## / Descriptions

SOT23-3 封装 P 沟道 MOS 场效应晶体管

S- CHANNEL MOSFET in a SOT23-3 Plastic Package.

## / Features

$V_{GS}$ =-4.5V, $I_D$ = -3.0A

$R_{DS(ON)}$, Typ:53mΩ@ $V_{GS}$=-4.5V, $I_D$ =-3.0A

$R_{DS(ON)}$, Typ:63mΩ@ $V_{GS}$=-2.5V, $I_D$ =-2.0A

$R_{DS(ON)}$, Typ:433mΩ@ $V_{GS}$=-1.8V, $I_D$ =-1.0A

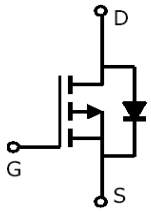
ESD 保护

## / Applications

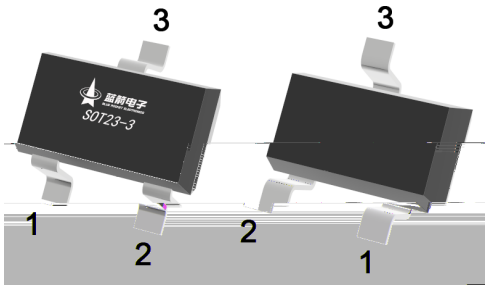
电源管理 笔记本电脑 便携设备 电池供电系统

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

## / Equivalent Circuit




## / Pinning




PIN1 G PIN 2 S PIN 3 D

## / Marking

| | |
|---|---|
| Marking | C6H |

## / Absolute Maximum Ratings(Ta=25 )

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DSS}$ | -16 | V |
| Gate-Source Voltage | $V_{GSS}$ | ±12 | V |
| Continuous Drain Current | $I_D$ | -7.0 | A |
| Pulsed Drain Current | $I_{DM}$ | -30 | A |
| Power Dissipation for Single Operation | $P_D$ | 1.2 | W |
| Maximum Junction Temperature | $T_j$ | 150 | |
| Storage Temperature Range | $T_{stg}$ | -55 150 | |
| Thermal Resistance-Junction to Ambient | $R_{\theta JA}$ | 100 | /W |

## / Electrical Characteristics(Ta=25 )

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $BV_{DSS}$ | $I_D$=-250μA $V_{GS}$=0V | -16 | -17 | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=-12.8V $V_{GS}$=0V | | | -1.0 | μA |
| Gate-Body leakage current | $I_{GSS}$ | $V_{DS}$=0V $V_{GS}$=±12V | | | ±100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=VGS $I_D$=-250μA | -0.5 | -0.6 | -1.0 | V |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}$=-4.5V $I_D$=-3.5A | | 17.5 | 20 | mΩ |
| | | $V_{GS}$=-2.5V $I_D$=-3.5A | | 26 | 30 | |
| | | $V_{GS}$=-1.8V $I_D$=-1A | | 40.5 | 100 | |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=-1A $V_{GS}$=0V | | | -1.2 | V |
| Gate resistance | Rg | $V_{GS}$=0V, $V_{DS}$=0V, f=1MHz | | 5.8 | | Ω |
| Input Capacitance | $C_{iss}$ | $V_{GS}$=0V $V_{DS}$=-5V f=1MHz | | 1350 | | pF |
| Output Capacitance | $C_{oss}$ | | | 290 | | |
| Reverse Transfer Capacitance | $C_{rss}$ | | | 250 | | |

## / Electrical Characteristics(Ta=25 )

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Total Gate Charge | $Q_g$ | $V_{GS}$=-4.5V, $V_{DS}$=-10V, $I_D$=-7.0A | | 13.2 | | nC |
| Gate Source Charge | $Q_{gs}$ | | | 1.5 | | |
| Gate Drain Charge | $Q_{gd}$ | | | 3.6 | | |
| Turn–On Delay Time | $t_{d(on)}$ | $V_{GS}$=-4.5V $I_D$=-7.0A $V_{DS}$=-10V $R_{GEN}$=3Ω | | 13.7 | | ns |
| Turn–On Rise Time | $t_r$ | | | 47.6 | | |
| Turn–Off Delay Time | $t_{d(off)}$ | | | 43.1 | | |
| Turn–Off Fall Time | $t_f$ | | | 29.5 | | |

## / Electrical Characteristic Curve

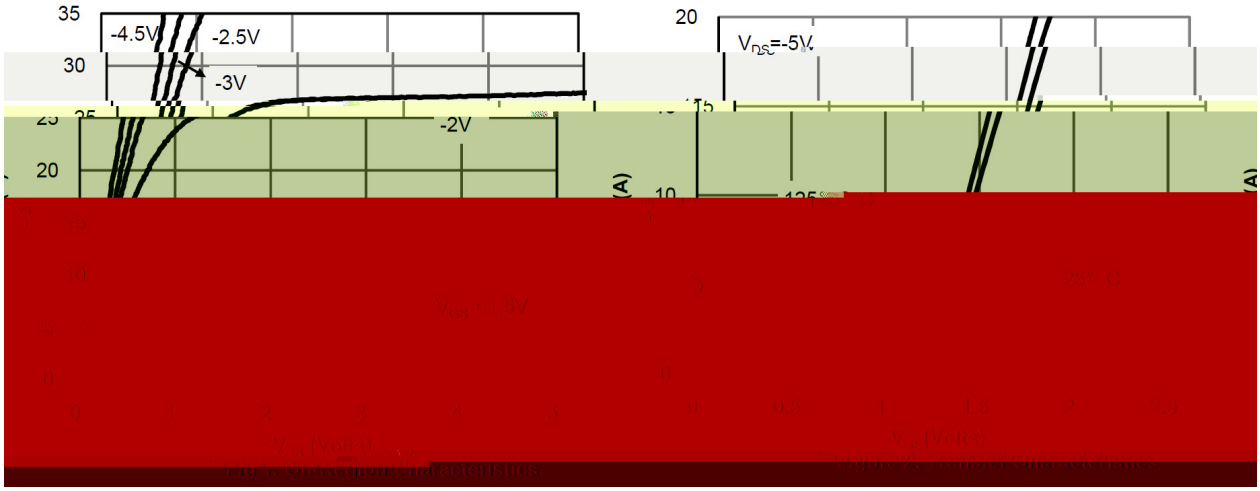



Figure 1: Conduction Characteristics

Figure 2: Transfer Characteristics

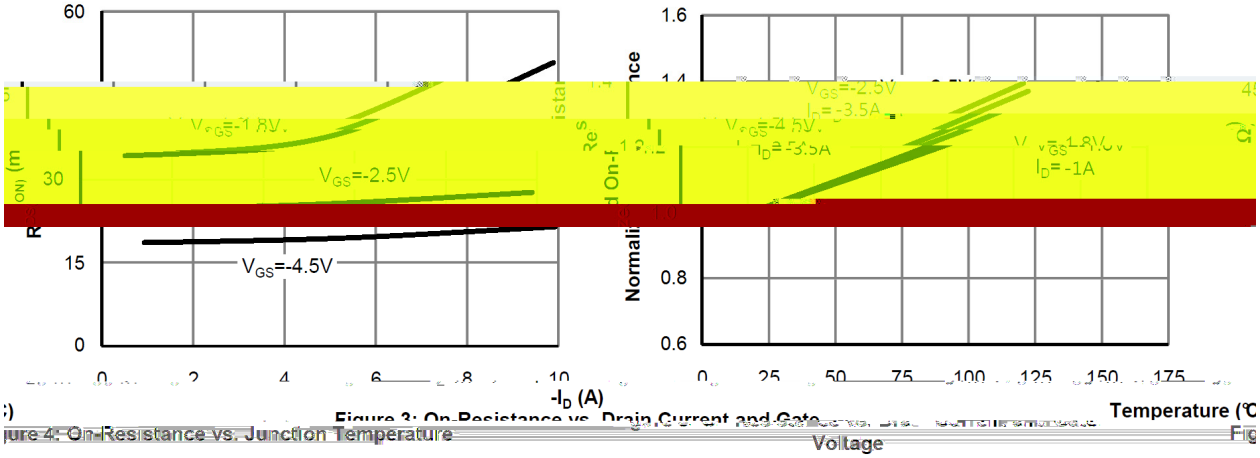



Figure 3: On-Resistance vs. Drain Current and Gate Voltage

Figure 4: On-Resistance vs. Junction Temperature

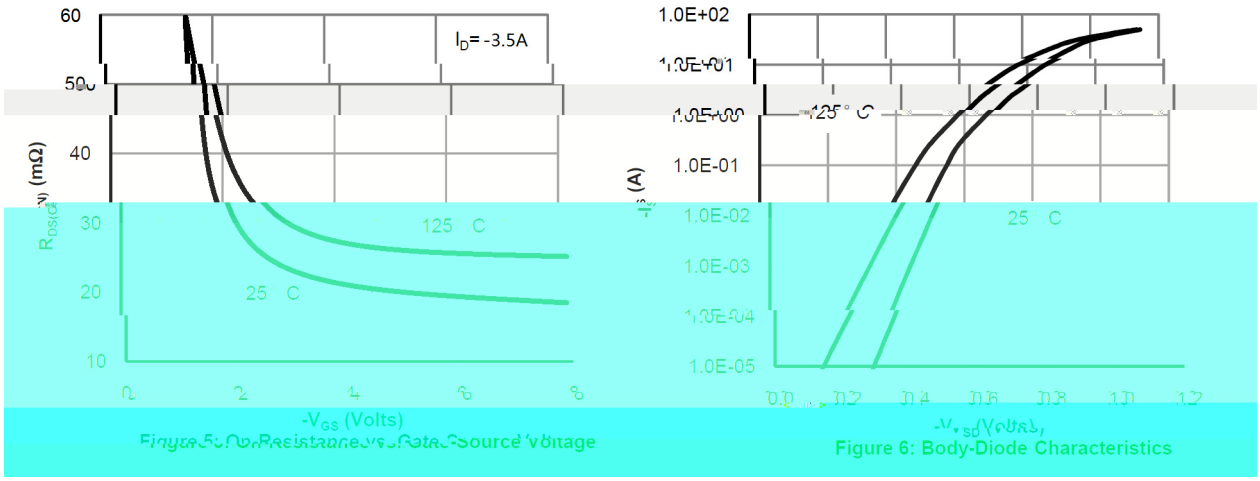
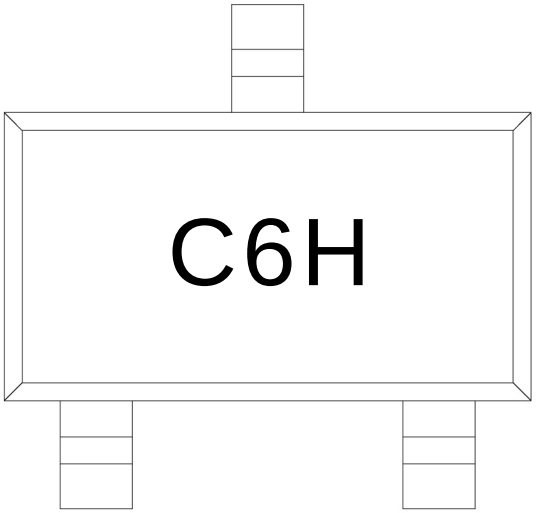



Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

## / Electrical Characteristic Curve

## / Marking Instructions




C6 N .

H И .

Note:

C6: Product Type Code

H: Company Code

**BRCS200P016MC**