

8367 D-channel MOSFET

| $V_{(BR)DSS}$ | $R_{DS(on)MAX}$ | I_D |
|---------------|-----------------|-------|
| -20V | 60mΩ@-4.5V | -2.8A |
| | 85mΩ@-2.0V | |
| | 160mΩ@-1.5V | |

SOT-23



1. GATE
2. SOURCE
3. DRAIN

FEATURE

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

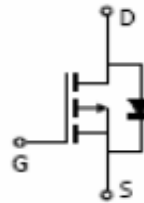
APPLICATION

- DC/DC Converter
- Load Switch for Portable Devices
Battery Switch

MARKING



Equivalent Circuit



ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

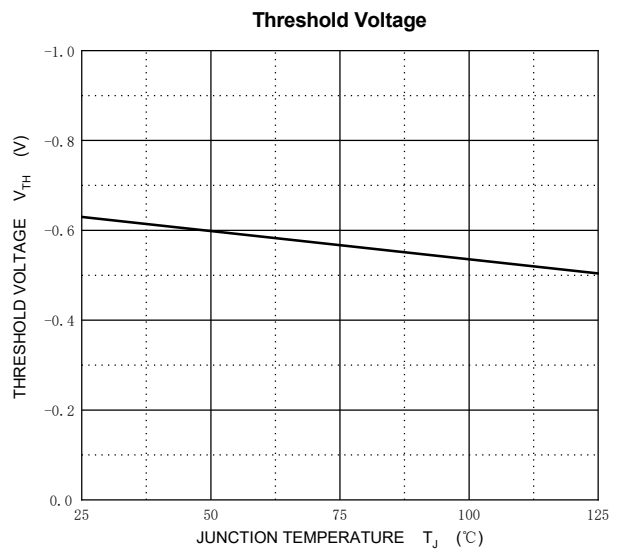
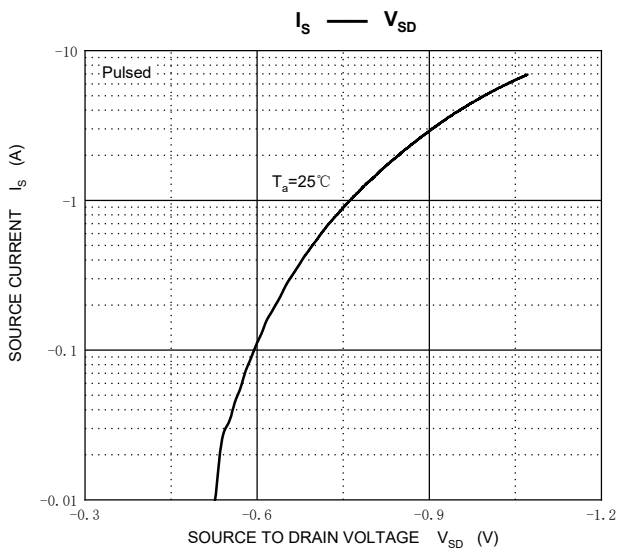
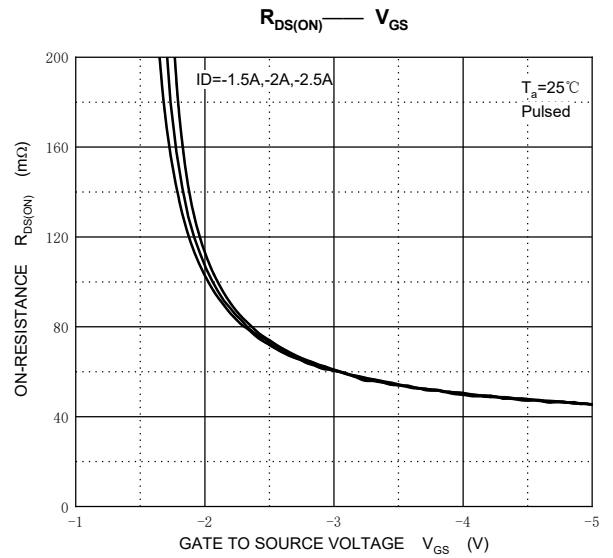
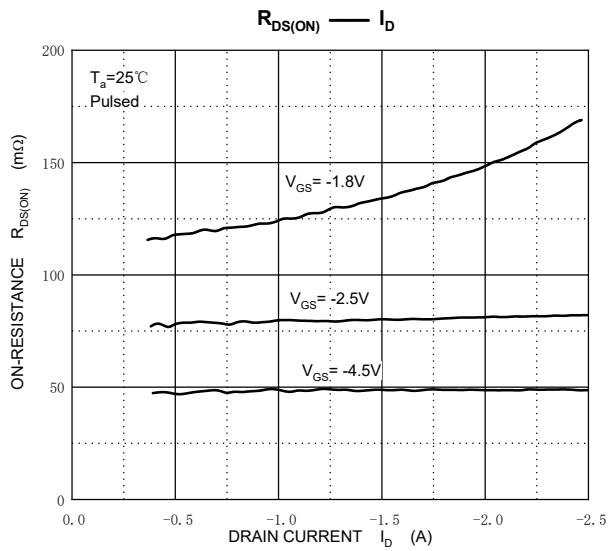
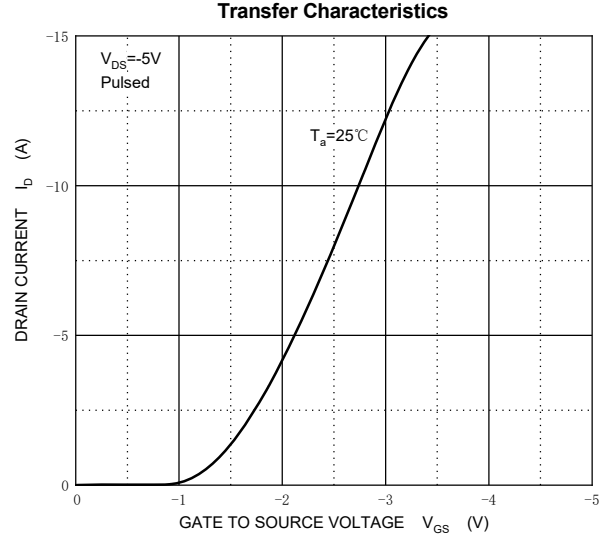
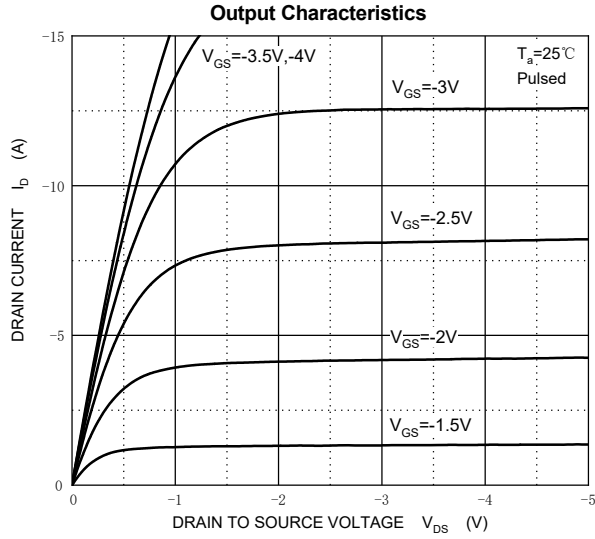
| Parameter | Symbol | Value | Unit |
|--|-----------------|-----------|---------------|
| Drain-Source Voltage | V_{DS} | -20 | V |
| Gate-Source Voltage | V_{GS} | ±8 | V |
| Continuous Drain Current | I_D | -2.8 | A |
| Power Dissipation | P_D^a | 0.35 | W |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 357 | $^{\circ}C/W$ |
| Operation Junction and Storage Temperature Range | T_J, T_{STG} | -55~ +150 | $^{\circ}C$ |

a. Device mounted on no heat sink.

$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---|---------------|--|------|--------|-----------|------------|
| Static Characteristics | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = -250\mu A$ | -20 | | | V |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = -20V, V_{GS} = 0V$ | | | -1 | μA |
| Gate-body leakage current | I_{GSS} | $V_{GS} = \pm 8V, V_{DS} = 0V$ | | | ± 0.1 | μA |
| Gate threshold voltage (note 1) | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = -250\mu A$ | -0.4 | -0.626 | -1 | V |
| Drain-source on-resistance (note 1) | $R_{DS(on)}$ | $V_{GS} = -4.5V, I_D = -2.5A$ | 30 | 48 | 60 | m Ω |
| | | $V_{GS} = -2.5V, I_D = -2A$ | 40 | 70.5 | 85 | |
| | | $V_{GS} = -1.8V, I_D = -1.5A$ | 90 | 130 | 160 | |
| Forward transconductance (note 1) | g_{FS} | $V_{DS} = -10V, I_D = -2.5A$ | 3 | | 10 | S |
| Dynamic characteristics (note 2) | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS} = -8V, V_{GS} = 0V, f = 1MHz$ | | 640 | | pF |
| Output Capacitance | C_{oss} | | | 120 | | pF |
| Reverse Transfer Capacitance | C_{rss} | | | 82 | | pF |
| Gate resistance | R_g | $f = 1MHz$ | | 100 | | Ω |
| Total Gate Charge | Q_g | $V_{DS} = -10V, V_{GS} = -4.5V, I_D = -2.5A$ | | 5.5 | 10 | nC |
| | | $V_{DS} = -10V, V_{GS} = -2.5V, I_D = -2.5A$ | | 3.3 | 6 | nC |
| Gate-Source Charge | Q_{gs} | $V_{DS} = -10V, V_{GS} = -2.5V, I_D = -2.5A$ | | 0.7 | | nC |
| Gate-Drain Charge | Q_{gd} | $V_{DS} = -10V, V_{GS} = -2.5V, I_D = -2.5A$ | | 1.3 | | nC |
| Source-Drain Diode characteristics | | | | | | |
| Diode forward current | I_S | $T_C = 25^\circ C$ | | | -2.8 | A |
| Diode Forward voltage (note 1) | V_{DS} | $V_{GS}, I_S = -2A$ | | | -1.2 | V |

- Notes :**
1. Pulse test; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
 2. Guaranteed by design, not subject to production testing.





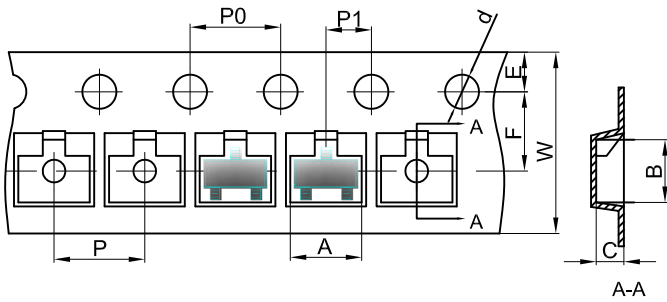
| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

SOT-23 Suggested Pad Layout



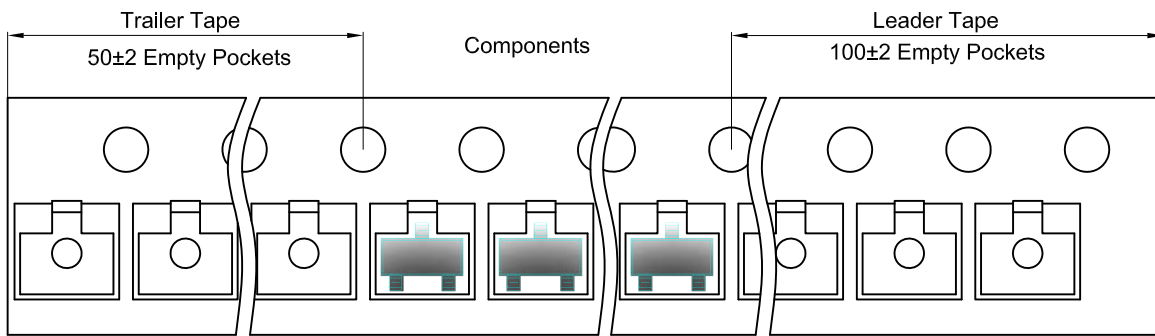
- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

SOT-23 Embossed Carrier Tape

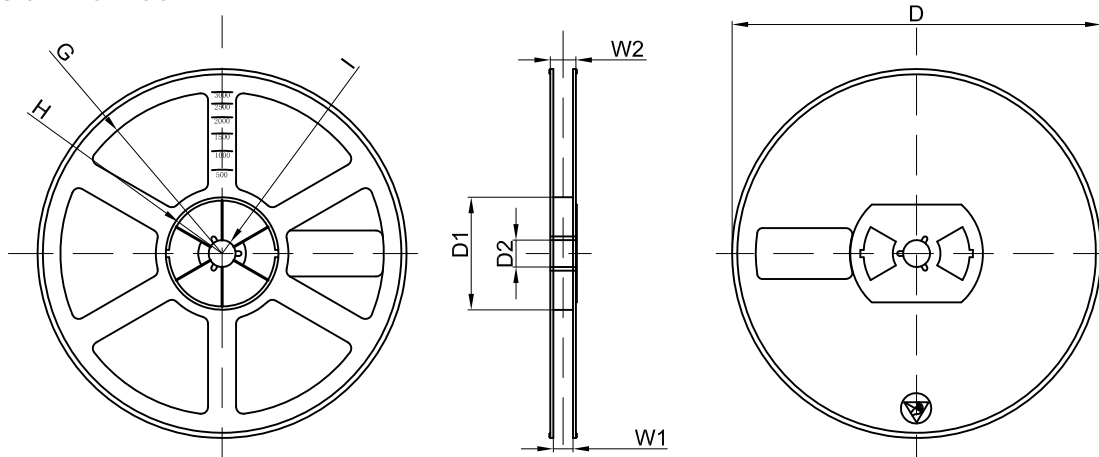


| Dimensions are in millimeter | | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| Pkg type | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-23 | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

SOT-23 Tape Leader and Trailer



SOT-23 Reel



| Dimensions are in millimeter | | | | | | | | |
|------------------------------|---------|-------|-------|--------|--------|-------|------|-------|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7"Dia | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL | Reel Size | |
|----------|-----------|--|
| 3000 pcs | 7 inch | |