

Product Summary

| $V_{(BR)DSS}$ | $R_{DS(on)MAX}$ | I_D |
|---------------|-----------------|-------|
| 150V | 300mΩ@10V | 2A |

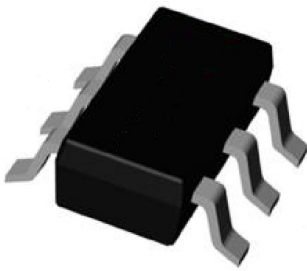
Feature

- Trench Technology
- Supper high density cell design
- Excellent ON resistance for higher DC current

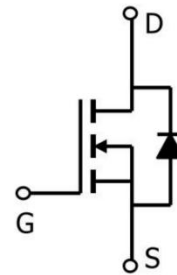
Application

- Driver for Relay, Solenoid, Motor, LED etc
- DC-DC converter circuit
- Power Switch
- Load Switch
- Charging

Package

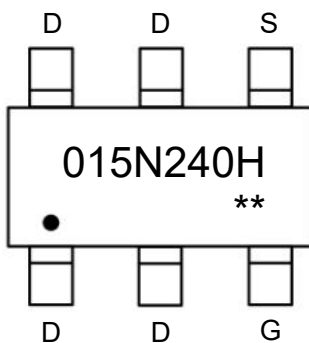


SOT-23-6L



Circuit diagram

Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|-----------------|------------|------|
| Drain-Source Voltage | V_{DS} | 150 | V |
| Gate-Source Voltage | V_{GS} | ±20 | V |
| Continuous Drain Current | I_D | 2 | A |
| Pulsed Drain Current | I_{DM} | 8 | A |
| Power Dissipation | P_D | 2.1 | W |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 59.5 | °C/W |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature | T_{STG} | -55 ~ +150 | °C |

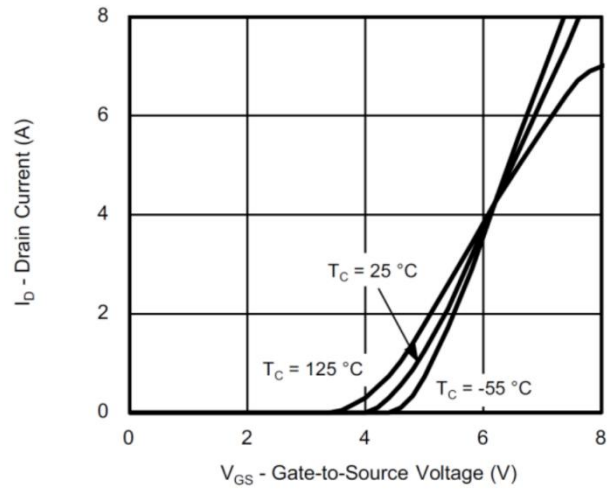
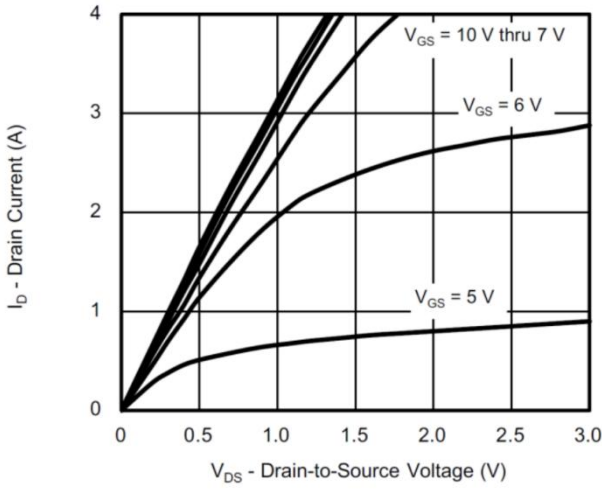
Electrical characteristics (TA=25 °C, unless otherwise noted)

| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---------------|---|------|------|------|------|
| Static Characteristics | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 250\mu A$ | 150 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = 150V, V_{GS} = 0V$ | | | 1 | μA |
| Gate-body leakage current | I_{GSS} | $V_{GS} = \pm 20V, V_{DS} = 0V$ | | | ±100 | nA |
| Gate threshold voltage ¹⁾ | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\mu A$ | 2 | 3 | 4 | V |
| Drain-source on-resistance ¹⁾ | $R_{DS(on)}$ | $V_{GS} = 10V, I_D = 1.5A$ | | 240 | 300 | mΩ |
| Dynamic characteristics²⁾ | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$ | | 97 | | pF |
| Output Capacitance | C_{oss} | | | 22 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 9 | | |
| Total Gate Charge | Q_g | $V_{DS} = 75V, V_{GS} = 10V, I_D = 1.5A$ | | 3.6 | | nC |
| Gate-Source Charge | Q_{gs} | | | 0.75 | | |
| Gate-Drain Charge | Q_{gd} | | | 0.8 | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{DD} = 75V, V_{GS} = 10V, R_G = 1\Omega, R_L = 39\Omega, I_D = 1.5A$ | | 6 | | nS |
| Turn-on rise time | t_r | | | 10 | | |
| Turn-off delay time | $t_{d(off)}$ | | | 10 | | |
| Turn-off fall time | t_f | | | 6 | | |
| Source-Drain Diode characteristics | | | | | | |
| Diode Forward voltage ¹⁾ | V_{SD} | $V_{GS} = 0V, I_S = 1A, T_J = 25^\circ C$ | | | 1.2 | V |

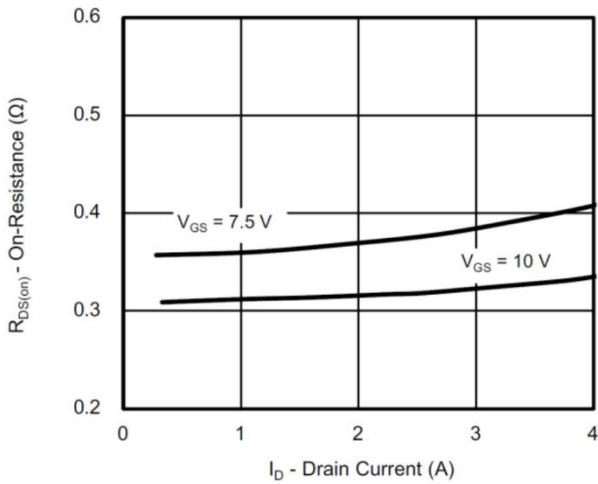
Notes:

- 1) Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%
- 2) Guaranteed by design, not subject to production

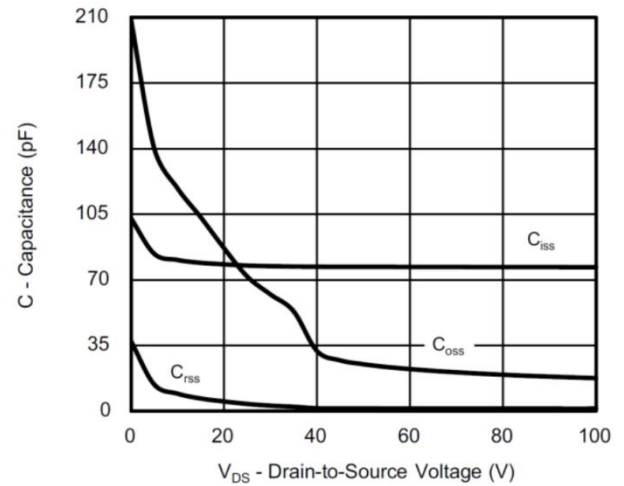
Typical Characteristics



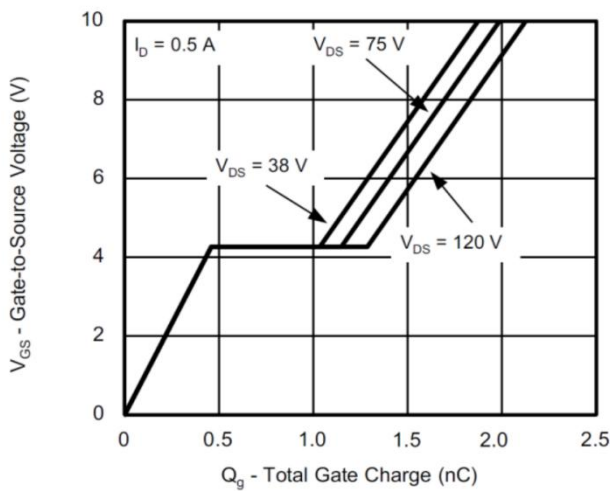
Output Characteristics



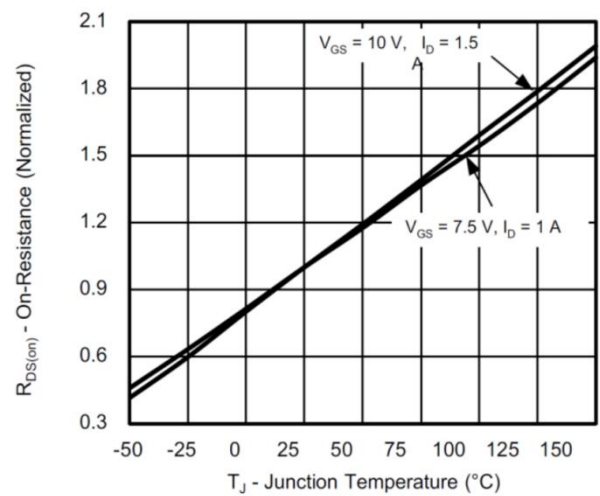
Transfer Characteristics



On-Resistance vs. Drain Current and Gate Voltage



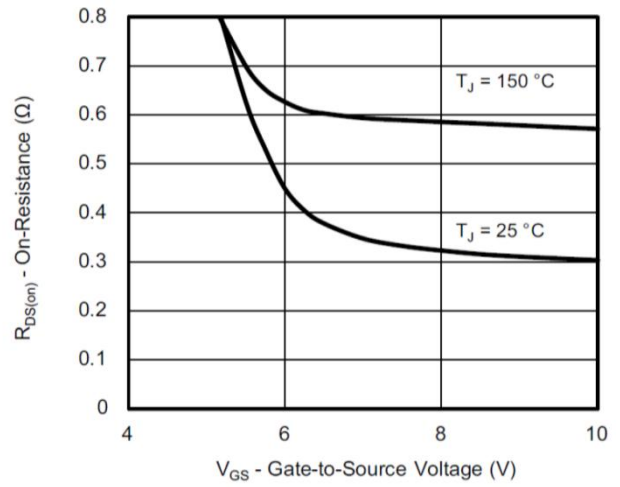
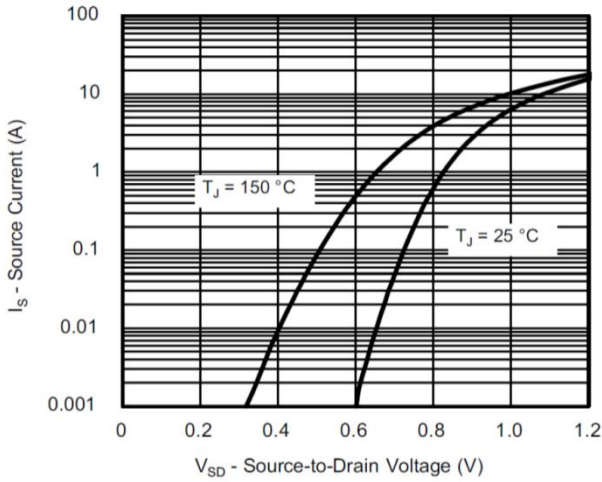
Capacitance



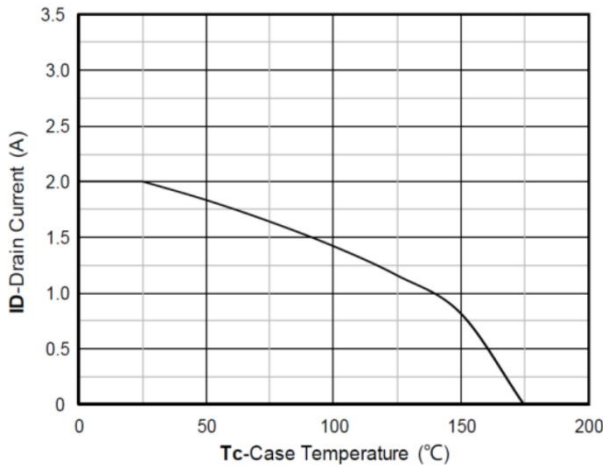
Gate Charge

On-Resistance vs. Junction Temperature

Typical Characteristics

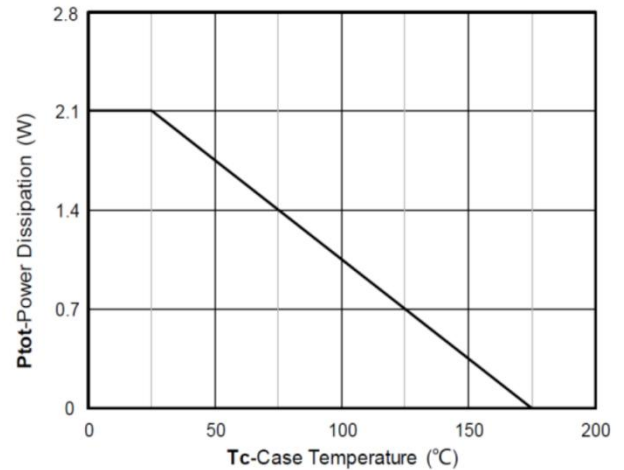


Source-Drain Diode Forward Voltage

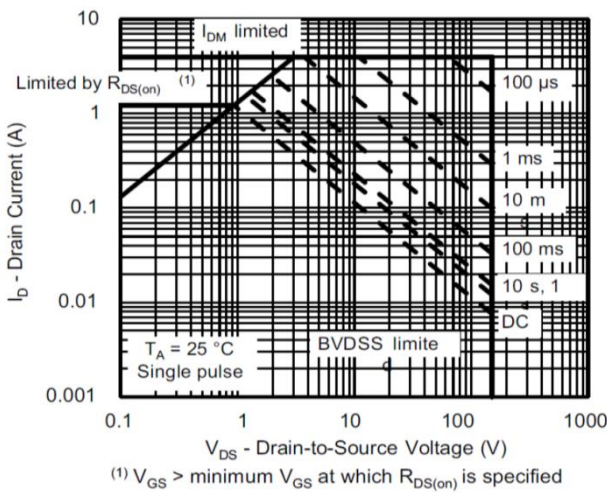


Current dissipation

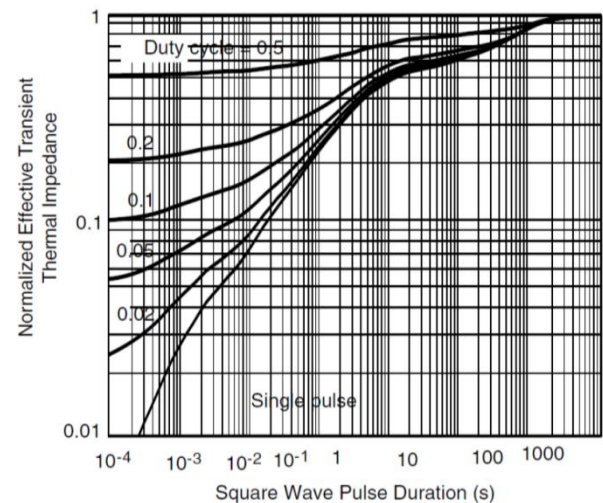
On-Resistance vs. Gate-to-Source Voltage



Power dissipation

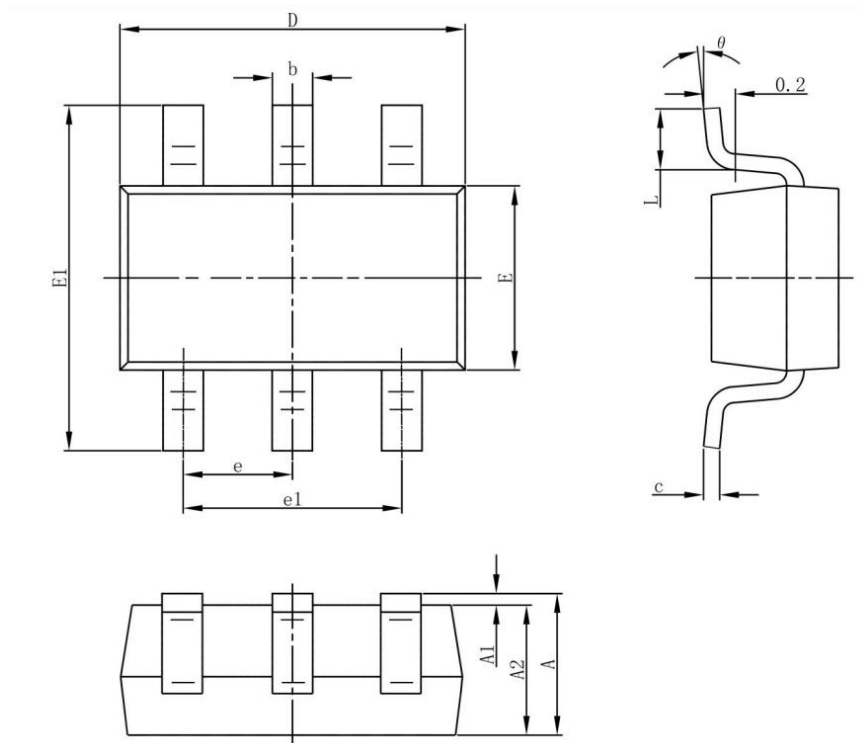


Safe Operating Area, Junction-to-Ambient



Normalized Thermal Transient Impedance, Junction-to-Ambient

SOT-23-6L Package Information



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.820 | 3.020 | 0.111 | 0.119 |
| E | 1.500 | 1.700 | 0.059 | 0.067 |
| E1 | 2.650 | 2.950 | 0.104 | 0.116 |
| e | 0.950 (BSC) | | 0.037 (BSC) | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.300 | 0.600 | 0.012 | 0.024 |
| θ | 0° | 8° | 0° | 8° |