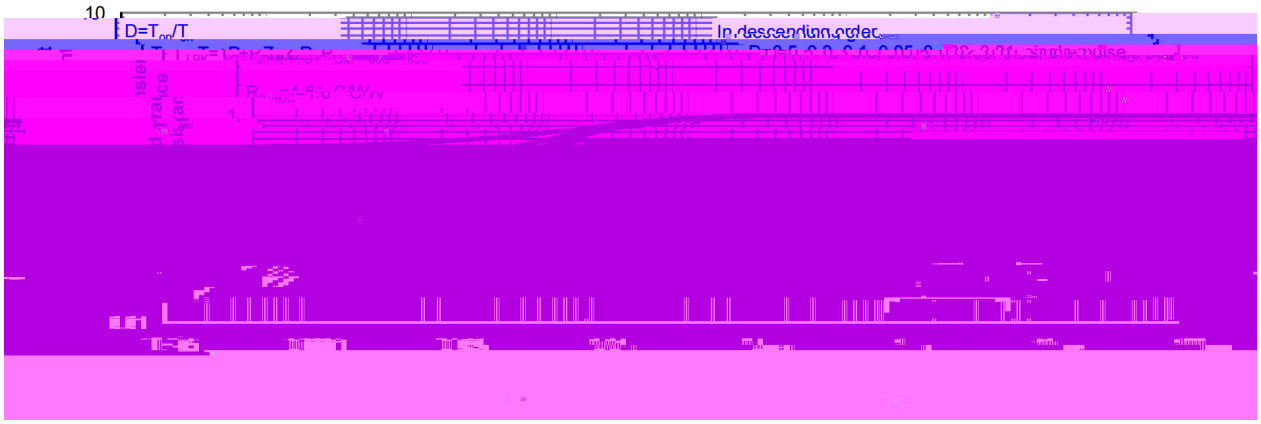



Figure 7: Gate-Charge Characteristics



## / Package Dimensions



## / Marking Instructions




BR

Q

150N10S

****

Note

| | |
|---|---|
| BR | Company Code |
| Q: | Automobile halogen-free product Code |
| 150N10S | Product Type Code |
| ****: | Lot No. Code, code change with Lot No |

## ( ) /

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Note:

| | | | | |
|---|---|---|---|---|
| 1 | 150 200 | 60 120sec; | 1.Preheating:150~200 | , Time:60~120sec. |
| 2 | 255±5 | 5±0.5sec; | 2.Peak Temp.:255±5 | , Duration:5±0.5sec. |
| 3 | 2 10 /sec. | | 3. Cooling Speed: 2~10 /sec. | |

## / Resistance to Soldering Heat Test Conditions

| | | | |
|---|---|---|---|
| 260±5 | 10±1 sec. | Temp.:260±5 | Time:10±1 sec |

## / Packaging SPEC.

/ REEL

| Package Type | Units | Dimension | (unit mm³) |
|---|---|---|---|