

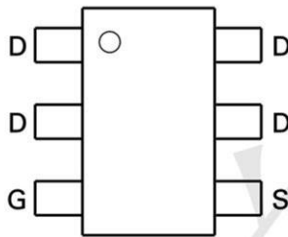
Product Summary

| $V_{(BR)DSS}$ | $R_{DS(on)MAX}$ | I_D |
|---------------|-----------------|-------|
| -30V | 60mΩ@-10 V | -4.1A |
| | 87mΩ@-4.5V | |

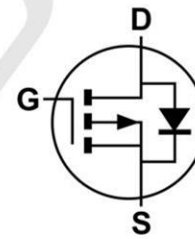
Application

- DC-DC Converters.
- Load Switch.
- Power Management.

Package and Pin Configuration



Circuit diagram



Equivalent Circuit

Marking: TP 3P5

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

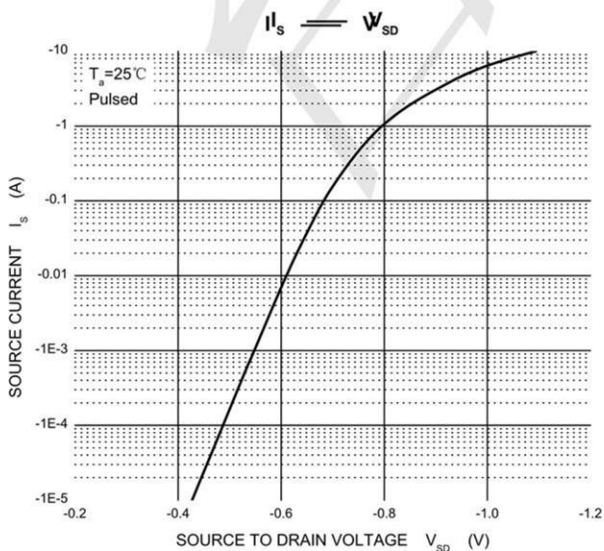
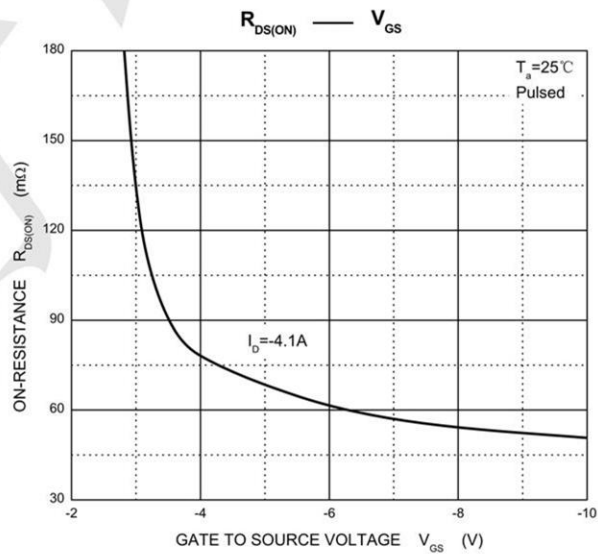
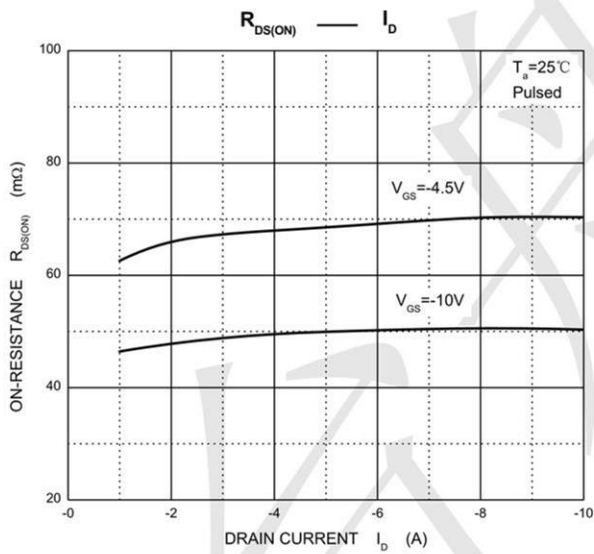
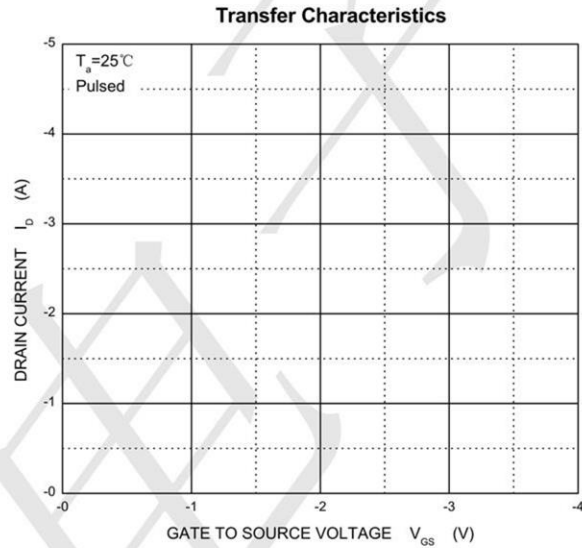
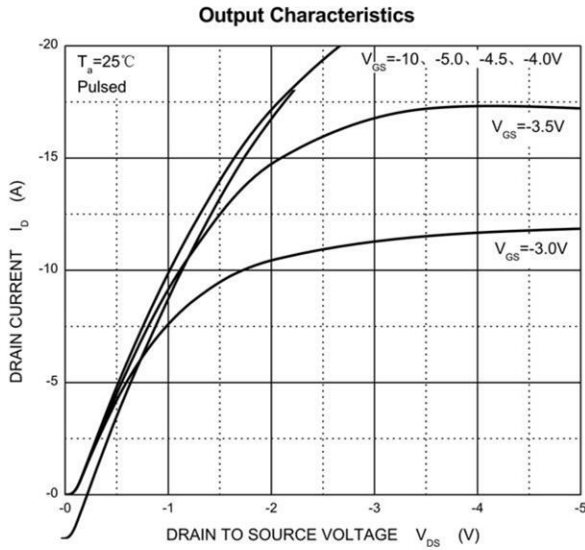
| Parameter | Symbol | Value | Unit |
|---|-----------------|----------|---------------------------|
| Drain-Source Voltage | V_{DS} | -30 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | V |
| Continuous Drain Current | I_D | -4.1 | A |
| Power Dissipation | P_D | 350 | mW |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 357 | $^\circ\text{C}/\text{W}$ |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55~+150 | $^\circ\text{C}$ |

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

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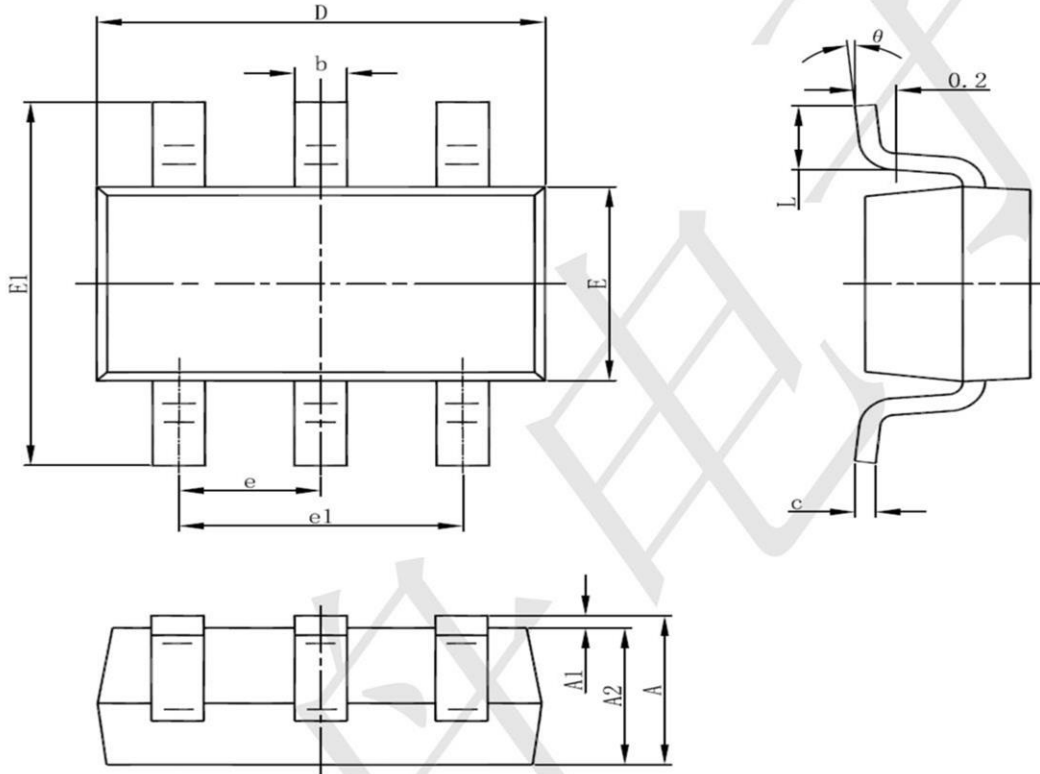
| Parameter | Symbol | Test Condition | Min | Typ | Max | Units |
|---|---------------|---|-----|------|-----------|------------|
| Static characteristics | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = -250\mu A$ | -30 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = -24V, V_{GS} = 0V$ | | | -1 | μA |
| Gate-source leakage current | I_{GSS} | $V_{GS} = \pm 20V, V_{DS} = 0V$ | | | ± 100 | nA |
| Drain-source on-resistance (note 1) | $R_{DS(on)}$ | $V_{GS} = -10V, I_D = -4.1A$ | | 50 | 60 | m Ω |
| | | $V_{GS} = -4.5V, I_D = -3A$ | | 68 | 87 | m Ω |
| Forward transconductance (note 1) | g_{fs} | $V_{DS} = -5V, I_D = -4A$ | 5.5 | | | S |
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = -250\mu A$ | -1 | -1.4 | -3 | V |
| Diode forward voltage (note 1) | V_{SD} | $I_S = -1A, V_{GS} = 0V$ | | | -1 | V |
| Dynamic characteristics (note 2) | | | | | | |
| Input capacitance | C_{iss} | $V_{DS} = -15V, V_{GS} = 0V, f = 1MHz$ | | 700 | | pF |
| Output capacitance | C_{oss} | | | 120 | | pF |
| Reverse transfer capacitance | C_{rss} | | | 75 | | pF |
| Switching Characteristics (note 2) | | | | | | |
| Turn-on delay time | $t_{d(on)}$ | $V_{GS} = -10V, V_{DS} = -15V,$ $R_L = 3.6\Omega, R_{GEN} = 3\Omega$ | | 8.6 | | ns |
| Turn-on rise time | t_r | | | 5.0 | | ns |
| Turn-off delay time | $t_{d(off)}$ | | | 28.2 | | ns |
| Turn-off fall time | t_f | | | 13.5 | | ns |

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)





SOT23-6 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° |