

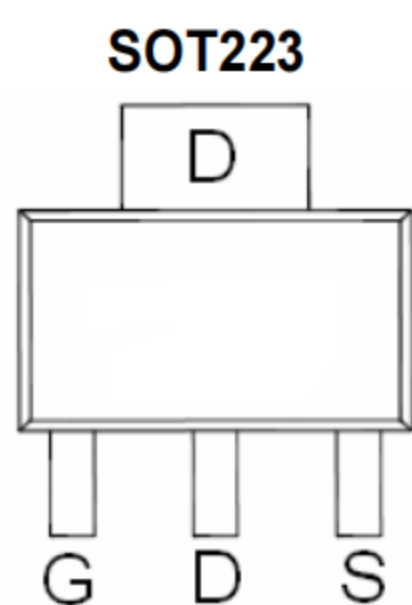
GENERAL FEATURES

| | | |
|----------|----------------------|-----------|
| V_{DS} | $R_{DS(ON)}$ MAX | I_D MAX |
| -100V | 650m Ω @-10V | -2A |
| | 700m Ω @-4.5V | |

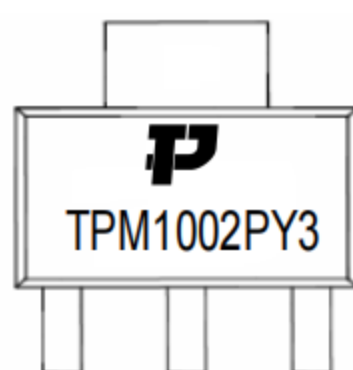
Application

- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

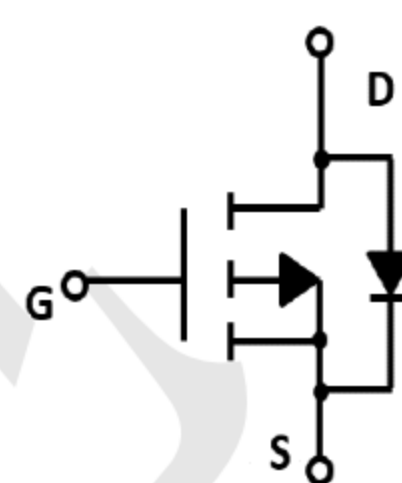
Package and Pin Configuration



Marking:



Circuit diagram

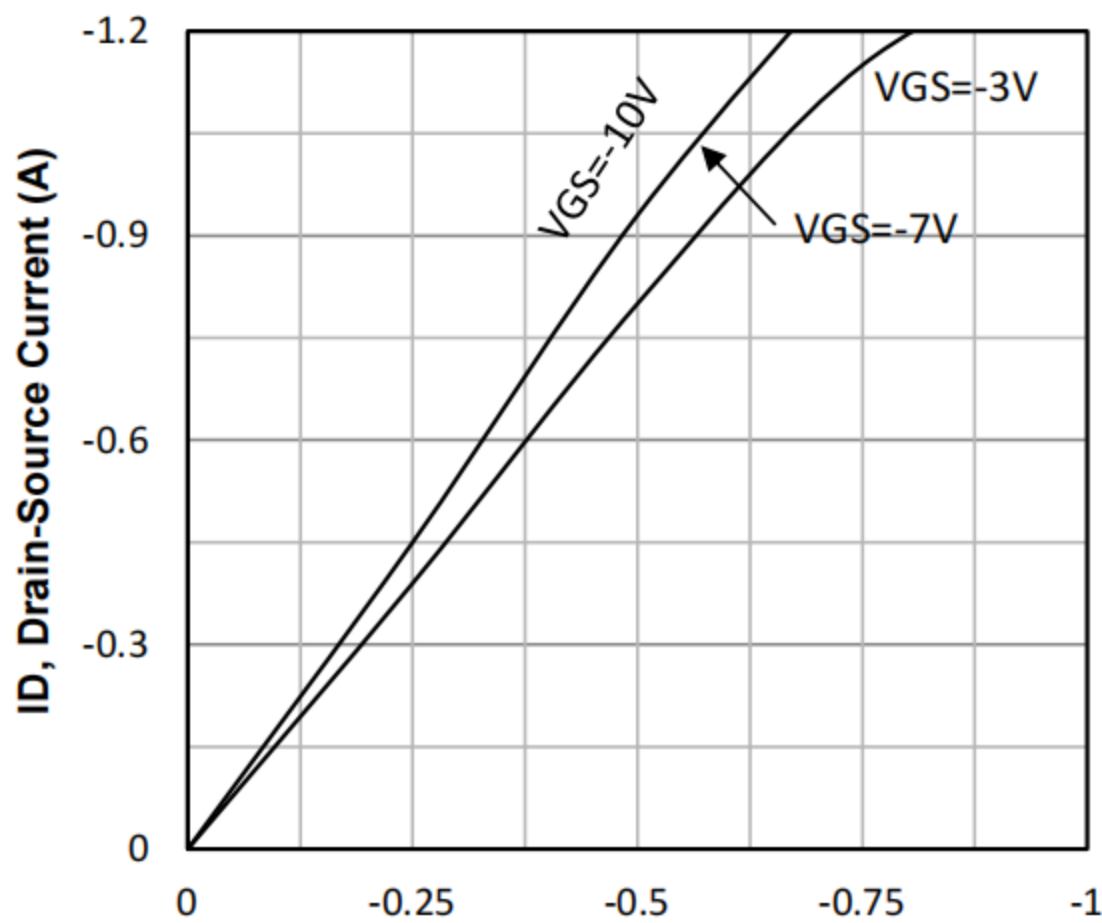


| Absolute Maximum Ratings (TA=25°C unless otherwise noted) | | | | |
|---|--|------------------------|------------|------|
| Symbol | Parameter | | Rating | Unit |
| Common Ratings (TC=25°C Unless Otherwise Noted) | | | | |
| V_{DS} | Drain-Source Breakdown Voltage | | -100 | V |
| V_{GS} | Gate-Source Voltage | | ±20 | V |
| T_J | Maximum Junction Temperature | | 150 | °C |
| T_{STG} | Storage Temperature Range | | -55 to 150 | °C |
| I_S | Diode Continuous Forward Current | $T_c=25^\circ\text{C}$ | -2 | A |
| Mounted on Large Heat Sink | | | | |
| I_{DM} | Pulse Drain Current Tested | $T_c=25^\circ\text{C}$ | -5 | A |
| I_D | Continuous Drain Current@GS=10V | $T_c=25^\circ\text{C}$ | -2 | A |
| P_D | Maximum Power Dissipation | $T_c=25^\circ\text{C}$ | 3.5 | W |
| $R_{\theta JA}$ | Thermal Resistance Junction-to-Ambient | | 85 | °C/W |

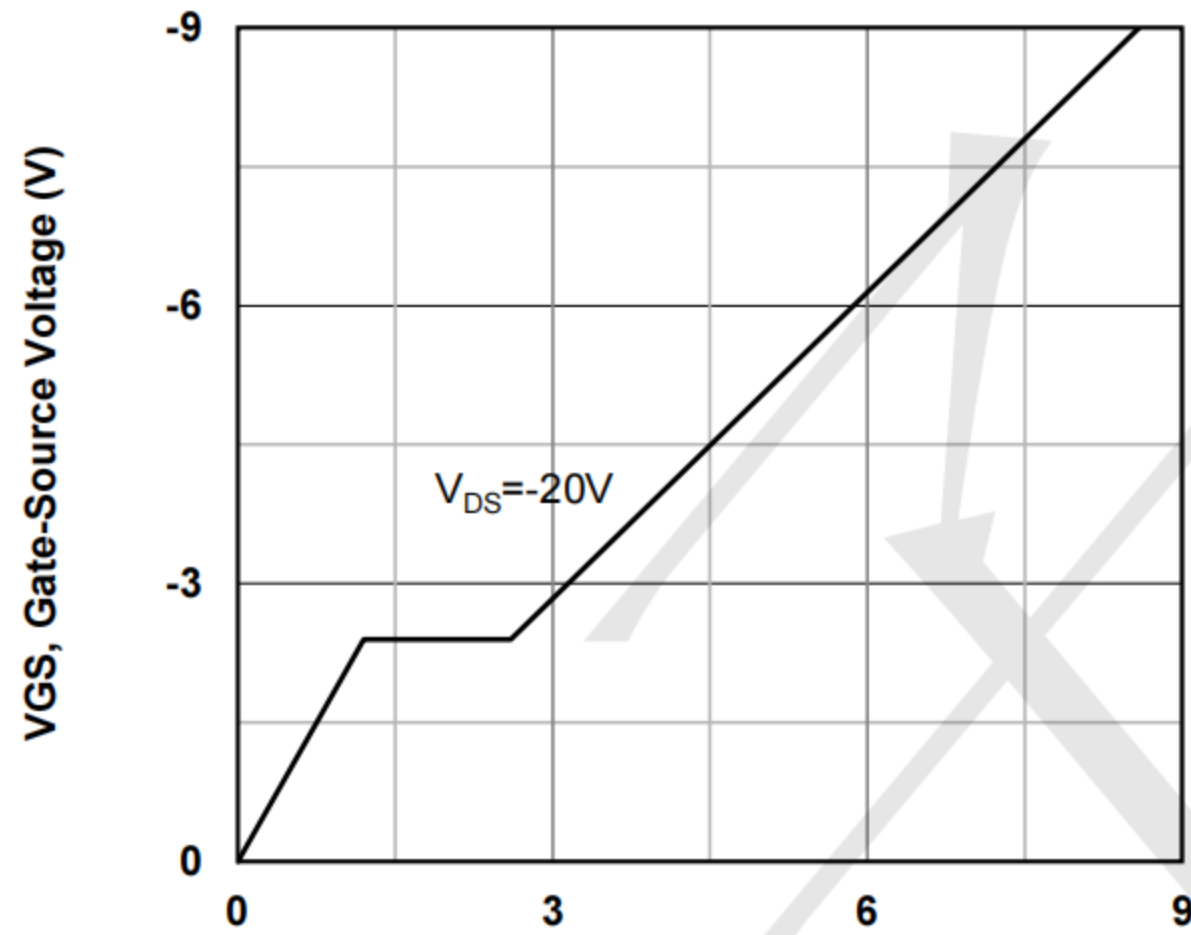
Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

| Electrical Characteristics (T _J =25°C unless otherwise noted) | | | | | | |
|--|----------------------------------|--|------|------|------|------|
| Symbol | Parameter | Condition | Min | Typ | Max | Unit |
| Static Electrical Characteristics @ T_J = 25°C (unless otherwise stated) | | | | | | |
| BV _{(BR)DSS} | Drain-Source Breakdown Voltage | VGS=0V, ID=-250μA | -100 | -- | -- | V |
| I _{DSS} | Zero Gate Voltage Drain Current | VDS=-100V, VGS=0V | -- | -- | -1 | μA |
| I _{GSS} | Gate-Body Leakage Current | VGS=±20V, VDS=0V | -- | -- | ±100 | nA |
| V _{GS(th)} | Gate Threshold Voltage | VDS=VGS, ID=-250μA | -1.0 | -2.0 | -2.5 | V |
| R _{DS(on)} | Drain-Source On-State Resistance | VGS=-10V, ID=-1A | -- | 560 | 650 | mΩ |
| | | VGS=-4.5V, ID=-0.5A | -- | 630 | 700 | mΩ |
| Dynamic Electrical Characteristics @ T_J = 25°C (unless otherwise stated) | | | | | | |
| C _{ISS} | Input Capacitance | VDS=-15V, VGS=0V, f=1MHz | -- | 553 | -- | pF |
| C _{OSS} | Output Capacitance | | -- | 29 | -- | pF |
| C _{RSS} | Reverse Transfer Capacitance | | -- | 20 | -- | pF |
| Switching Characteristics | | | | | | |
| Q _g | Total Gate Charge | VDS=-15V, ID=-0.5A, VGS=4.5V | -- | 4.5 | -- | nC |
| Q _{gs} | Gate Source Charge | | -- | 1.15 | -- | nC |
| Q _{gd} | Gate Drain Charge | | -- | 1.5 | -- | nC |
| t _{d(on)} | Turn-on Delay Time | VDD=-50V, ID=-0.5A, VGS=-10V, RG=3.3Ω | -- | 13.6 | -- | nS |
| t _r | Turn-on Rise Time | | -- | 6.8 | -- | nS |
| t _{d(off)} | Turn-Off Delay Time | | -- | 34 | -- | nS |
| t _f | Turn-Off Fall Time | | -- | 3 | -- | nS |
| Source- Drain Diode Characteristics | | | | | | |
| V _{SD} | Forward on voltage | T _J =25°C, I _S =-2A, | -- | -- | -1.2 | V |

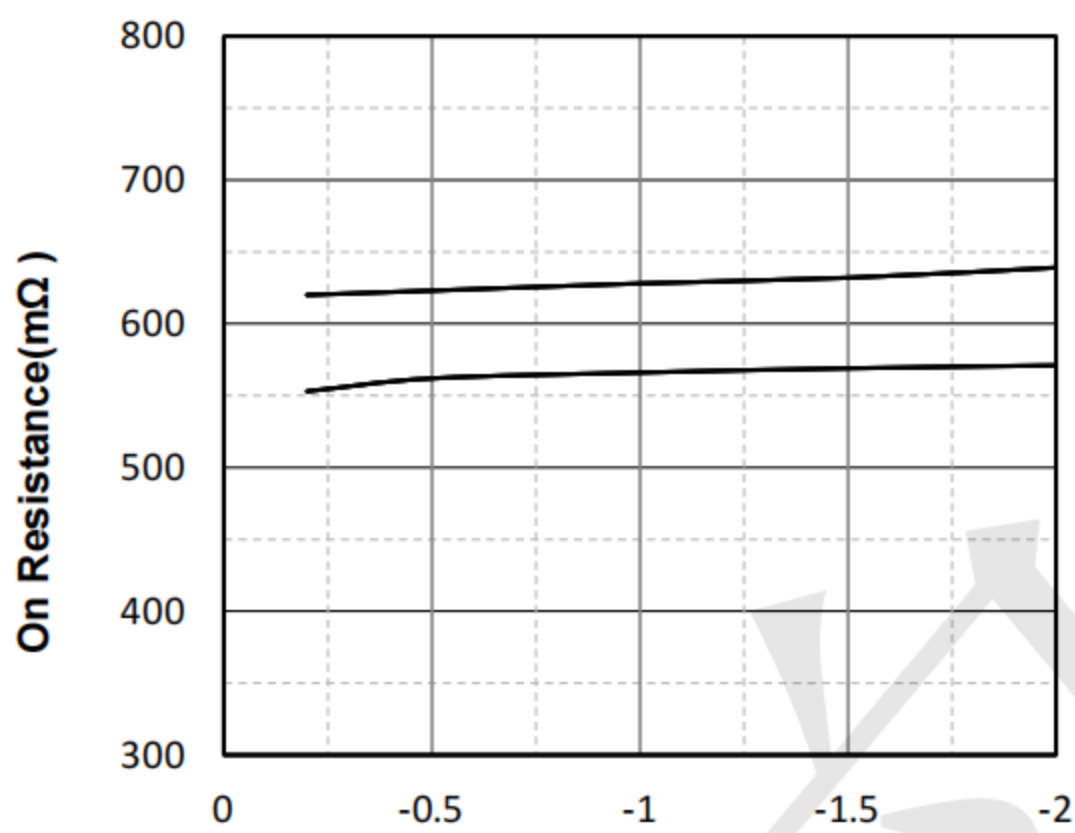
Typical Electrical and Thermal Characteristics



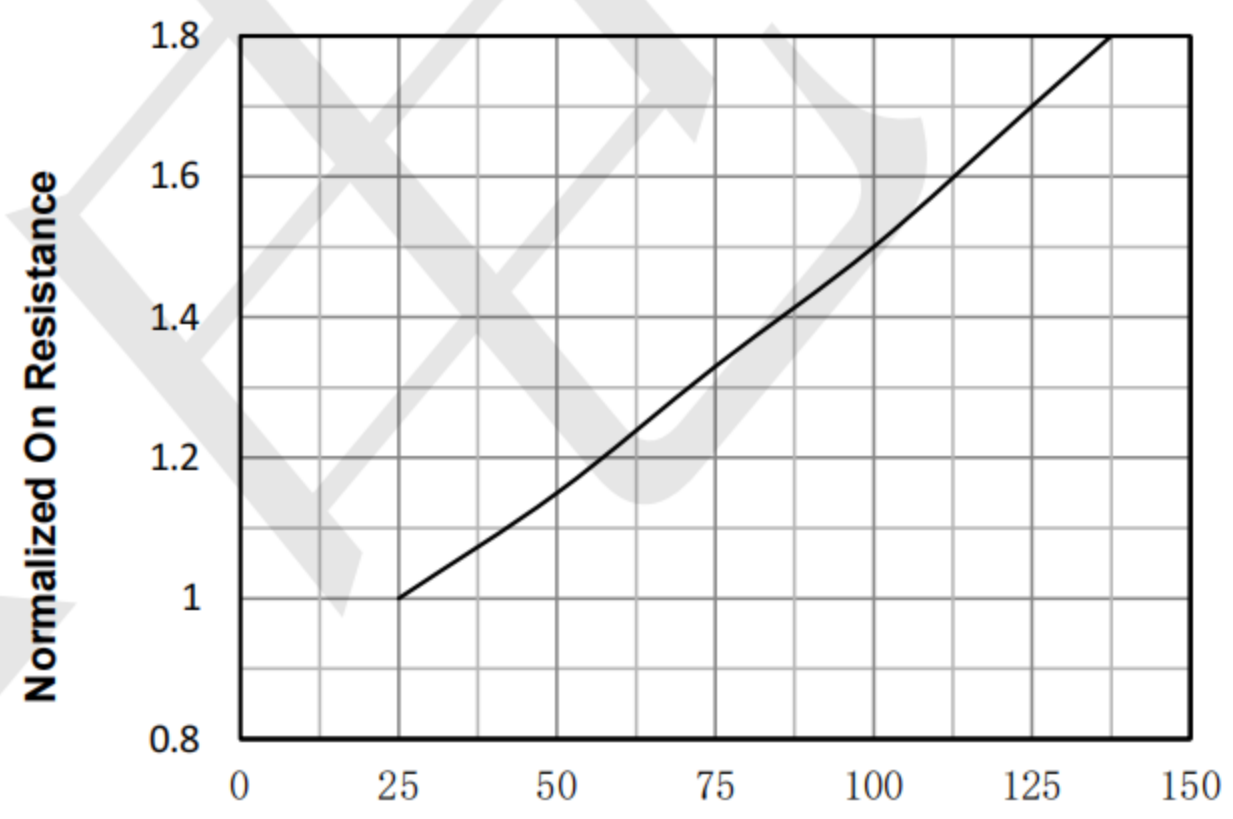
VDS, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



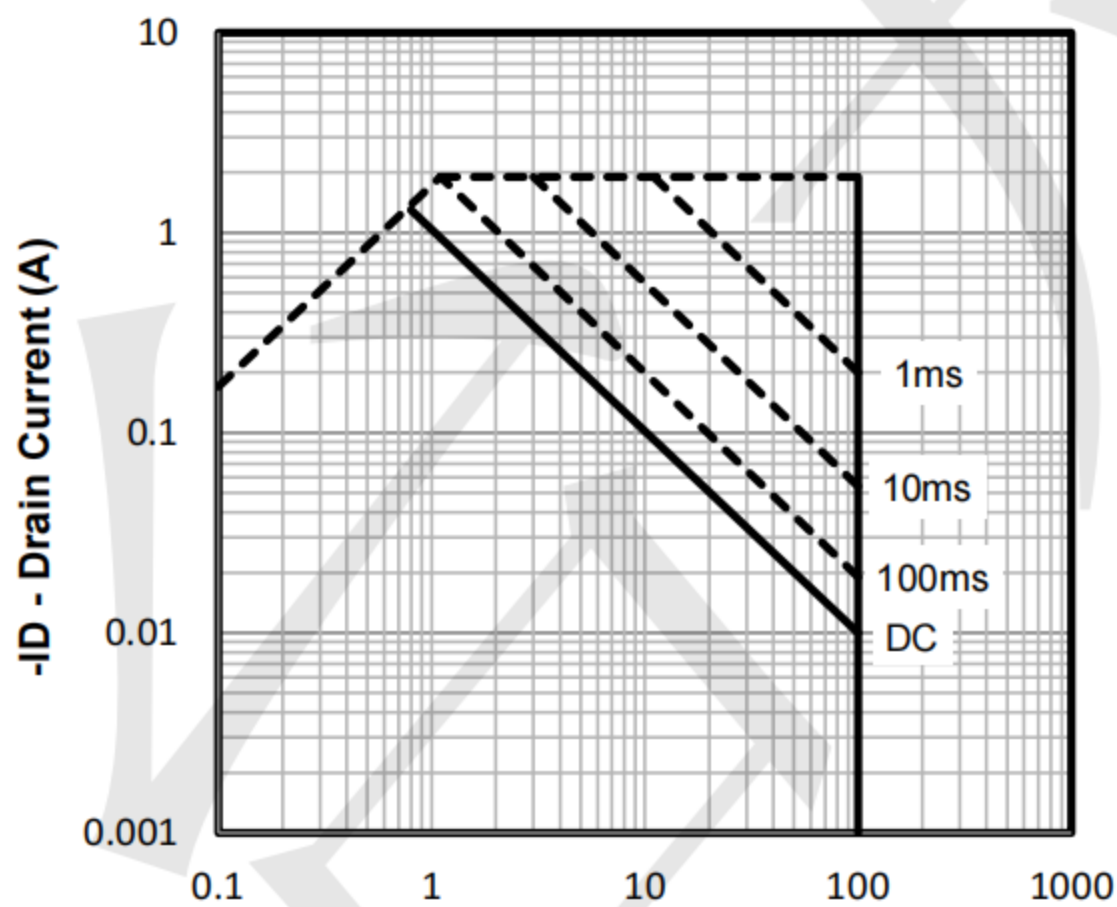
Qg -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs. Gate-Source Voltage



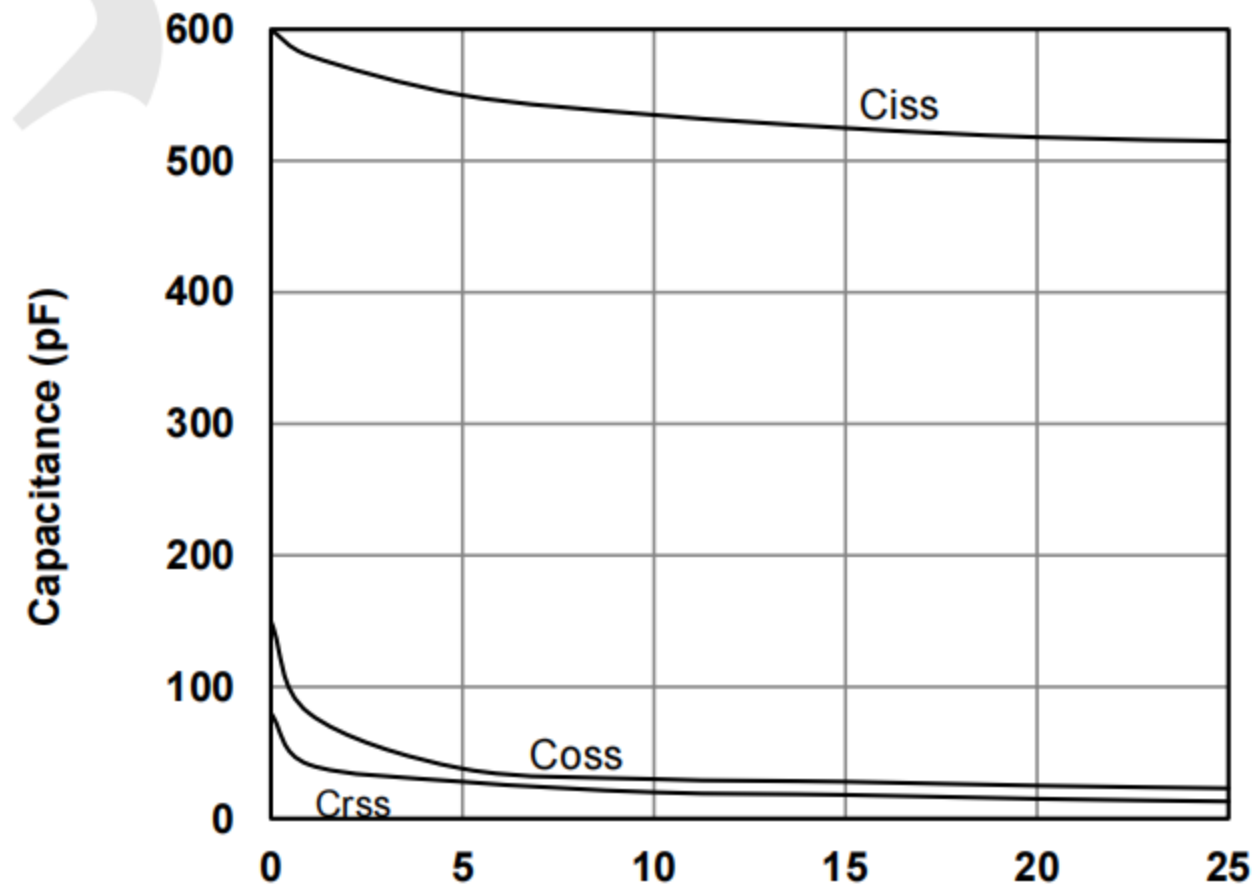
ID, Drain-Source Current (mA)
Fig3. Drain-Source on Resistance



Tj - Junction Temperature (°C)
Fig4. Normalized On-Resistance Vs. Temperature



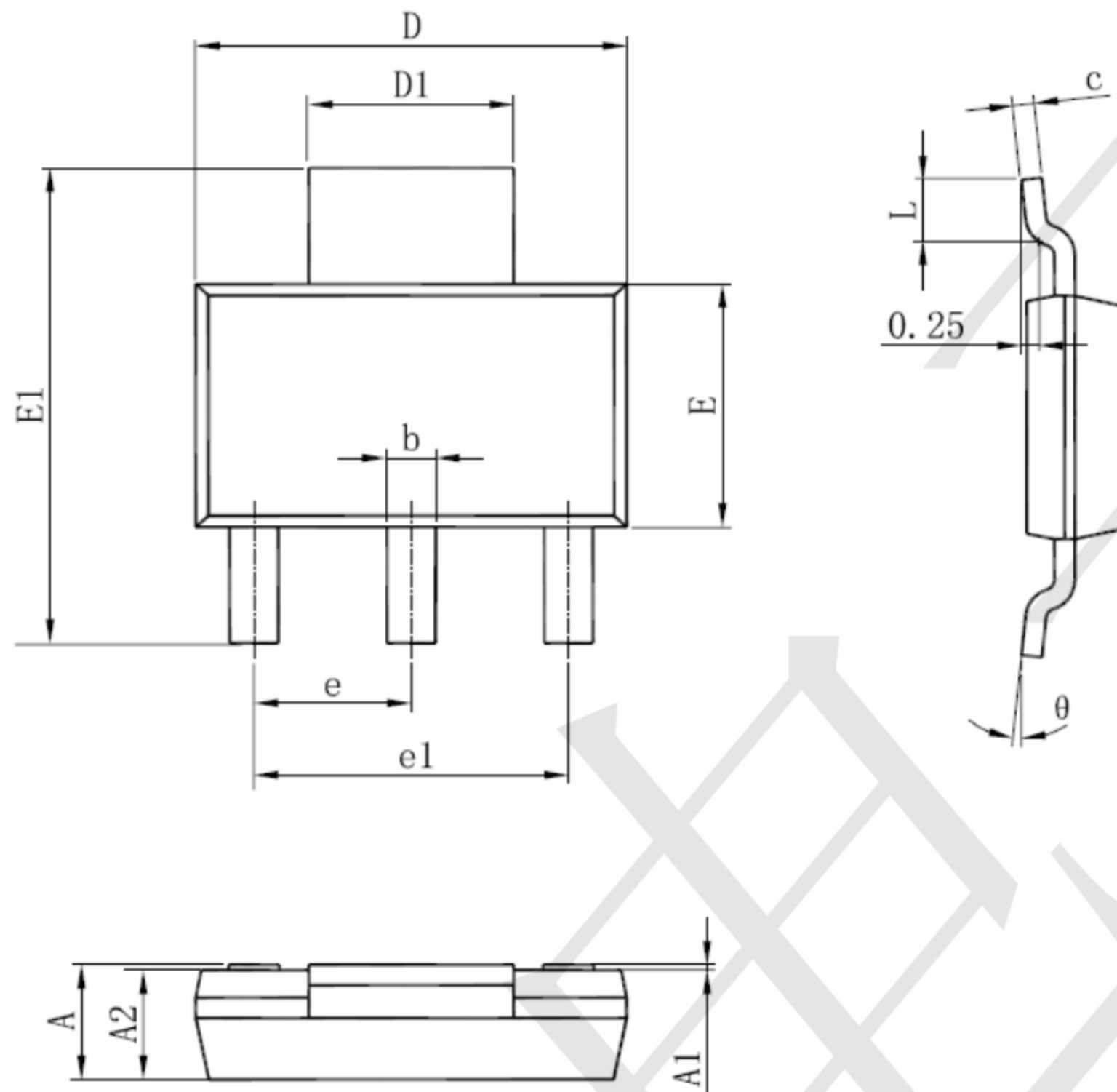
-VDS, Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



-VDS, Drain-Source Voltage (V)
Fig6 Typical Capacitance Vs. Drain-Source Voltage



SOT-223 Package Information



| 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° |

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