

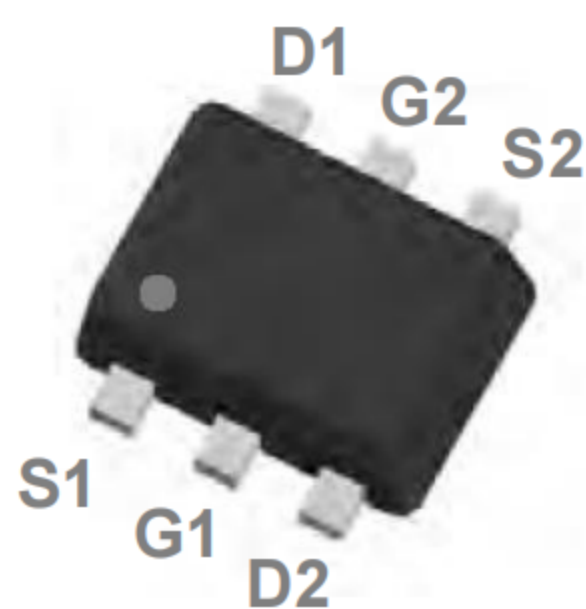
Features

- Fast switching
- Green Device Available
- Suit for 1.5V Gate Drive Applications

Application

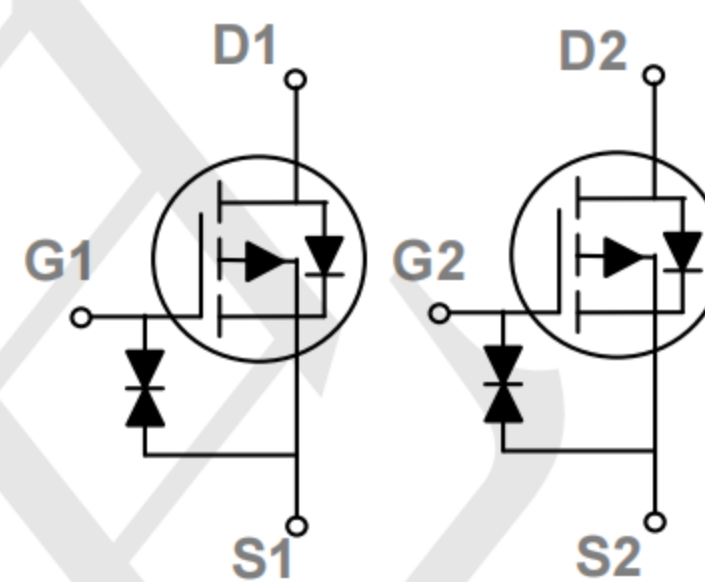
- Notebook
- Load Switch
- Networking
- Hand-held Instruments

Package and Pin Configuration



Marking: TU.R

Circuit diagram



Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Rating | Units |
|-----------|---|------------|----------------------|
| V_{DS} | Drain-Source Voltage | -20 | V |
| V_{GS} | Gate-Source Voltage | ± 12 | V |
| I_D | Drain Current – Continuous ($T_C=25^\circ\text{C}$) | -1.2 | A |
| I_{DM} | Drain Current – Pulsed ¹ | -2.1 | A |
| P_D | Power Dissipation ($T_C=25^\circ\text{C}$) | 312 | mW |
| | Power Dissipation – Derate above 25°C | 2.5 | mW/ $^\circ\text{C}$ |
| T_{STG} | Storage Temperature Range | -55 to 150 | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature Range | -55 to 150 | $^\circ\text{C}$ |

Thermal Characteristics

| Symbol | Parameter | Typ. | Max. | Unit |
|-----------------|--|------|------|--------------------|
| $R_{\theta JA}$ | Thermal Resistance Junction to ambient | --- | 400 | $^\circ\text{C/W}$ |

Electrical Characteristics ($T_J=25^\circ\text{C}$, unless otherwise noted)

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|------------------------------|------------------------------------|---|------|-------|----------|--------------------|
| BV_{DSS} | Drain-Source Breakdown Voltage | $V_{GS}=0V, I_D=-250\mu A$ | -20 | --- | --- | V |
| $\Delta BV_{DSS}/\Delta T_J$ | BV_{DSS} Temperature Coefficient | Reference to 25°C , $I_D=-1\text{mA}$ | --- | -0.01 | --- | $V/^\circ\text{C}$ |
| I_{DSS} | Drain-Source Leakage Current | $V_{DS}=-20V, V_{GS}=0V, T_J=25^\circ\text{C}$ | --- | --- | -1 | μA |
| | | $V_{DS}=-16V, V_{GS}=0V, T_J=125^\circ\text{C}$ | --- | --- | -10 | μA |
| I_{GSS} | Gate-Source Leakage Current | $V_{GS}=\pm 12V, V_{DS}=0V$ | --- | --- | ± 20 | μA |

On Characteristics

| | | | | | | |
|---------------------|--------------------------------------|--------------------------------|------|-------|------|---------------------|
| $R_{DS(on)}$ | Static Drain-Source On-Resistance | $V_{GS}=-4.5V, I_D=-0.5A$ | --- | 400 | 600 | $m\Omega$ |
| | | $V_{GS}=-2.5V, I_D=-0.5A$ | --- | 570 | 700 | |
| | | $V_{GS}=-1.8V, I_D=-0.1A$ | --- | 800 | 1100 | |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{GS}=V_{DS}, I_D=-250\mu A$ | -0.5 | -0.75 | 1.0 | V |
| $\Delta V_{GS(th)}$ | $V_{GS(th)}$ Temperature Coefficient | | --- | 3 | --- | $mV/^\circ\text{C}$ |

Dynamic and switching Characteristics

| | | | | | | |
|--------------|------------------------------------|---|-----|------|--|----|
| Q_g | Total Gate Charge ^{2,3} | $V_{DS}=-10V, V_{GS}=-4.5V, I_D=-1A$ | --- | 0.5 | | nC |
| Q_{gs} | Gate-Source Charge ^{2,3} | | --- | 0.28 | | |
| Q_{gd} | Gate-Drain Charge ^{2,3} | | --- | 0.28 | | |
| $T_{d(on)}$ | Turn-On Delay Time ^{2,3} | $V_{DD}=-10V, V_{GS}=-4.5V, R_G=6\Omega$ $I_D=-1A$ | --- | 0.4 | | ns |
| T_r | Rise Time ^{2,3} | | --- | 0.06 | | |
| $T_{d(off)}$ | Turn-Off Delay Time ^{2,3} | | --- | 0.02 | | |
| T_f | Fall Time ^{2,3} | | --- | 0.8 | | |
| C_{iss} | Input Capacitance | $V_{DS}=-10V, V_{GS}=0V, F=1\text{MHz}$ | --- | 55 | | pF |
| C_{oss} | Output Capacitance | | --- | 6 | | |
| C_{rss} | Reverse Transfer Capacitance | | --- | 4.5 | | |

Drain-Source Diode Characteristics and Maximum Ratings

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|----------|-----------------------|--|------|-------|------|------|
| V_{SD} | Diode Forward Voltage | $V_{GS}=0V, I_S=-0.2A, T_J=25^\circ\text{C}$ | --- | -0.75 | -1.1 | V |

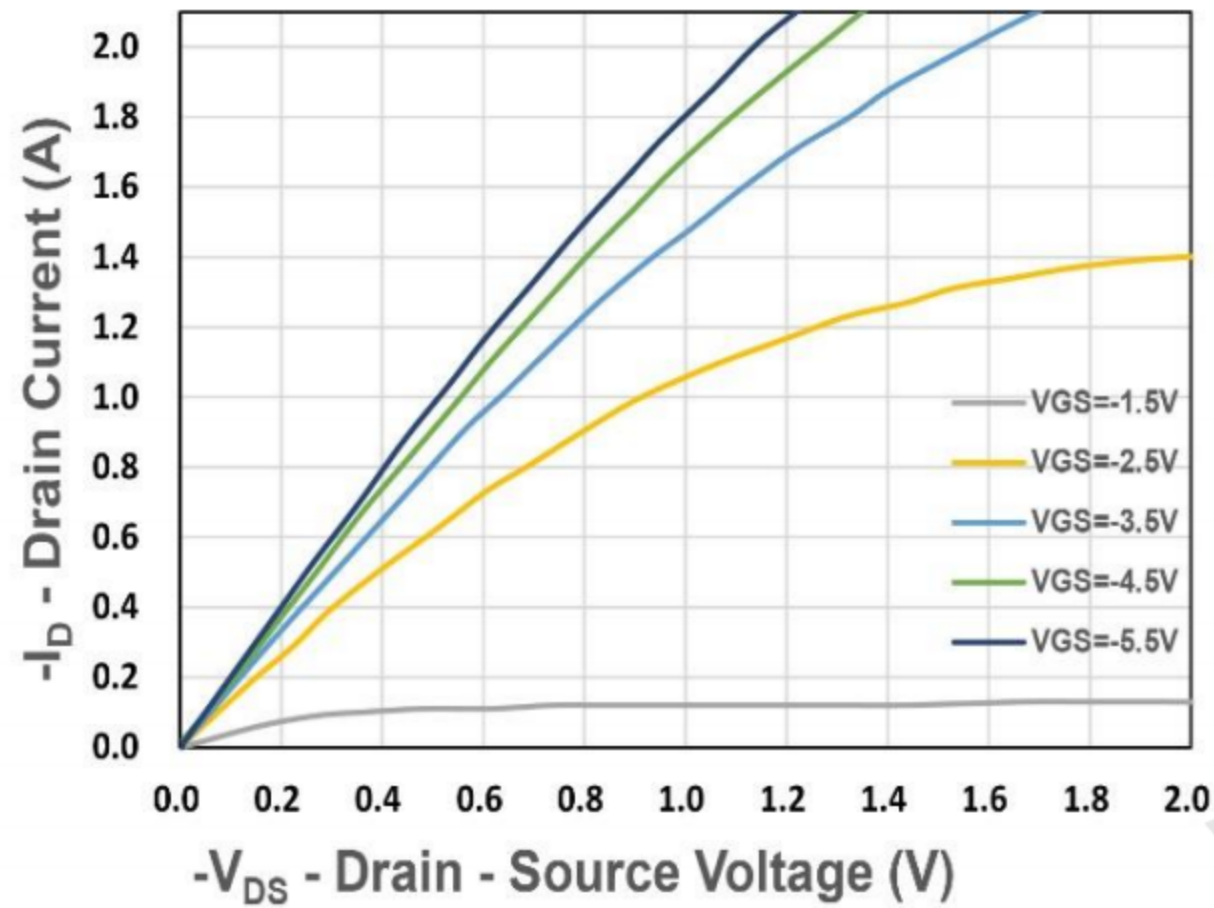


Figure 1. Output Characteristics

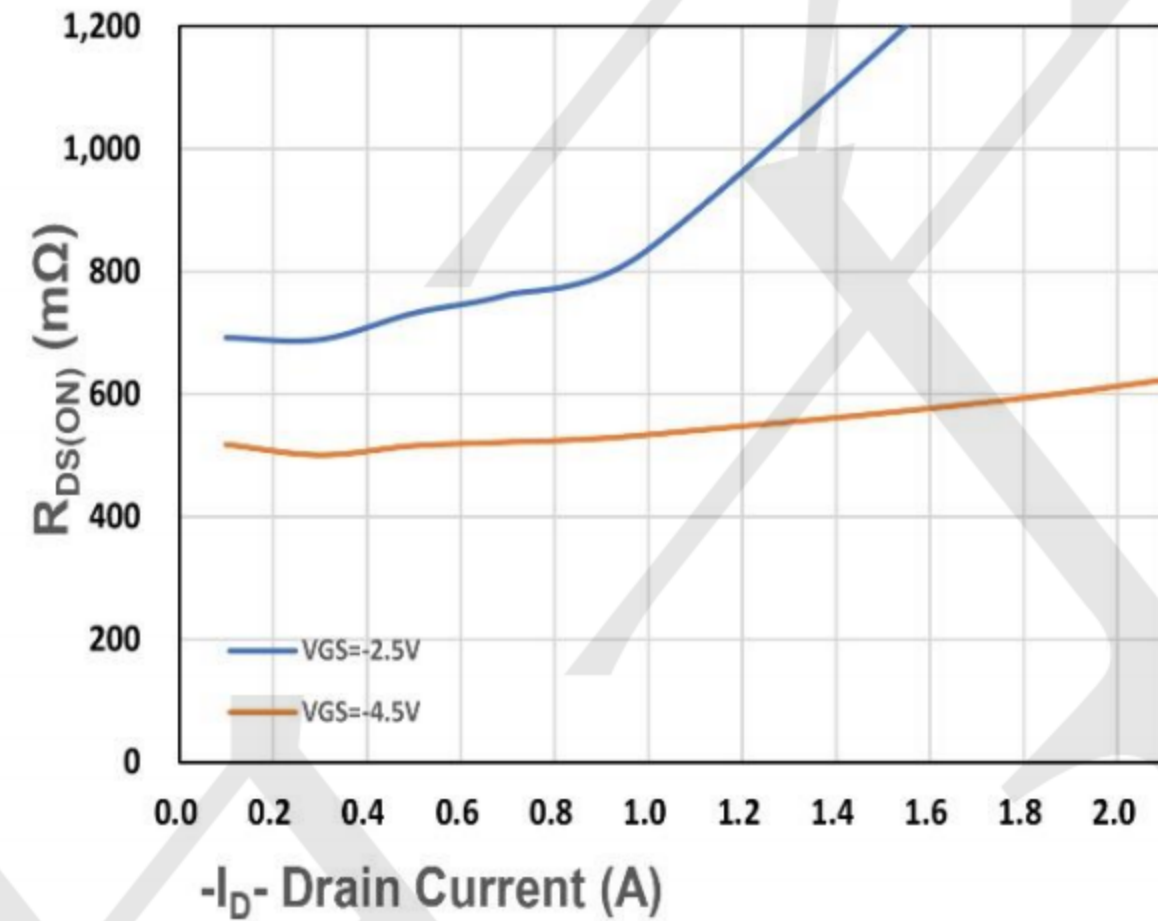


Figure 2. On-Resistance vs. I_D

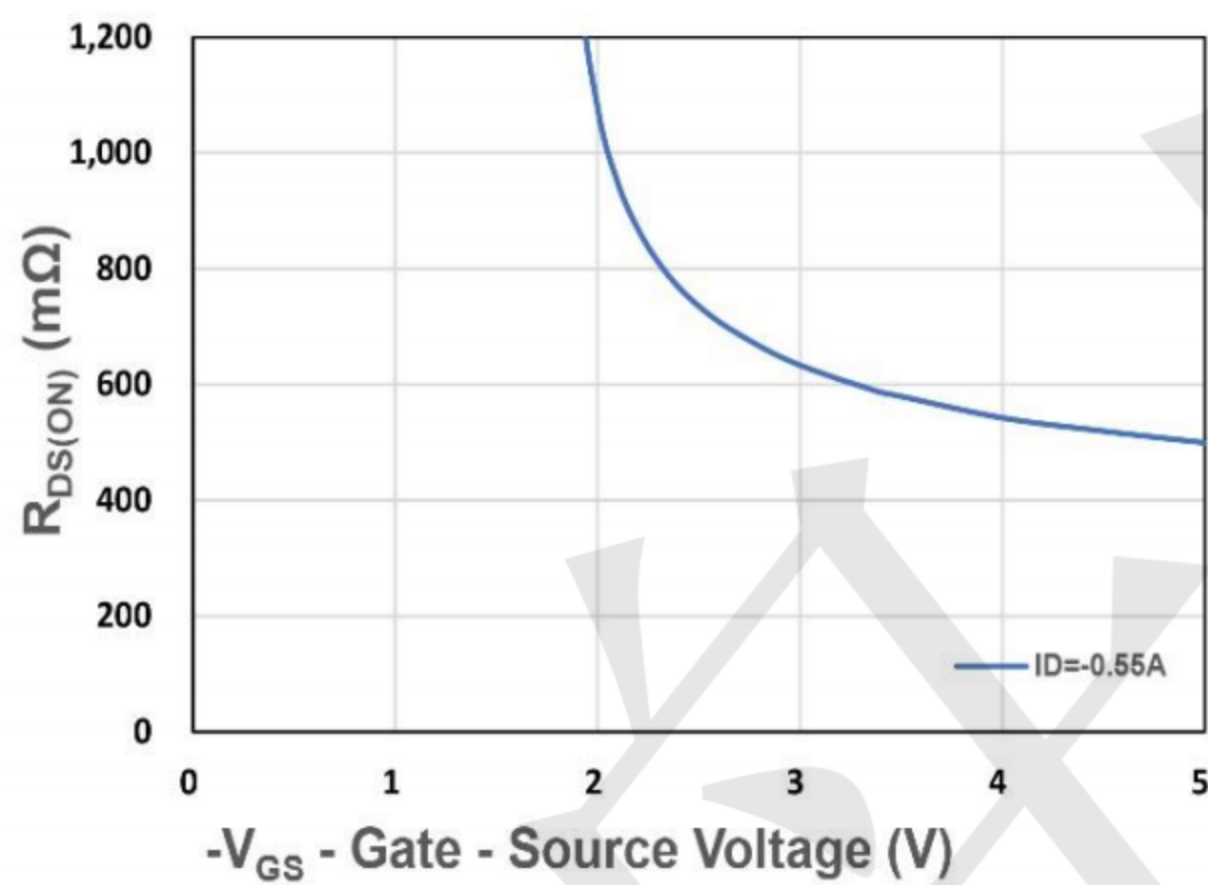


Figure 3. On-Resistance vs. V_{GS}

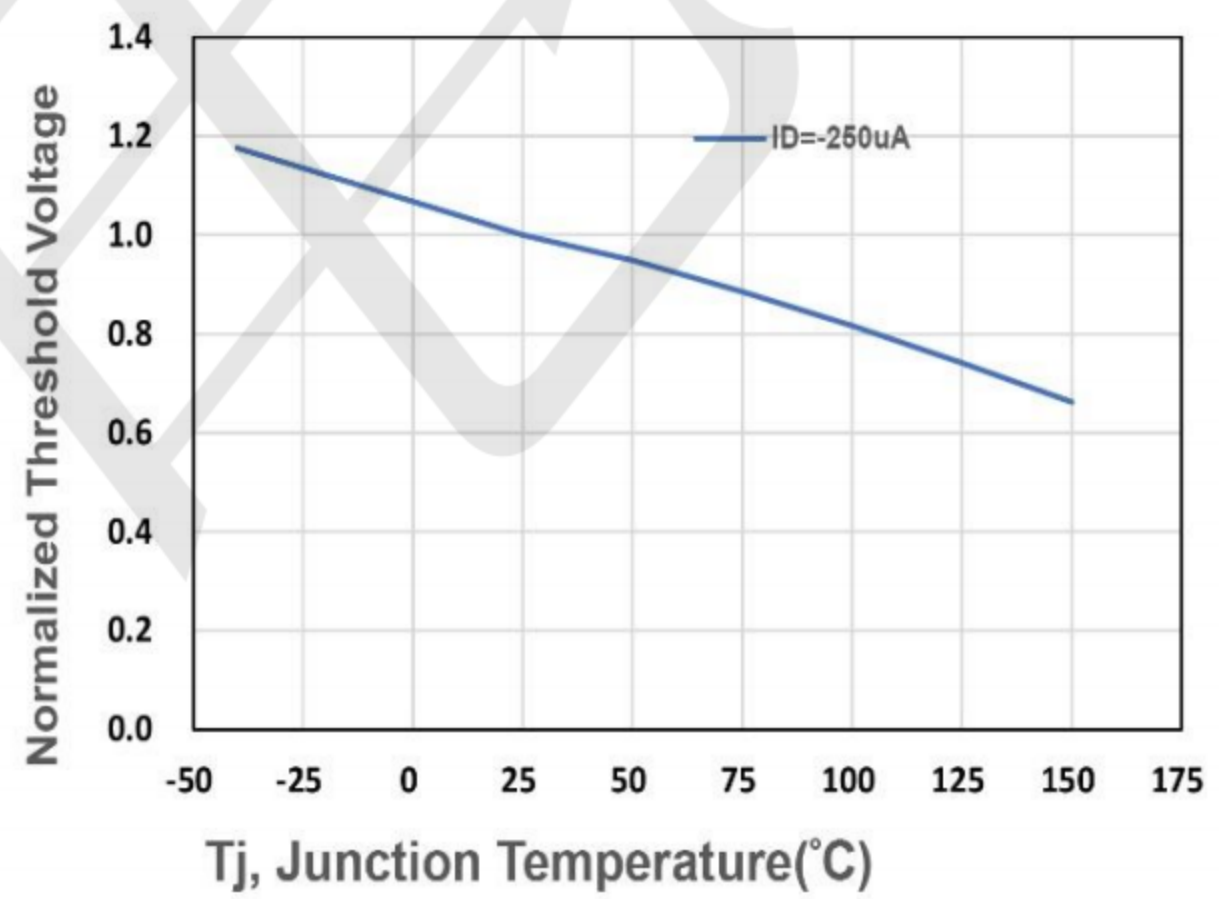


Figure 4. Gate Threshold Voltage

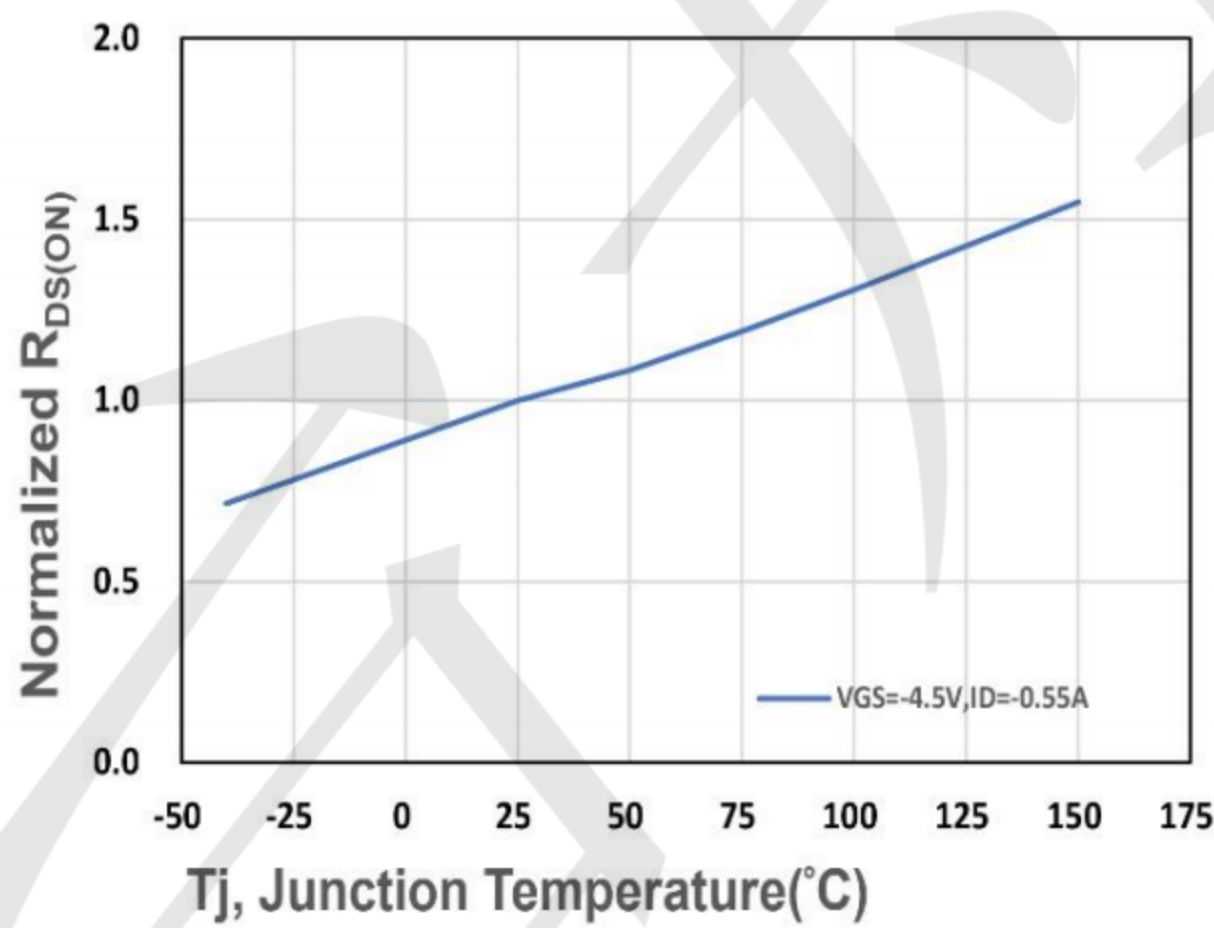


Figure 5. Drain-Source On Resistance

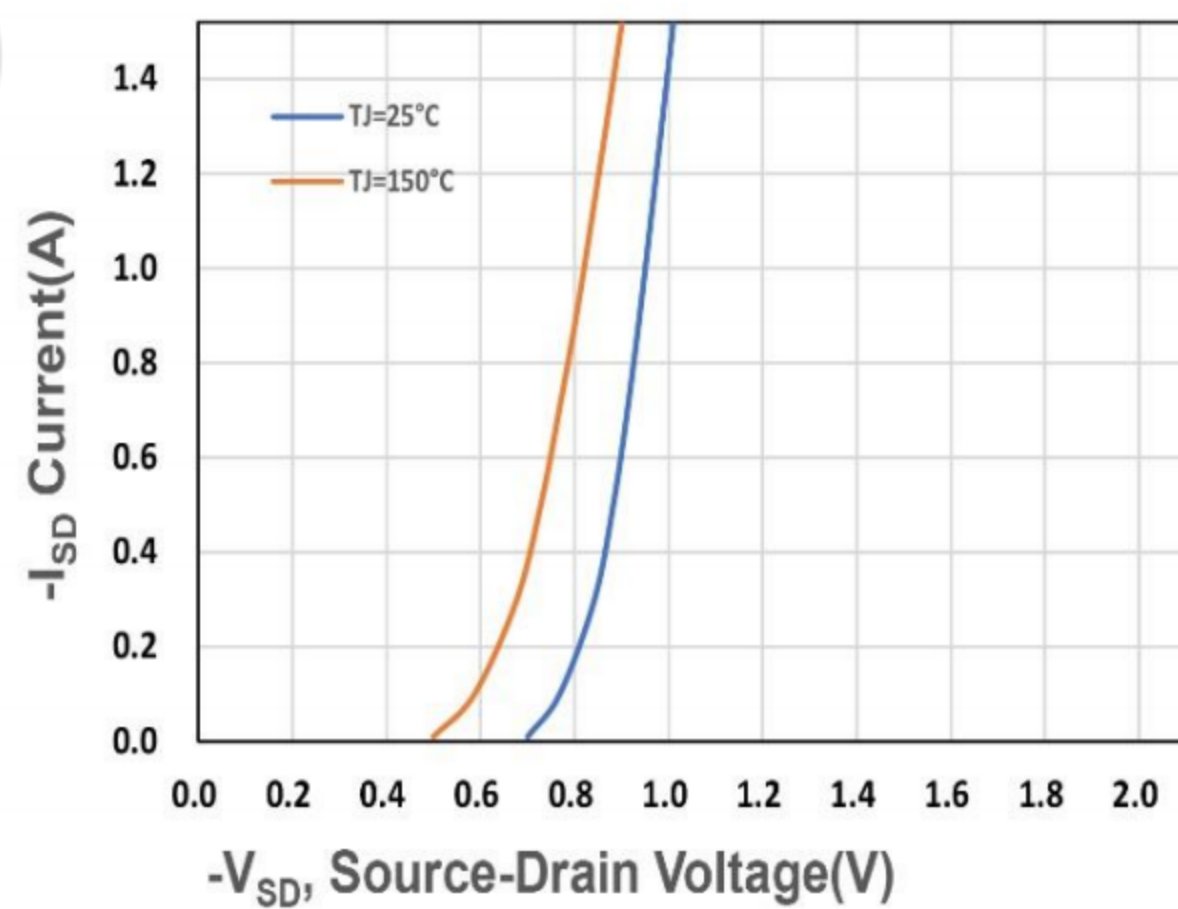


Figure 6. Source-Drain Diode Forward

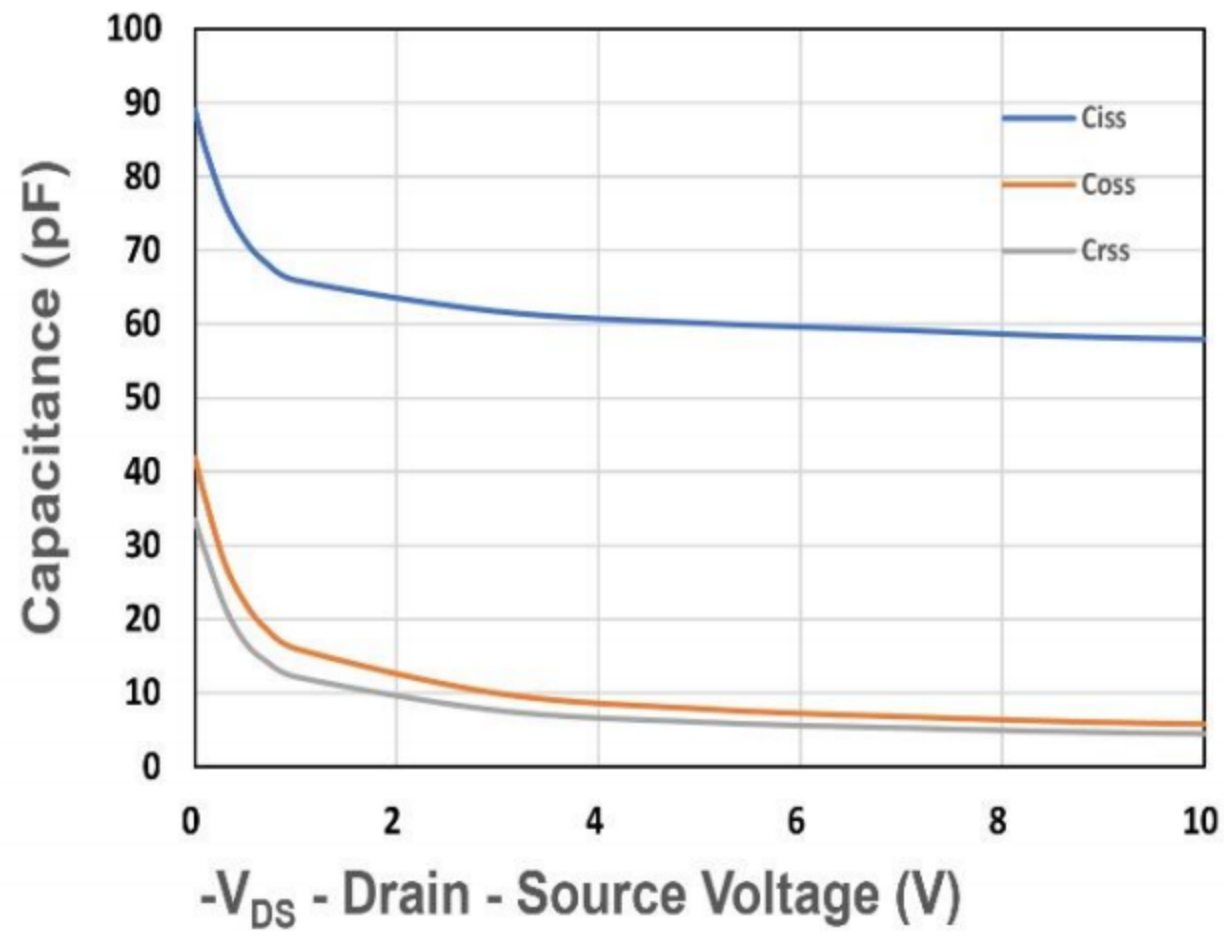


Figure 7. Capacitance

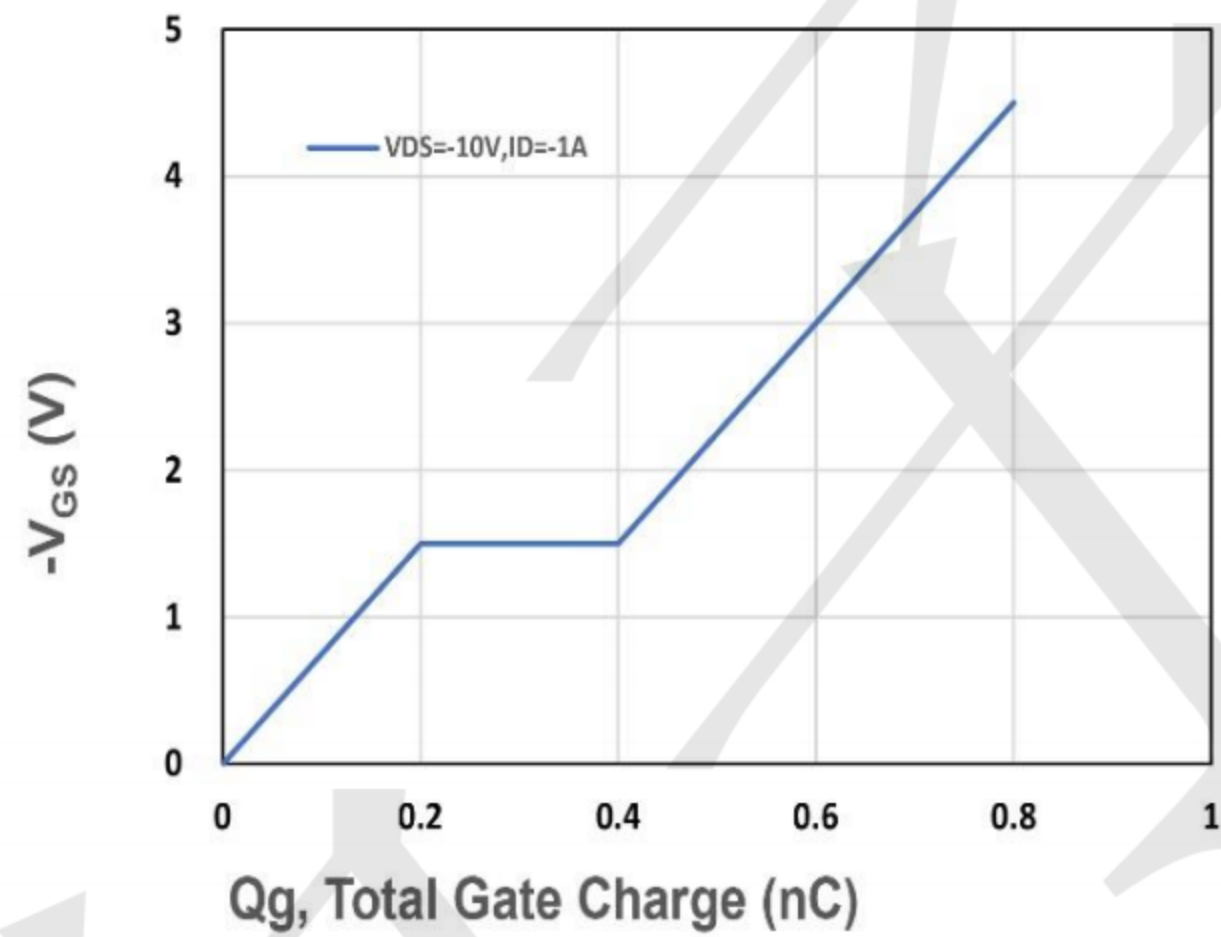


Figure 8. Gate Charge Characteristics

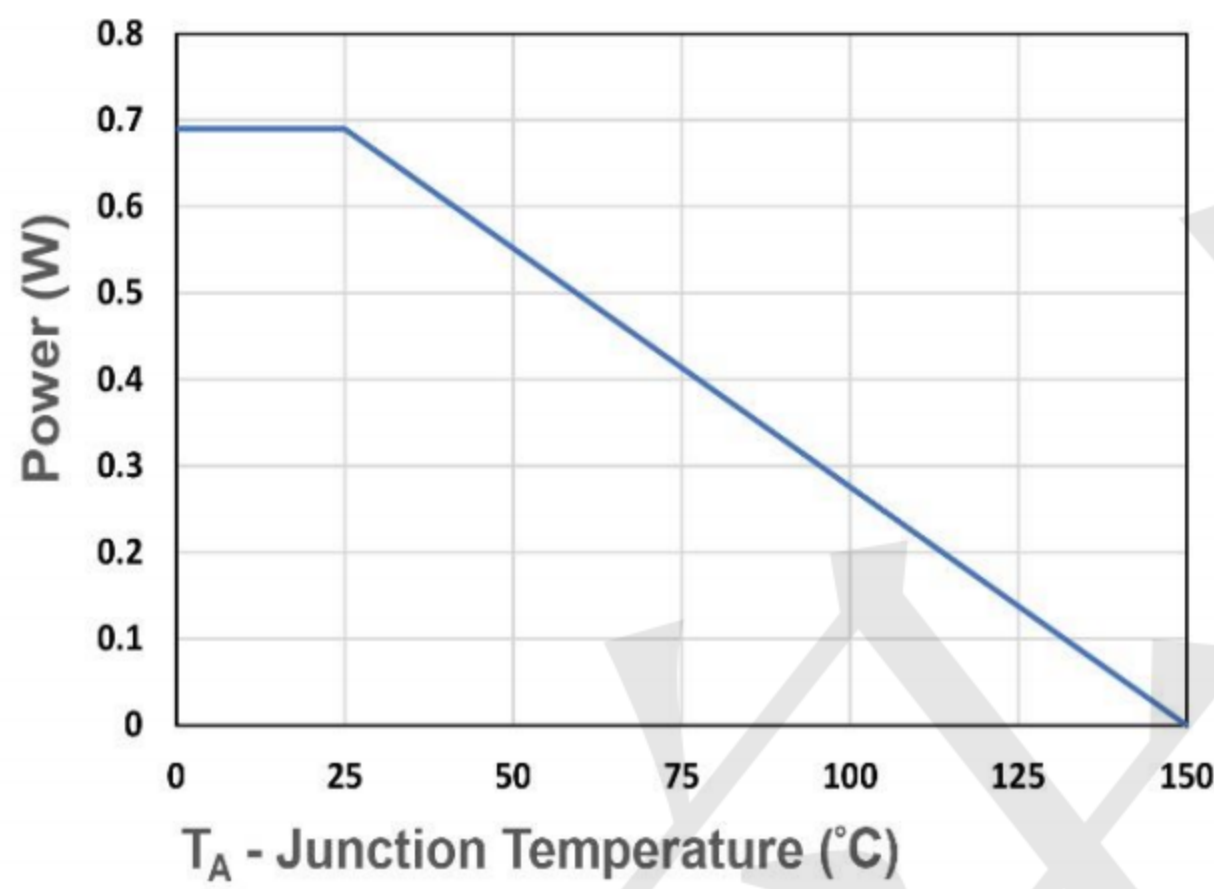


Figure 9. Power Dissipation

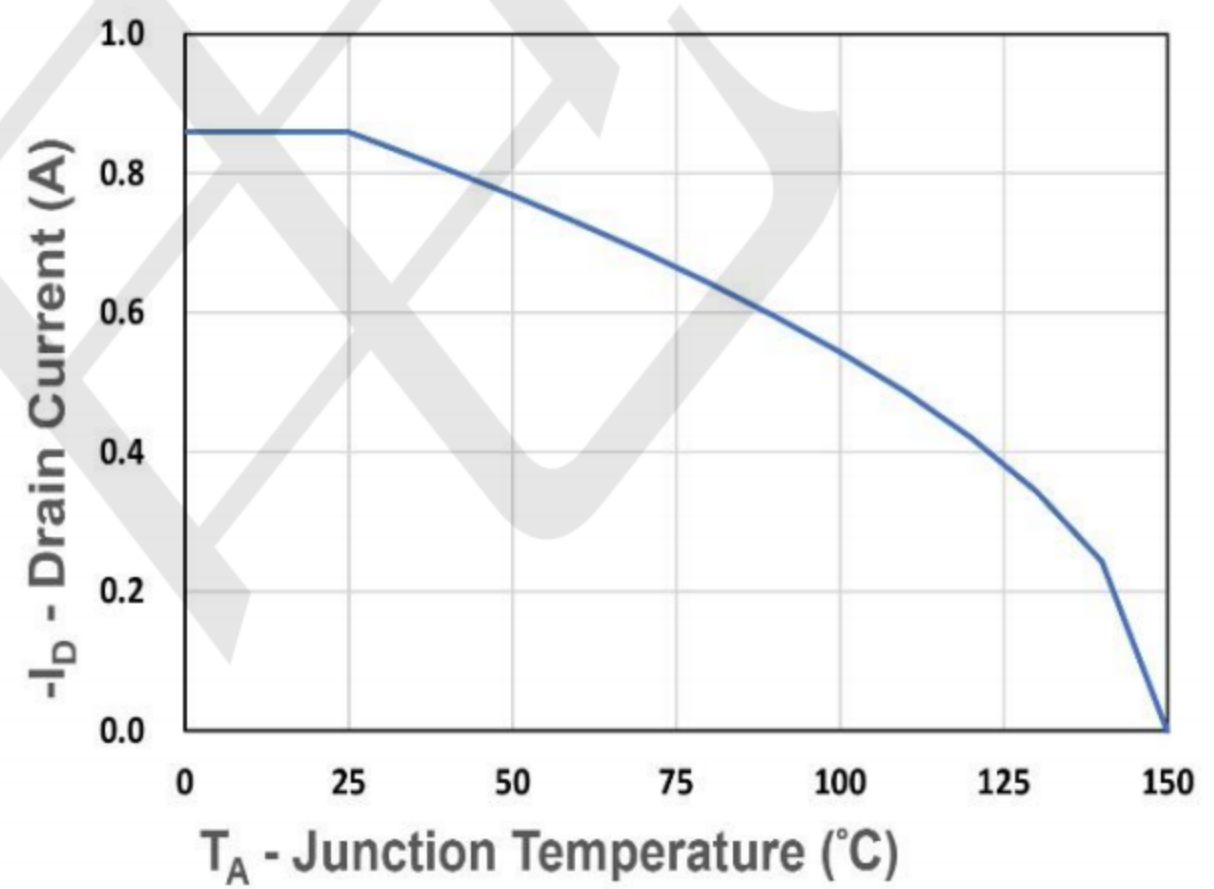


Figure 10. Drain Current

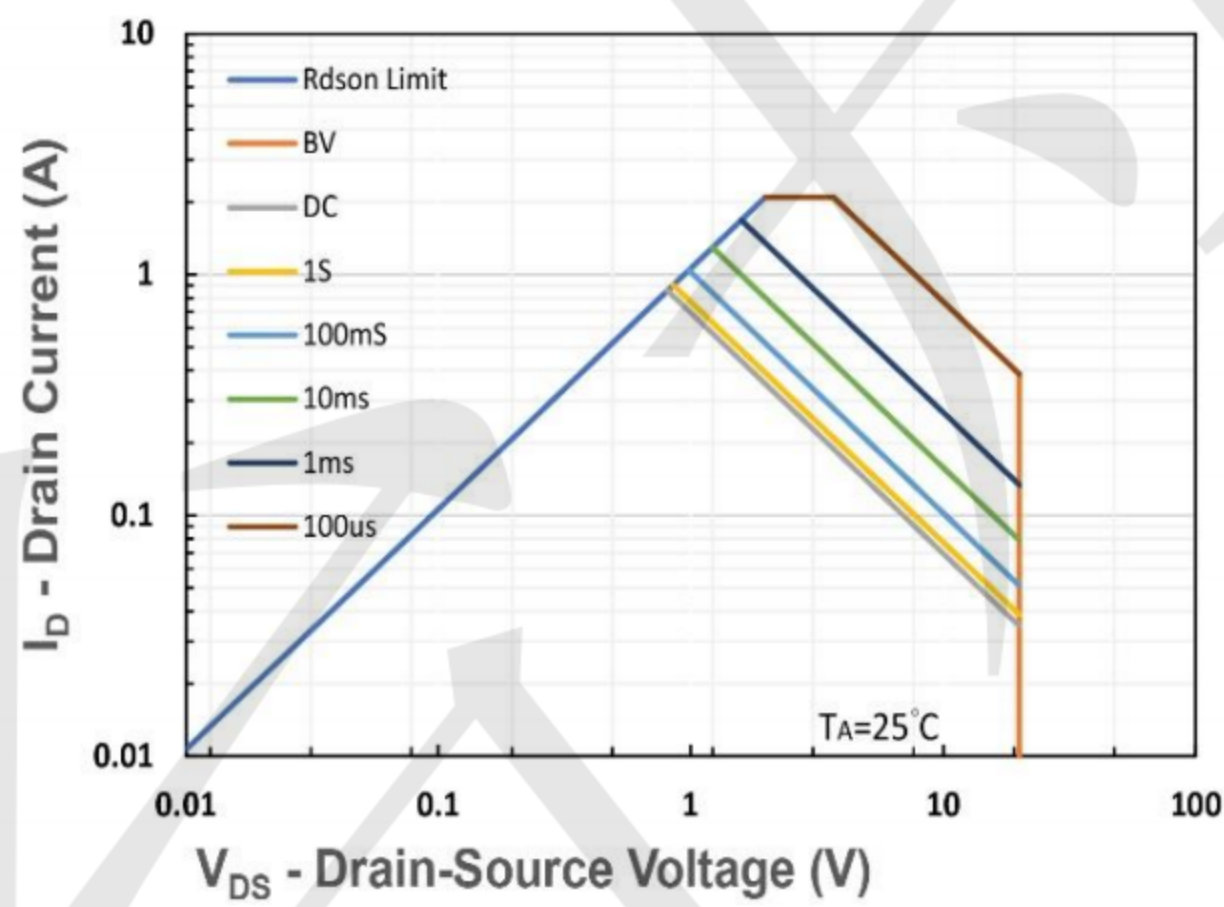


Figure 11. Safe Operating Area

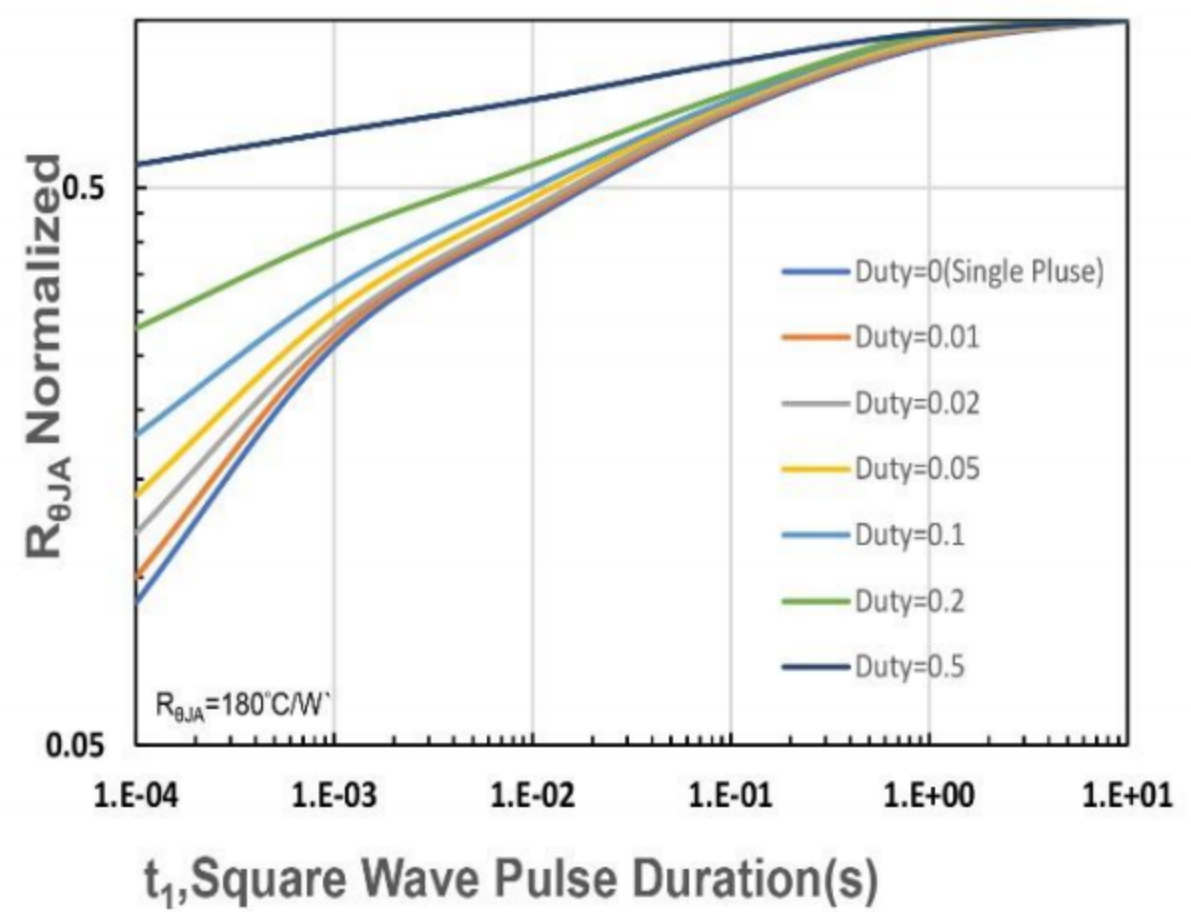
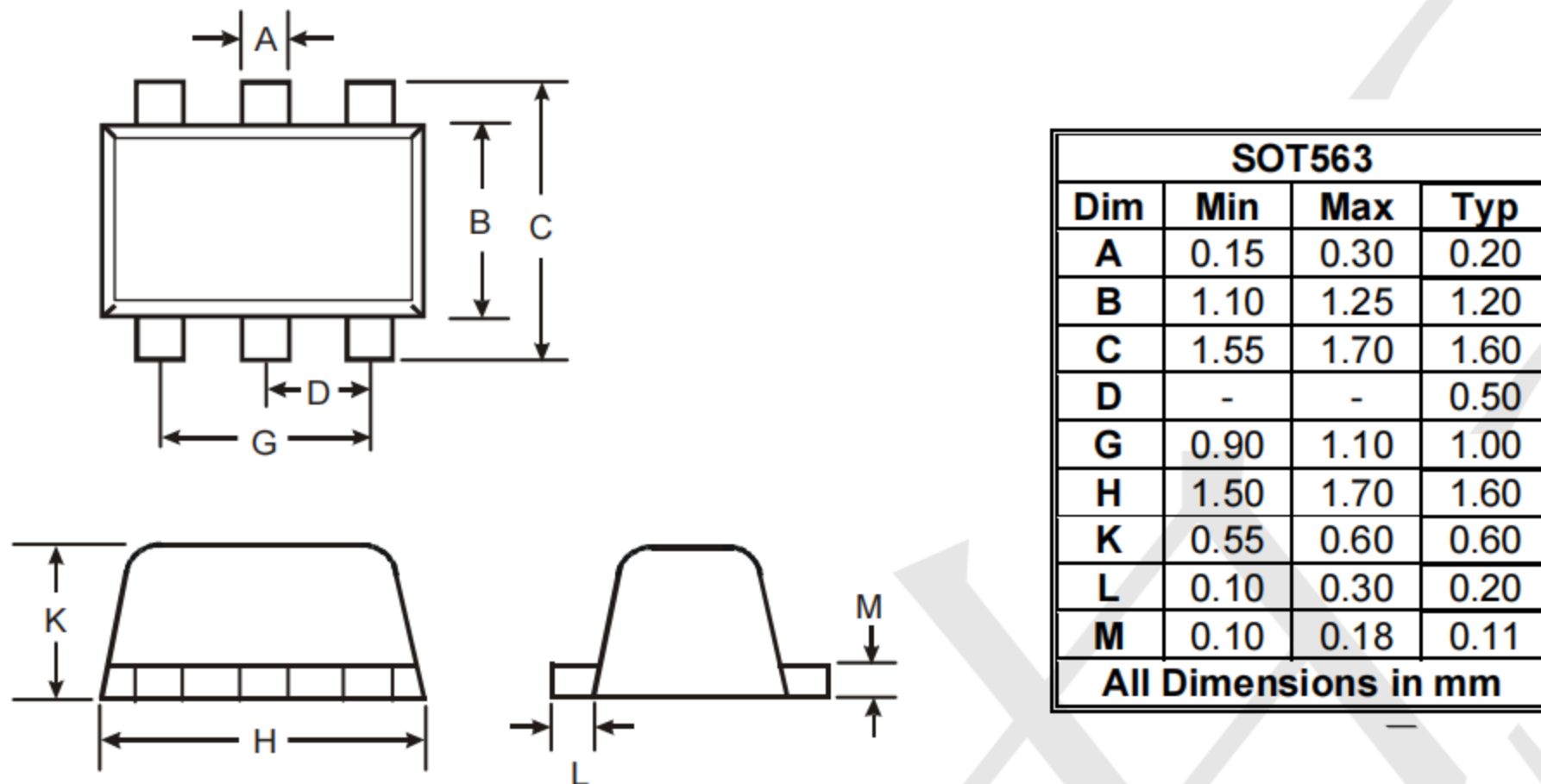
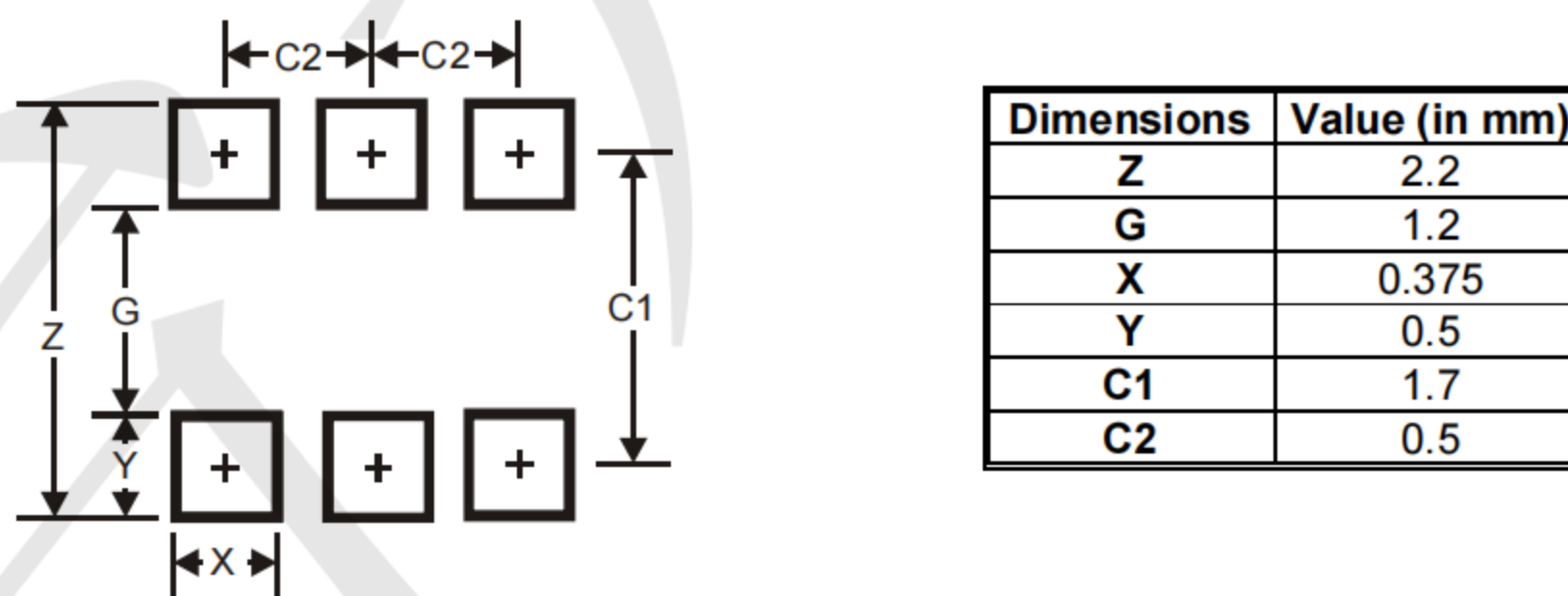


Figure 12. $R_{\theta JA}$ Transient Thermal Impedance

SOT-563 Package Outline Drawing



Suggested Pad Layout



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [TECH PUBLIC](#) manufacturer:

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [TK100A10N1,S4X\(S](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)
[IRS2092STRPBF-EL](#) [IPS70R2K0CEAKMA1](#) [TK31J60W5,S1VQ\(O](#) [TK31J60W,S1VQ\(O](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#)
[DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [P85W28HP2F-7071](#) [DMN1053UCP4-7](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#)
[DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [IPS60R3K4CEAKMA1](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [IPS60R360PFD7SAKMA1](#)
[DMN2990UFB-7B](#) [SSM3K35CT,L3F](#) [IPLK60R1K0PFD7ATMA1](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [IPWS65R035CFD7AXKSA1](#)
[MCQ7328-TP](#) [SSM3J143TU,LXHF](#) [DMN12M3UCA6-7](#) [PJMF280N65E1_T0_00201](#) [PJMF380N65E1_T0_00201](#)
[PJMF280N60E1_T0_00201](#) [PJMF600N65E1_T0_00201](#) [PJMF900N65E1_T0_00201](#)