

●Electrical characteristics (T_a=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|-----------------------|------|------|------|------|---|
| Gate-source leakage | I _{GSS} | - | - | ±10 | μA | V _{GS} =±20V, V _{DS} =0V |
| Drain-source breakdown voltage | V _{(BR)DSS} | 60 | - | - | V | I _D =1mA, V _{GS} =0V |
| Zero gate voltage drain current | I _{DSS} | - | - | 1 | μA | V _{DS} =60V, V _{GS} =0V |
| Gate threshold voltage | V _{GS(th)} | 1.0 | - | 3.0 | V | V _{DS} =10V, I _D =1mA |
| Static drain-source on-state resistance | R _{DS(on)} * | - | 78 | 109 | mΩ | I _D =5.0A, V _{GS} =10V |
| | | - | 94 | 131 | | I _D =5.0A, V _{GS} =4.5V |
| | | - | 100 | 140 | | I _D =5.0A, V _{GS} =4.0V |
| Forward transfer admittance | Y _{fs} * | 3.5 | - | - | S | I _D =5.0A, V _{DS} =10V |
| Input capacitance | C _{ISS} | - | 290 | - | pF | V _{DS} =10V |
| Output capacitance | C _{OSS} | - | 90 | - | pF | V _{GS} =0V |
| Reverse transfer capacitance | C _{RSS} | - | 35 | - | pF | f=1MHz |
| Turn-on delay time | t _{d(on)} * | - | 8 | - | ns | I _D =2.5A, V _{DD} =30V |
| Rise time | t _r * | - | 17 | - | ns | V _{GS} =10V |
| Turn-off delay time | t _{d(off)} * | - | 26 | - | ns | R _L =12Ω |
| Fall time | t _f * | - | 8 | - | ns | R _G =10Ω |
| Total gate charge | Q _g * | - | 8.0 | - | nC | V _{DD} =30V |
| Gate-source charge | Q _{gs} * | - | 1.4 | - | nC | I _D =5.0A |
| Gate-drain charge | Q _{gd} * | - | 1.4 | - | nC | V _{GS} =10V |

*Pulsed

●Body diode characteristics (Source-Drain) (T_a=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|-----------------|-------------------|------|------|------|------|---|
| Forward Voltage | V _{SD} * | - | - | 1.2 | V | I _s =5.0A, V _{GS} =0V |

*Pulsed

●Electrical characteristic curves (Ta=25°C)

Fig.1 Typical Output Characteristics (I)

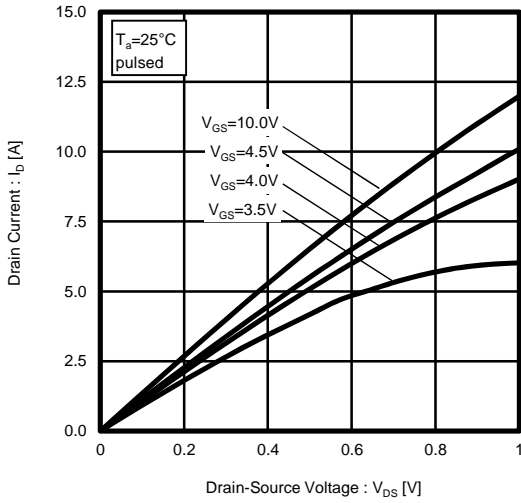


Fig.2 Typical Output Characteristics (II)

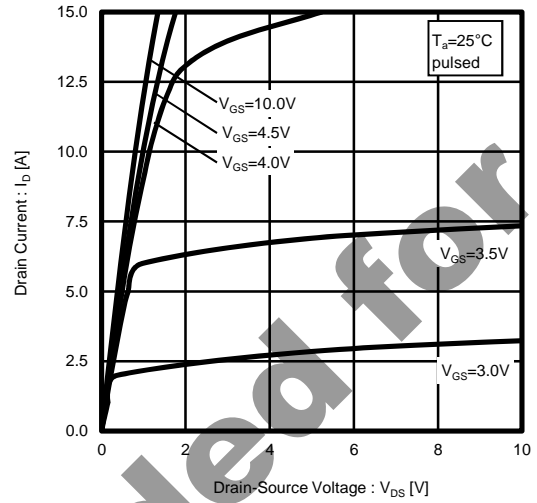


Fig.3 Static Drain-Source On-State Resistance vs. Drain Current

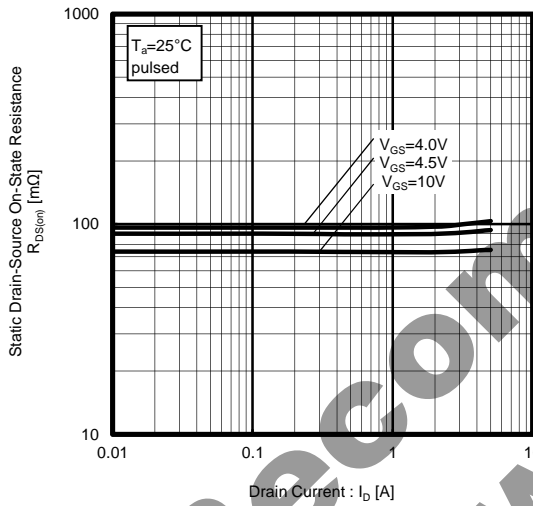


Fig.4 Static Drain-Source On-State Resistance vs. Drain Current

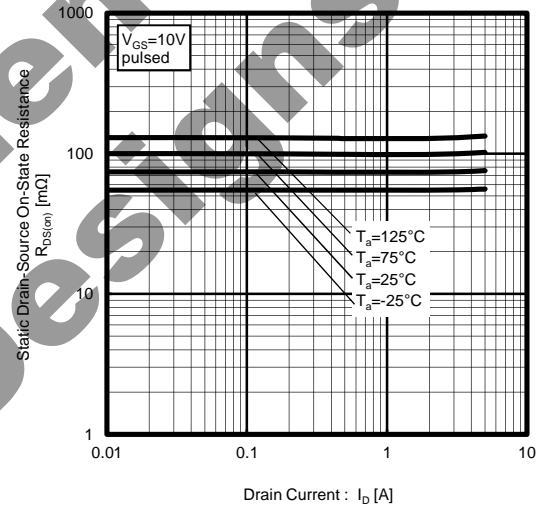


Fig.5 Static Drain-Source On-State Resistance vs. Drain Current

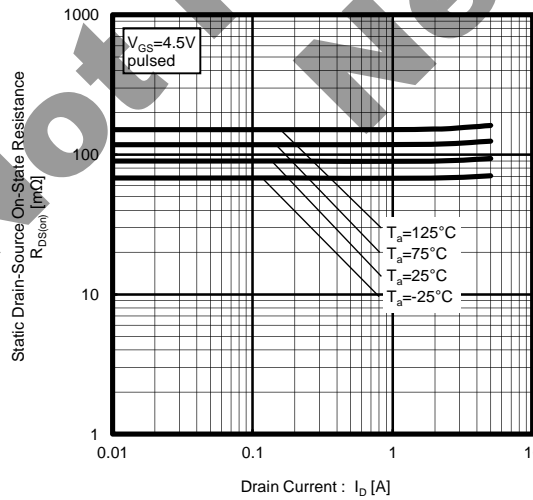


Fig.6 Static Drain-Source On-State Resistance vs. Drain Current

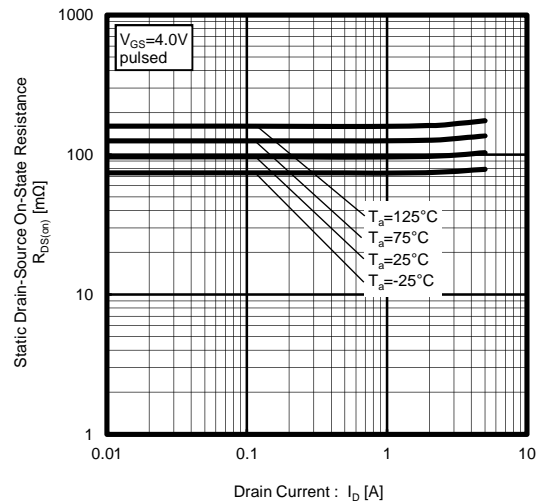


Fig.7 Forward Transfer Admittance vs. Drain Current

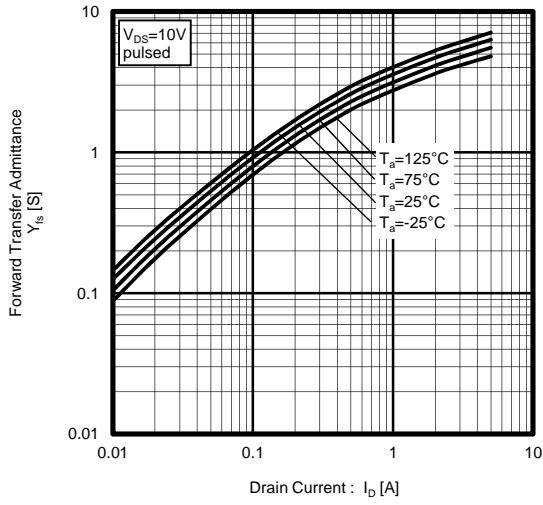


Fig.8 Typical Transfer Characteristics

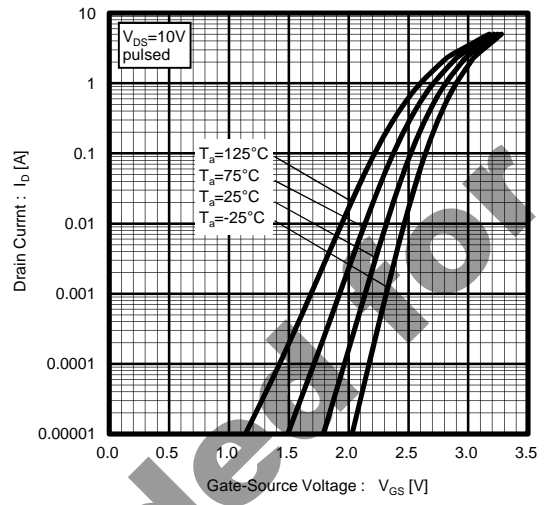


Fig.9 Source Current vs. Source-Drain Voltage

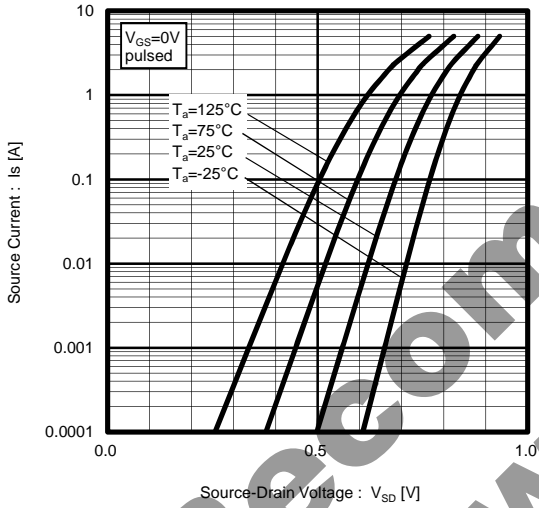


Fig.10 Static Drain-Source On-State Resistance vs. Gate-Source Voltage

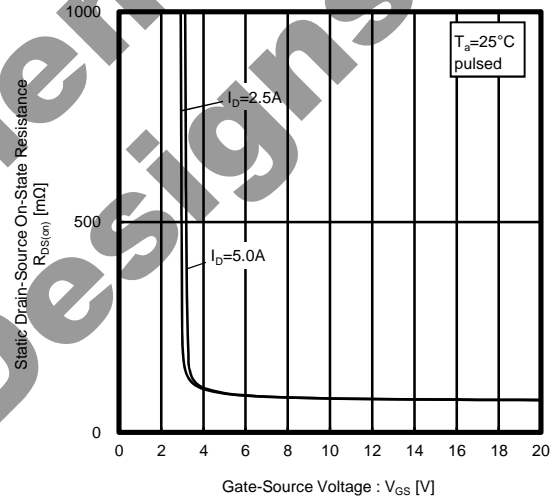


Fig.11 Switching Characteristics

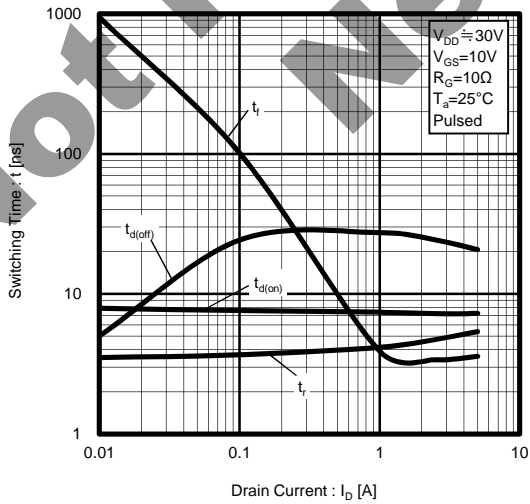


Fig.12 Dynamic Input Characteristics

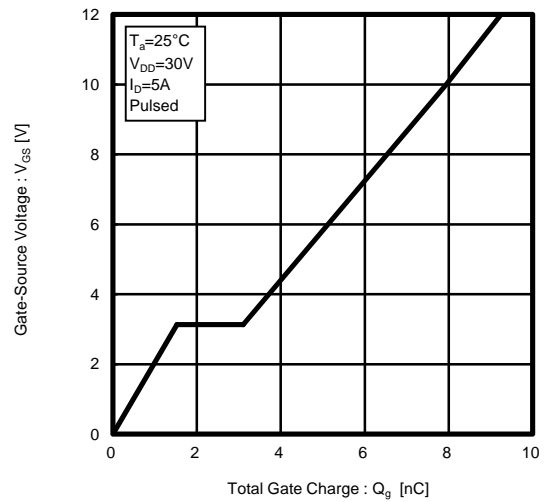


Fig.13 Typical Capacitance vs. Drain-Source Voltage

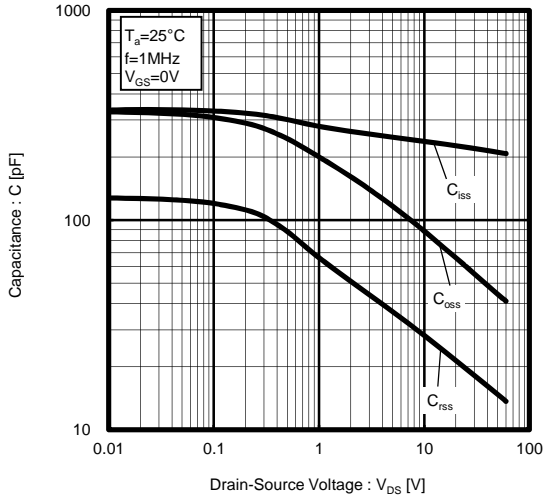


Fig.14 Maximum Safe Operating Area

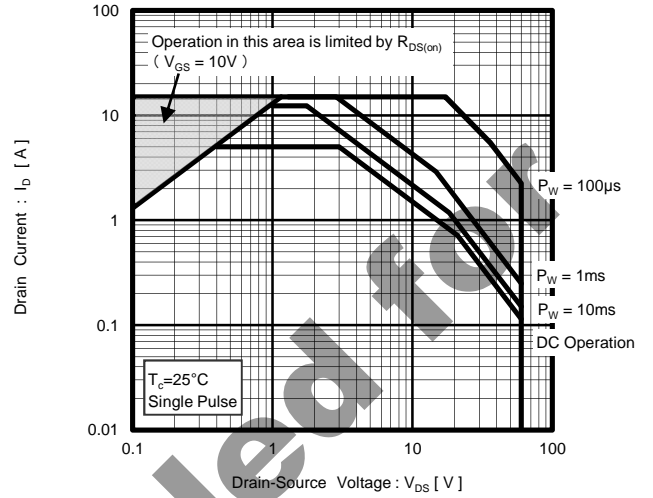
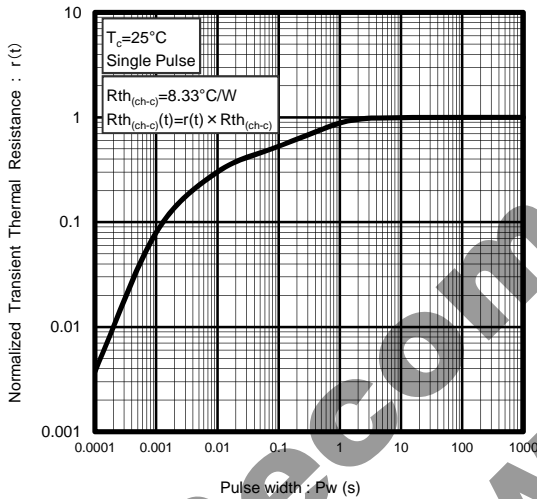


Fig.15 Normalized Transient Thermal Resistance v.s. Pulse Width



Not Recommended for New Designs

●Measurement circuits

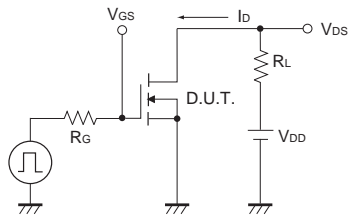


Fig.1-1 Switching Time Measurement Circuit

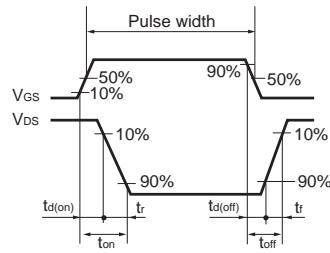


Fig.1-2 Switching Waveforms

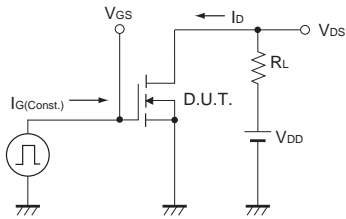


Fig.2-1 Gate Charge Measurement Circuit

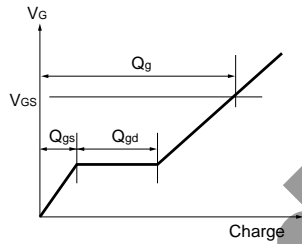


Fig.2-2 Gate Charge Waveform

Not Recommended for New Designs

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[ROHM Semiconductor:](#)

[RSD050N06TL](#)