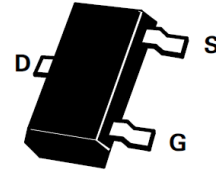


Features

- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q101, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative.
- <https://www.diodes.com/quality/product-definitions/>


SOT23

PARTMARKING DETAIL- MX

Absolute Maximum Ratings

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|---------------|-------------|-------------|
| Drain-Source Voltage | V_{DS} | -45 | V |
| Continuous Drain Current at $T_{amb}=25^{\circ}C$ | I_D | -90 | mA |
| Pulsed Drain Current | I_{DM} | -1.6 | A |
| Gate Source Voltage | V_{GS} | ± 20 | V |
| Power Dissipation at $T_{amb}=25^{\circ}C$ | P_{tot} | 330 | mW |
| Operating and Storage Temperature Range | $T_j:T_{stg}$ | -55 to +150 | $^{\circ}C$ |

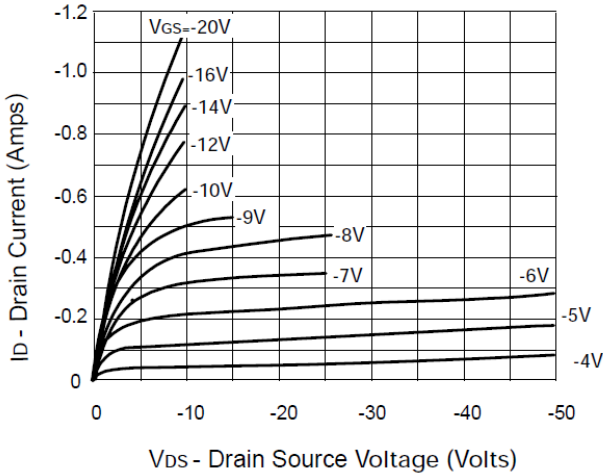
Electrical Characteristics (@ $T_A = +25^{\circ}C$, unless otherwise specified.)

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---|--------------|------|------|------|----------|----------------------------------|
| Drain-Source Breakdown Voltage | BV_{DSS} | -45 | -70 | | V | $I_D=-100\mu A, V_{GS}=0V$ |
| Gate-Source Threshold Voltage | $V_{GS(th)}$ | -1 | | -3.5 | V | $I_D=-1mA, V_{DS}=V_{GS}$ |
| Gate-Body Leakage | I_{GSS} | | | -20 | nA | $V_{GS}=-15V, V_{DS}=0V$ |
| Zero Gate Voltage Drain Current | I_{DSS} | | | -0.5 | μA | $V_{DS}=-25V, V_{GS}=0V$ |
| Static Drain-Source On-State Resistance (1) | $R_{DS(on)}$ | | 9 | 14 | Ω | $V_{GS}=-10V, I_D=-200mA$ |
| Forward Transconductance (1)(2) | g_{fs} | | 90 | | mS | $V_{DS}=-10V, I_D=-200mA$ |
| Input Capacitance (2) | C_{iss} | | 25 | | pF | $V_{DS}=-10V, V_{GS}=0V, f=1MHz$ |
| Turn-On Delay Time (2)(3) | $t_{d(on)}$ | | | 10 | ns | $V_{DD}\approx -25V, I_D=-200mA$ |
| Rise Time (2)(3) | t_r | | | 10 | ns | |
| Turn-Off Delay Time (2)(3) | $t_{d(off)}$ | | | 10 | ns | |
| Fall Time (2)(3) | t_f | | | 10 | ns | |

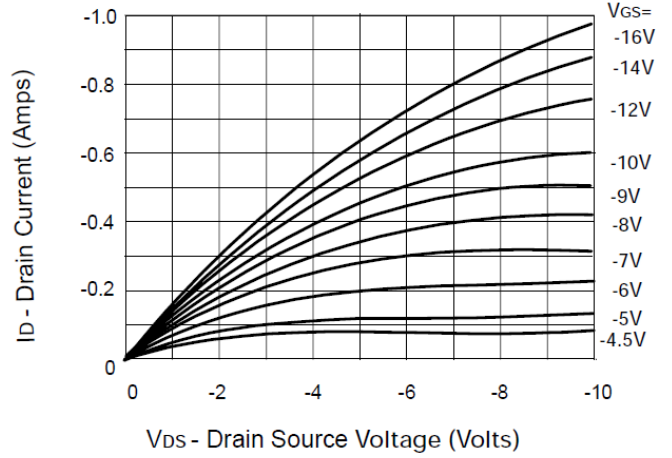
 (1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$ (2) Sample test.

 (3) Switching times measured with 50 Ω source impedance and <5ns rise time on a pulse generator
 Spice parameter data is available upon request for this device

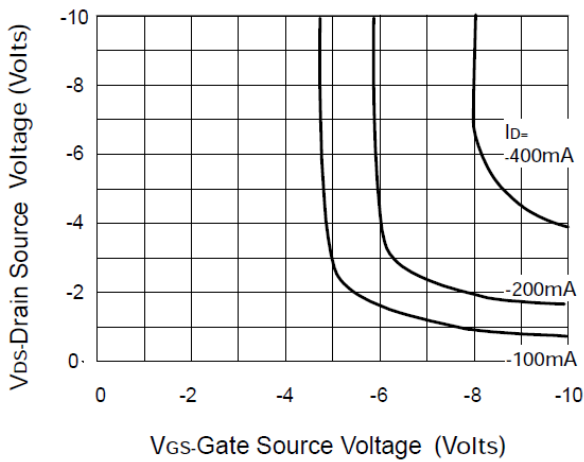
Typical Characteristics



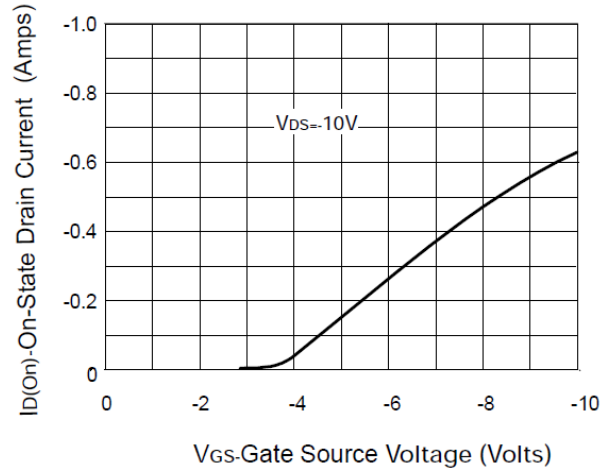
Output Characteristics



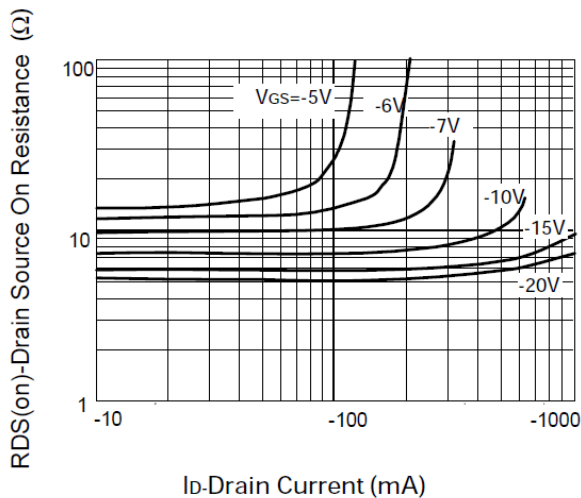
Saturation Characteristics



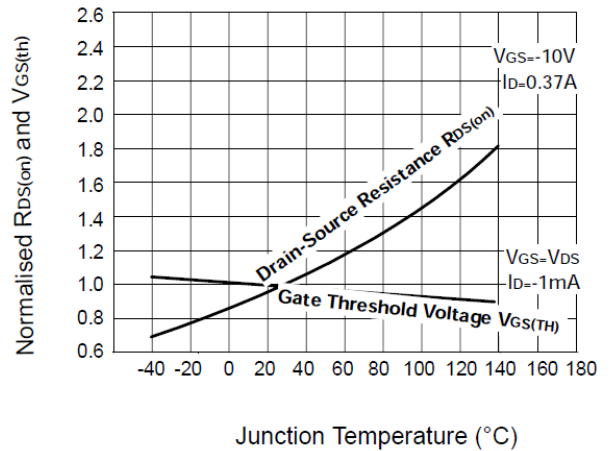
Voltage Saturation Characteristics



Transfer Characteristics

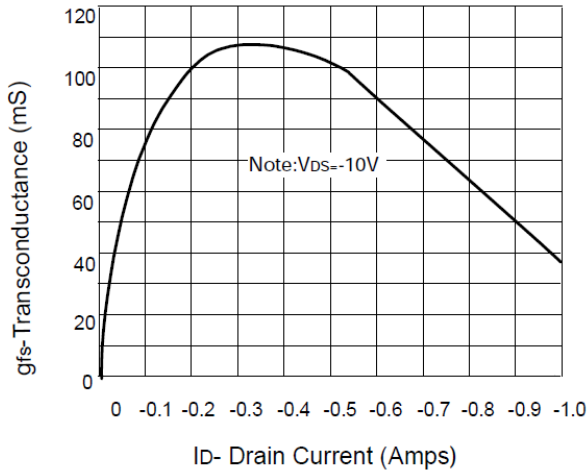


On-resistance vs Drain Current

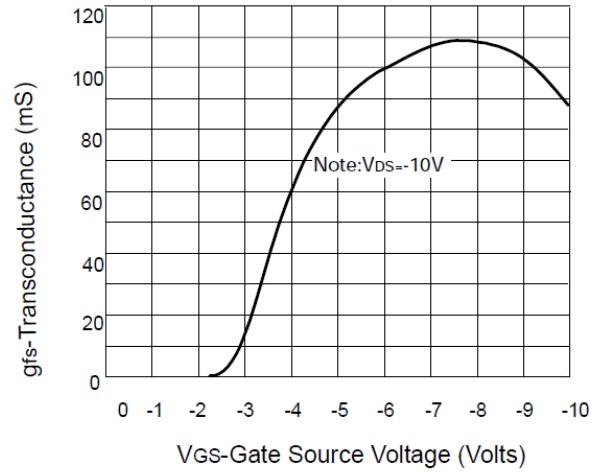


Normalised $R_{DS(on)}$ and $V_{GS(th)}$ vs Temperature

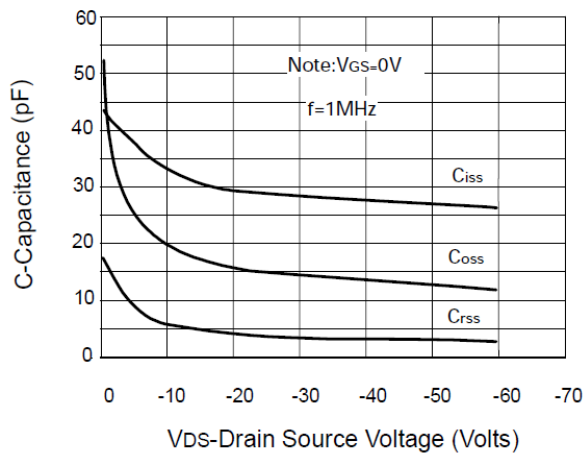
Typical Characteristics (continued)



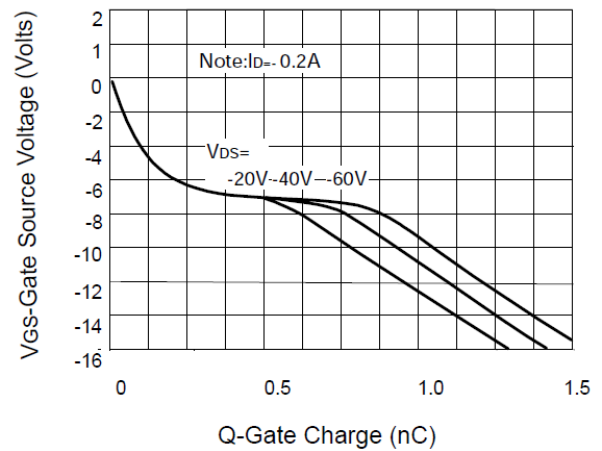
Transconductance v drain current



Transconductance v gate-source voltage



Capacitance v drain-source voltage



Gate charge v gate-source voltage

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