

## / Descriptions

TO-263 N

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

## / Features

 $V_{DS}=60V$   $I_D=162A$  $R_{DS(on)}@10V \leq 3.5m\Omega$  (Type.3.3m $\Omega$ )

AEC-Q101

Qualified to AEC-Q101 Standards for High Reliability,

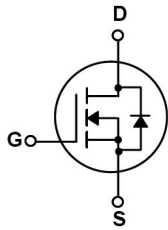
HF Product.

## / Applications

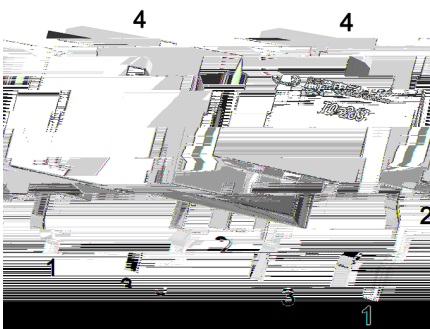
BMS

High frequency switching and synchronous rectification,BMS,Motor, Meet the stringent requirements of automotive applications.

## / Equivalent Circuit



## / Pinning



PIN1 G      PIN 2 4 D      PIN 3 S

## / Marking

See Marking Instructions.

/ Absolute Maximum Ratings( $T_a=25^\circ\text{C}$ )

| Parameter                                          |                     | Symbol                      | Rating     | Unit |
|----------------------------------------------------|---------------------|-----------------------------|------------|------|
| Drain-Source Voltage                               |                     | $V_{DS}$                    | 60         | V    |
| Drain Current                                      |                     | $I_D(T_c=25^\circ\text{C})$ | 162        | A    |
| Pulsed Drain Current                               |                     | $I_{DM}$                    | 466        | A    |
| Gate-Source Voltage                                |                     | $V_{GS}$                    | 20         | V    |
| Single Pulsed Avalanche Energy( $L=0.5\text{mH}$ ) |                     | $E_{AS}$                    | 820        | mJ   |
| Avalanche Current                                  |                     | $I_{AS}$                    | 40.5       | A    |
| Total Power Dissipation                            |                     | $P_D(T_c=25^\circ\text{C})$ | 170        | W    |
| Junction and Storage Temperature Range             |                     | $T_J, T_{STG}$              | -55 to 150 |      |
| Thermal Resistance-Junction to Ambient             | $t \leq 10\text{s}$ | $R_{\theta JA}$             | 23         | /W   |
|                                                    | Steady-State        |                             | 75         |      |
| Thermal Resistance-Junction to Case                | Steady-State        | $R_{\theta JC}$             | 0.74       |      |

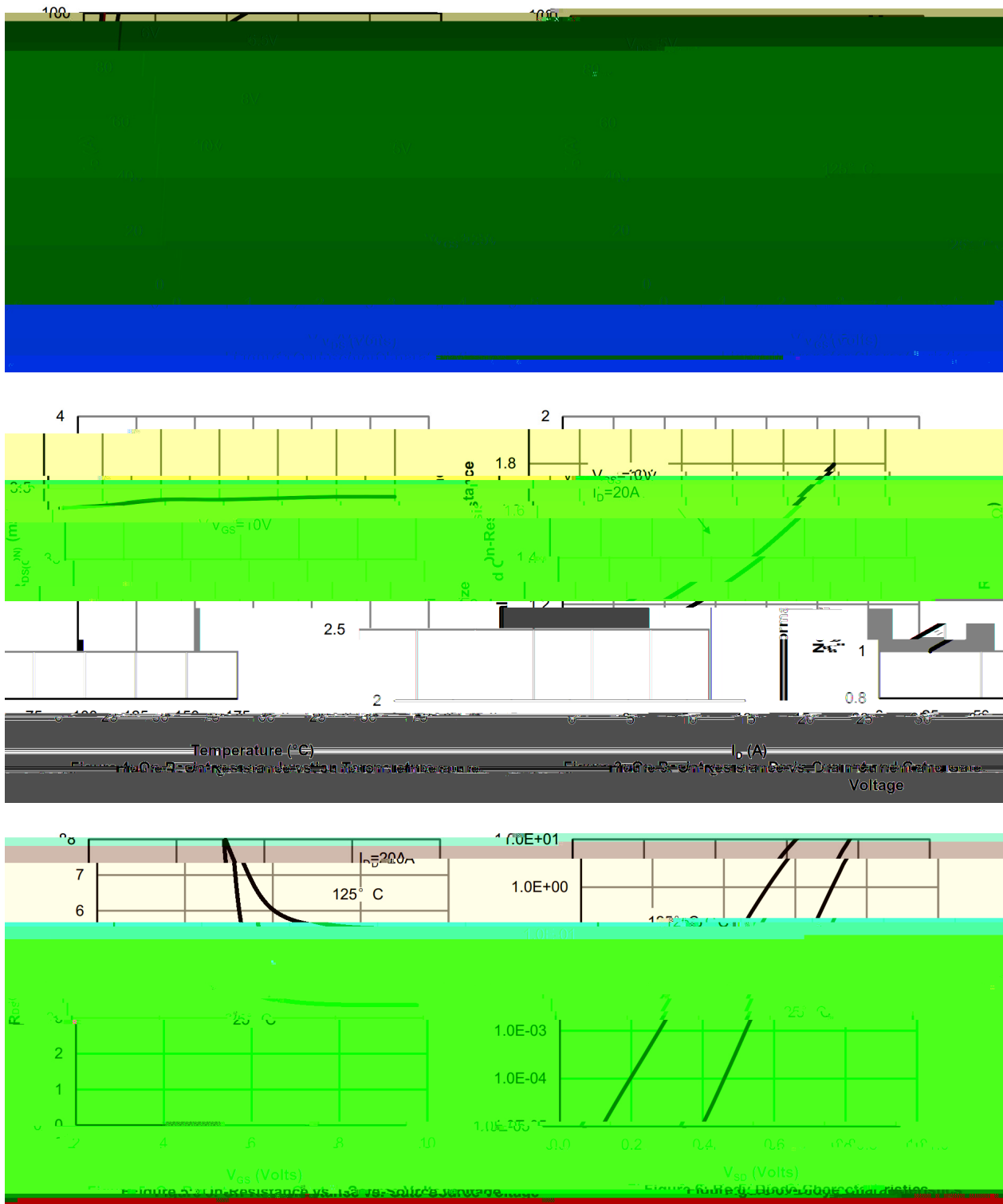
/ Electrical Characteristics( $T_a=25^\circ\text{C}$ )

| Parameter                         | Symbol       | Test Conditions                                        | Min | Typ  | Max       | Unit             |
|-----------------------------------|--------------|--------------------------------------------------------|-----|------|-----------|------------------|
|                                   | $BV_{DSS}$   | $I_D=250\mu\text{A}, V_{GS}=0\text{V}$                 | 60  | 70   |           | V                |
| Zero Gate Voltage Drain Current   | $I_{DSS}$    | $V_{DS}=60\text{V}, V_{GS}=0\text{V}$                  |     |      | 1.0       | $\mu\text{A}$    |
| Gate-Body leakage current         | $I_{GSS}$    | $V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$              |     |      | $\pm 100$ | nA               |
| Gate Threshold Voltage            | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu\text{A}$                    | 2.0 |      | 4.0       | V                |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}=10\text{V}, I_D=20\text{A}$                    |     | 3.3  | 3.5       | $\text{m}\Omega$ |
| Diode Forward Voltage             | $V_{SD}$     | $I_S=1\text{A}, V_{GS}=0\text{V}$                      |     |      | 1.2       | V                |
| Input Capacitance                 | $C_{iss}$    | $V_{DS}=25\text{V}, V_{GS}=0\text{V}, f=1.0\text{MHz}$ |     | 4400 |           | pF               |
| Output Capacitance                | $C_{oss}$    |                                                        |     | 1400 |           |                  |
| Reverse Transfer Capacitance      | $C_{rss}$    |                                                        |     | 73   |           |                  |
| Gate resistance                   | $R_g$        | $V_{GS}=0\text{V}, V_{DS}=0\text{V}, f=1\text{MHz}$    |     | 1.1  |           | $\Omega$         |
| Total Gate Charge                 | $Q_g$        | $V_{GS}=10\text{V}, V_{DS}=30\text{V}, I_D=20\text{A}$ |     | 42   |           | nC               |
| Gate Source Charge                | $Q_{gs}$     |                                                        |     | 14   |           |                  |
| Gate Drain Charge                 | $Q_{gd}$     |                                                        |     | 11   |           |                  |

**BRCS035N06SHBDQ**

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/ Electrical Characteristic Curve



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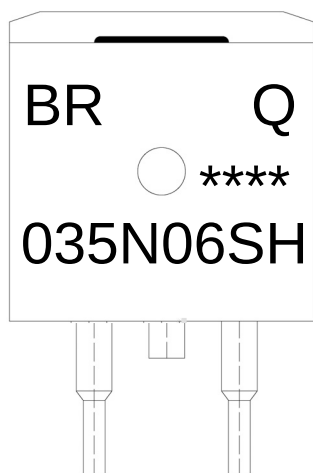
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**DATA SHEET**



## / Marking Instructions



BR

Q

035N06SH

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Note:

BR: Company Code

Q: Automobile halogen-free product Code

035N06SH: Product Type Code

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

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**蓝箭电子**  
BLUE ROCKET ELECTRONICS

**DATA SHEET**

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