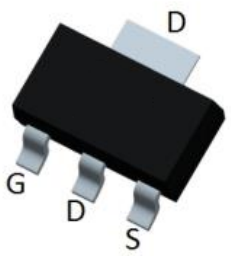
**Features**

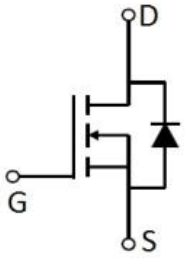
Low $R_{DS(on)}$ @$V_{GS}$=10V
5V Logic Level Control
N Channel SOT223 Package
Pb−Free, RoHS Compliant

| $V_{(BR)DSS}$ | $R_{DS(ON)}$ Typ | $I_D$ Max |
|---|---|---|
| 60V | 70mΩ @ 10V | 8A |
| | 80mΩ @ 4.5V | |

**Applications**

Bridge circuits
Industrial power supplies
Load Switch
Hand-Held Instruments
DC/DC Converters




**SOT223**

**Order Information**

| Product | Package | Marking | Packing |
|---|---|---|---|
| BUK9880-55ACUX-CN | SOT223 | 060N06 | 4000PCS/Reel |

**Absolute Maximum Ratings**

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

| Symbol | Parameter | | Rating | Unit |
|---|---|---|---|---|
| **Common Ratings ($T_A$=25°C Unless Otherwise Noted)** | | | | |
| $V_{GS}$ | Gate-Source Voltage | | ±16 | V |
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | | 60 | V |
| $T_J$ | Maximum Junction Temperature | | 150 | ℃ |
| $T_{STG}$ | Storage Temperature Range | | -50 to 150 | ℃ |
| Mounted on Large Heat Sink | | | | |
| $I_{DM}$ | Pulse Drain Current Tested① | $T_A$ =25°C | 32 | A |
| $I_D$ | Continuous Drain Current | $T_A$ =25°C | 8 | A |
| | | $T_A$ =70°C | 6 | |
| $P_D$ | Maximum Power Dissipation | $T_A$ =25°C | 5 | W |
| | | $T_A$ =70°C | 35 | |
| $R_{\theta JA}$ | Thermal Resistance Junction-Ambient | | 25 | °C/W |

| Symbol | Parameter | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Static Electrical Characteristics @ $T_J$ = 25°C (unless otherwise stated)** | | | | | | |
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}$=0V $I_D$=250μA | 60 | -- | -- | V |
| $I_{DSS}$ | Zero Gate Voltage Drain Current($T_A$=25℃) | $V_{DS}$=60V, $V_{GS}$=0V | -- | -- | 1 | μA |
| | Zero Gate Voltage Drain Current($T_A$=125℃) | $V_{DS}$=48V, $V_{GS}$=0V | -- | -- | 100 | uA |
| $I_{GSS}$ | Gate-Body Leakage Current | $V_{GS}$=±16V, $V_{DS}$=0V | -- | -- | ±100 | nA |
| $V_{GS(TH)}$ | Gate Threshold Voltage | $V_{DS}$=$V_{GS}$, $I_D$=250μA | 0.8 | -- | 1.8 | V |
| $R_{DS(ON)}$ | Drain-Source On-State Resistance② | $V_{GS}$=10V, $I_D$=3A | -- | 70 | 90 | mΩ |
| $R_{DS(ON)}$ | Drain-Source On-State Resistance② | $V_{GS}$=4.5V, $I_D$=2A | -- | 80 | 100 | mΩ |
| **Dynamic Electrical Characteristics @ $T_J$ = 25°C (unless otherwise stated)** | | | | | | |
| $C_{iss}$ | Input Capacitance | $V_{DS}$=30V, $V_{GS}$=0V, f=1MHz | -- | 392 | -- | pF |
| $C_{oss}$ | Output Capacitance | | -- | 24 | -- | pF |
| $C_{rss}$ | Reverse Transfer Capacitance | | -- | 19 | -- | pF |
| $Q_g$ | Total Gate Charge | $V_{DS}$=30V $I_D$=5A, $V_{GS}$=10V | -- | 9.7 | -- | nC |
| $Q_{gs}$ | Gate Source Charge | | -- | 0.7 | -- | nC |
| $Q_{gd}$ | Gate Drain Charge | | -- | 1.5 | -- | nC |
| **Switching Characteristics @ $T_J$ = 25°C (unless otherwise stated)** | | | | | | |
| $t_{d(on)}$ | Turn on Delay Time | $V_{DD}$=30V, $I_D$=1A, $R_G$=3.3Ω, $V_{GS}$=10V | -- | 4.5 | -- | ns |
| $t_r$ | Turn on Rise Time | | -- | 6.4 | -- | ns |
| $t_{d(off)}$ | Turn Off Delay Time | | - | 19 | -- | ns |
| $t_f$ | Turn Off Fall Time | | -- | 3.6 | -- | ns |
| **Source Drain Diode Characteristics @ $T_J$ = 25°C (unless otherwise stated)** | | | | | | |
| $I_{SD}$ | Source drain current(Body Diode) | $T_A$=25℃ | -- | -- | 5.5 | A |
| $V_{SD}$ | Forward on voltage② | $T_j$=25℃, $I_{SD}$=5A, $V_{GS}$=0V | -- | 0.82 | 1.2 | V |

Notes: ① Pulse width limited by maximum allowable junction temperature

②Pulse test ; Pulse width≤300μs, duty cycle≤2%.

## Typical Characteristics

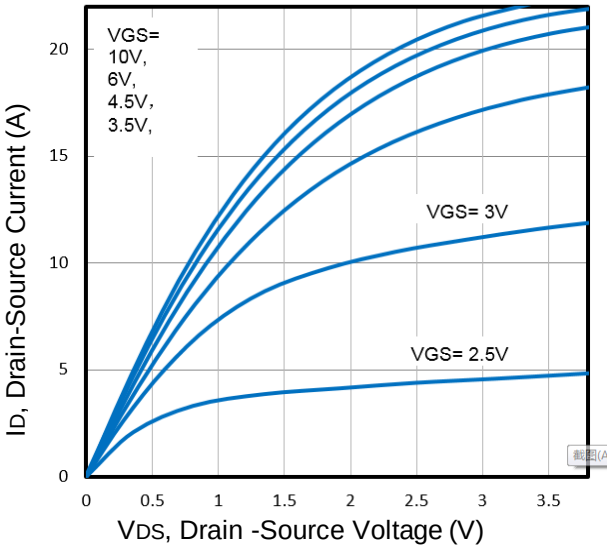



**Fig1.** Typical Output Characteristics

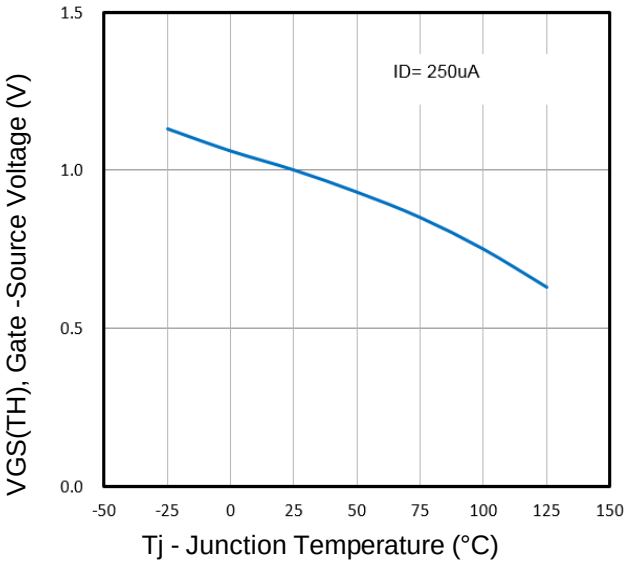



**Fig2.** VGS(TH) Voltage Vs. Temperature

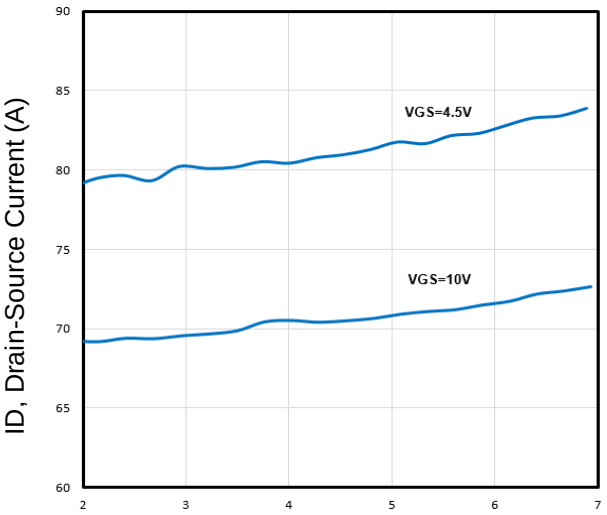



**Fig3.** Typical Transfer Characteristics

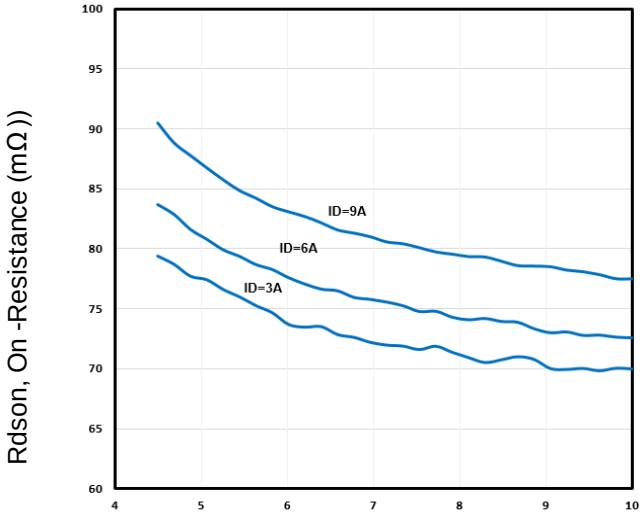



**Fig4.** On-Resistance vs. Drain Current and Gate

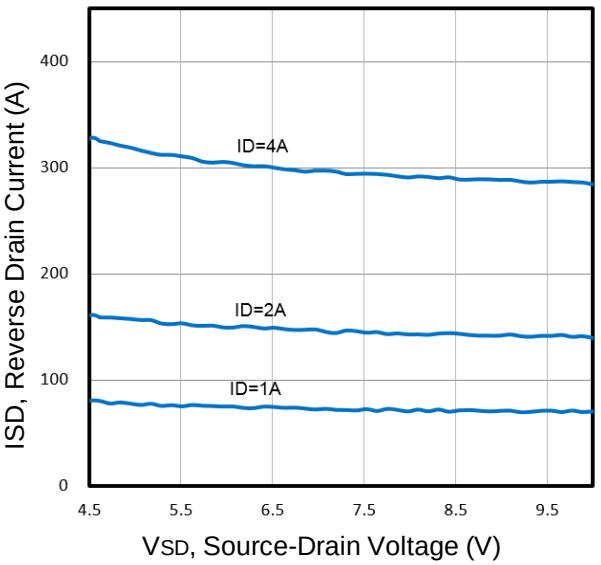



**Fig5.** Typical Source-Drain Diode Forward Voltage

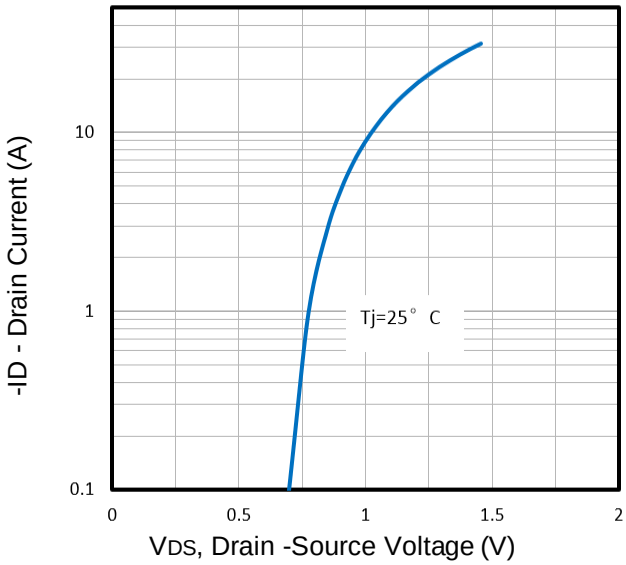



**Fig6.** Maximum Safe Operating Area

## Typical Characteristics

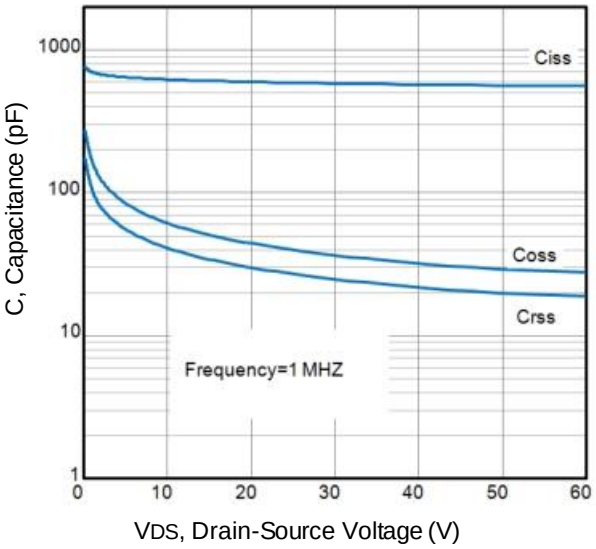



**Fig7.** Typical Capacitance Vs. Drain-Source Voltage

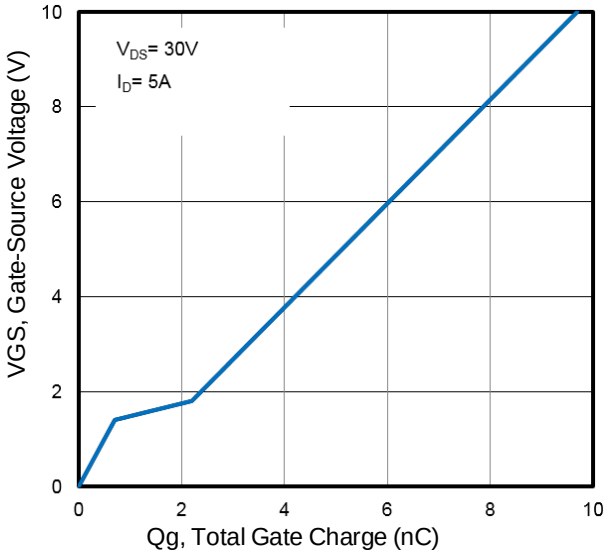
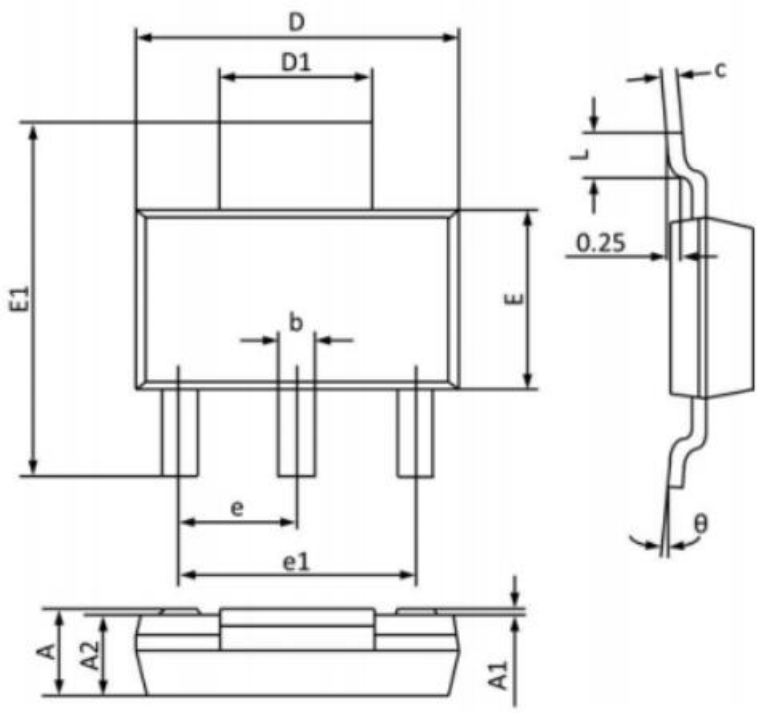



**Fig8.** Typical Gate Charge Vs. Gate-Source Voltage

## SOT223 Mechanical Data




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 1.520 | 1.800 | 0.060 | 0.071 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.500 | 1.700 | 0.059 | 0.067 |
| b | 0.660 | 0.820 | 0.026 | 0.032 |
| c | 0.250 | 0.350 | 0.010 | 0.014 |
| D | 6.200 | 6.400 | 0.244 | 0.252 |
| D1 | 2.900 | 3.100 | 0.114 | 0.122 |
| E | 3.300 | 3.700 | 0.130 | 0.146 |
| E1 | 6.830 | 7.070 | 0.269 | 0.278 |
| e | 2.300 (BSC) | | 0.091 (BSC) | |
| e1 | 4.500 | 4.700 | 0.177 | 0.185 |
| L | 0.900 | 1.150 | 0.035 | 0.045 |
| θ | 0° | 10° | 0° | 10° |

**NOTICE**

The information presented in this document is for reference only. Involving product optimization and productivity improvement, ChipNobo reserves the right to adjust product indicators and upgrade some technical parameters. ChipNobo is entitled to be exempted from liability for any delay or non-delivery of the information disclosure process that occurs.
本文件中提供的信息仅供参考。涉及产品优化和生产效率改善，ChipNobo 有权调整产品指标和部分技术参数的升级，所出现信息披露过程存在延后或者不能送达的情形，ChipNobo 有获免责权。

The product listed herein is designed to be used with residential and commercial equipment, and do not support sensitive items and specialized equipment in areas where sanctions do exist. ChipNobo Co., Ltd or anyone on its behalf, assumes no responsibility or liability for any damages resulting from improper use.
此处列出的产品旨在民用和商业设备上使用，不支持确有制裁地区的敏感项目和特殊设备，ChipNobo 有限公司或其代表，对因不当使用而造成的任何损害不承担任何责任。

For additional information, please visit our website https://www.chipnobo.com/en or consult your nearest Chipnobo sales office for further assistance.
欲了解更多信息，请访问我们的网站 https://www.chipnobo.com/en，或咨询离您最近的 Chipnobo 销售办事处以获得进一步帮助。