

Features

- High Dense Cell Design for Extremely Low $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- Surface Mount Package
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

N-Channel MOSFET

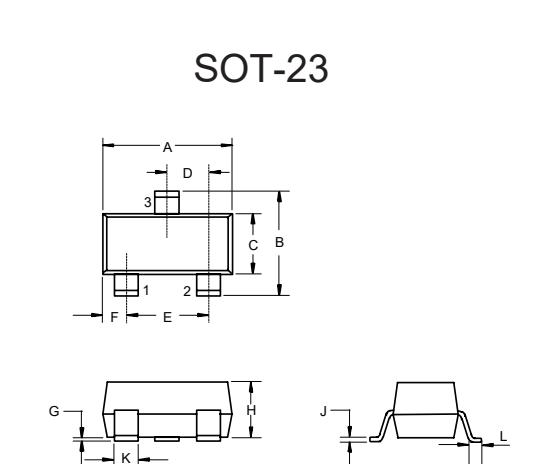
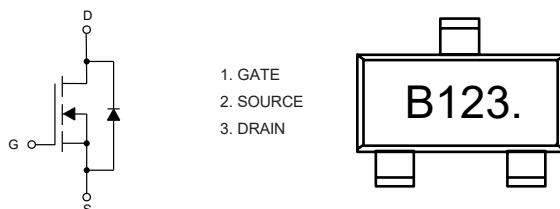
Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 357°C/W Junction to Ambient

| Parameter | Symbol | Rating | Unit |
|--------------------------|----------|----------|------|
| Drain-Source Voltage | V_{DS} | 100 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | V |
| Drain Current-Continuous | I_D | 0.17 | A |
| Drain Current-Pulsed | I_{DM} | 0.68 | A |
| Power Dissipation | P_D | 0.35 | W |

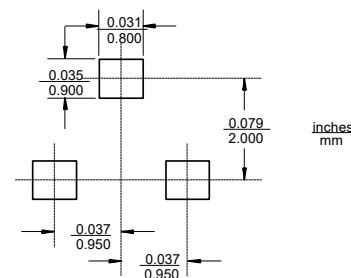
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure and Marking Code



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.110 | 0.120 | 2.80 | 3.04 | |
| B | 0.083 | 0.104 | 2.10 | 2.64 | |
| C | 0.047 | 0.055 | 1.20 | 1.40 | |
| D | 0.034 | 0.041 | 0.85 | 1.05 | |
| E | 0.067 | 0.083 | 1.70 | 2.10 | |
| F | 0.018 | 0.024 | 0.45 | 0.60 | |
| G | 0.0004 | 0.006 | 0.01 | 0.15 | |
| H | 0.035 | 0.043 | 0.90 | 1.10 | |
| J | 0.003 | 0.007 | 0.08 | 0.18 | |
| K | 0.012 | 0.020 | 0.30 | 0.51 | |
| L | 0.007 | 0.020 | 0.20 | 0.50 | |

Suggested Solder Pad Layout



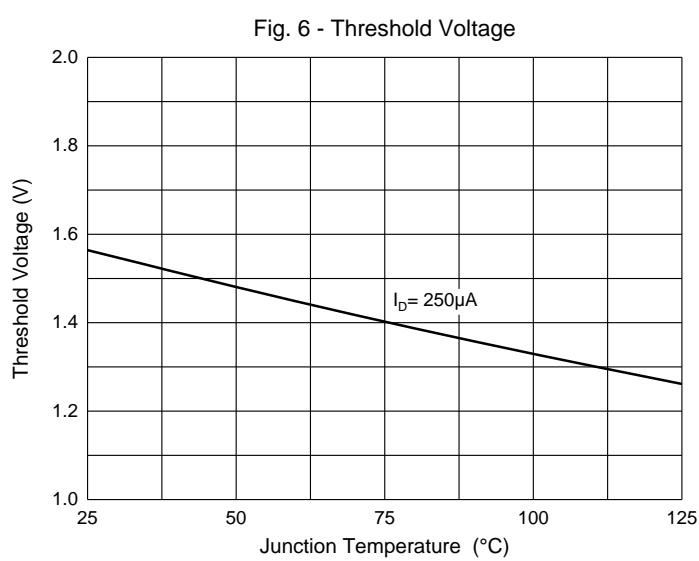
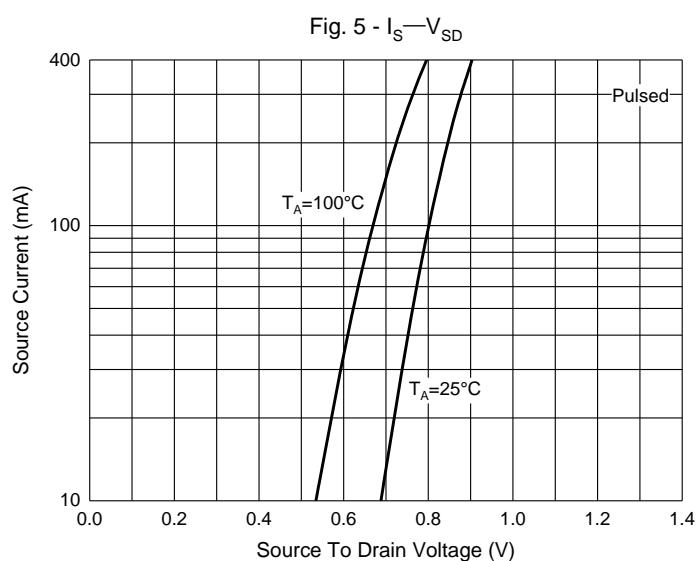
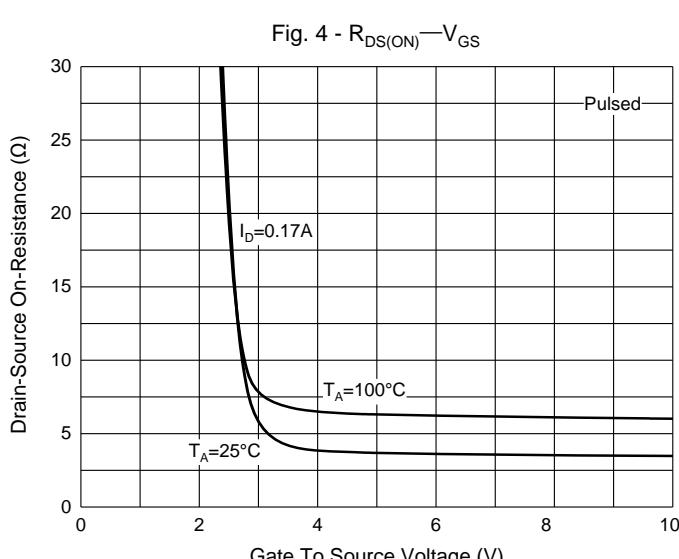
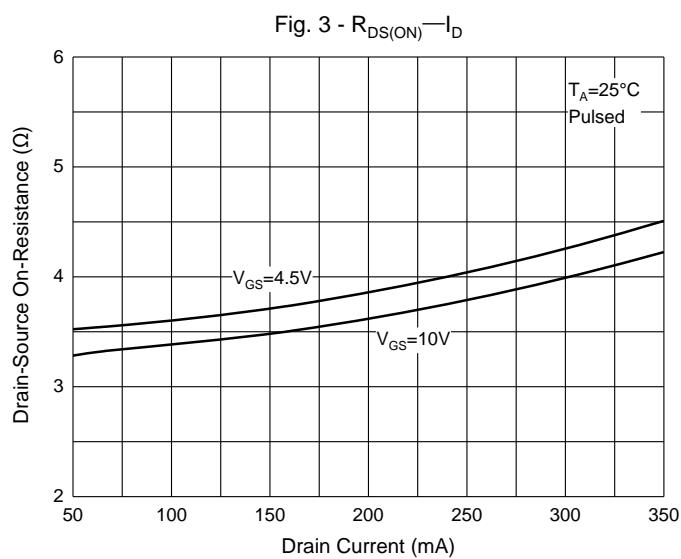
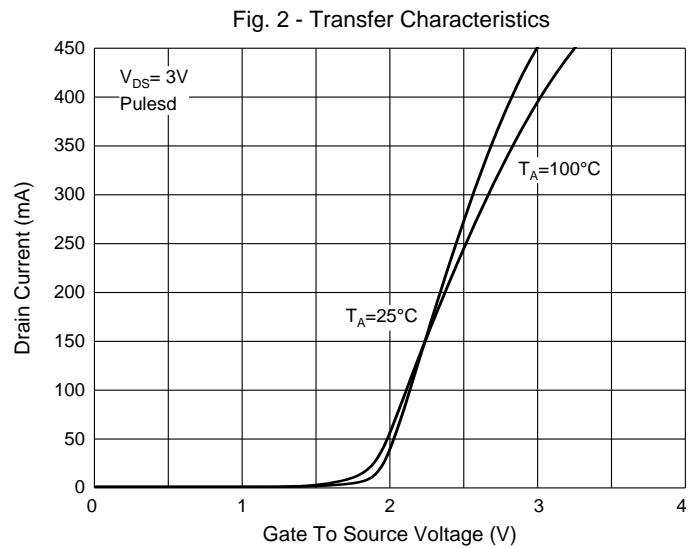
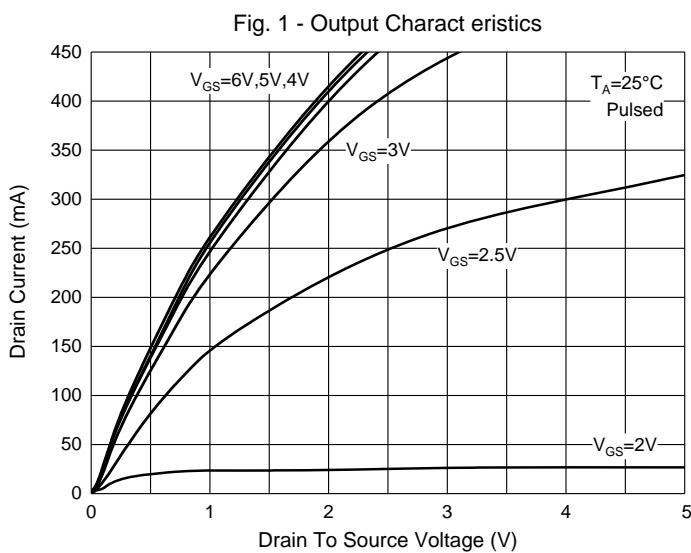
ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--|----------------------|--|-----|------|------|------|
| Static Characteristics | | | | | | |
| Drain-Source Breakdown Voltage | V _{(BR)DSS} | V _{GS} =0V, I _D =250μA | 100 | | | V |
| Gate-Threshold Voltage ^(Note2) | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250μA | 1.0 | | 2.8 | V |
| Gate-Body Leakage Current | I _{GSS} | V _{GS} =± 20V, V _{DS} =0V | | | ±50 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =100V, V _{GS} =0V | | | 1 | μA |
| | | V _{DS} =20V, V _{GS} =0V | | | 10 | nA |
| Drain-Source On-Resistance ^(Note2) | R _{DS(on)} | V _{GS} =10V, I _D =0.17A | | | 6 | Ω |
| | | V _{GS} =4.5V, I _D =0.17A | | | 10 | |
| Forward Transconductance ^(Note2) | g _{FS} | V _{DS} =10V, I _D =0.17A | 80 | | | mS |
| Diode Forward Voltage ^(Note2) | V _{SD} | V _{GS} =0V, I _S =0.34A | | | 1.3 | V |
| Dynamic Characteristics^(Note4) | | | | | | |
| Input Capacitance | C _{iss} | V _{DS} =25V, V _{GS} =0V, f=1MHz | | 29 | 60 | pF |
| Output Capacitance | C _{oss} | | | 10 | 15 | |
| Reverse Transfer Capacitance | C _{rss} | | | 2 | 6 | |
| Switching Characteristics | | | | | | |
| Total Gate Charge | Q _g | V _{DS} =10V, V _{GS} =10V, I _D =0.22A | | 1.4 | 2 | nC |
| Gate-Source Charge | Q _{gs} | | | 0.15 | 0.25 | |
| Gate-Drain Charge | Q _{gd} | | | 0.2 | 0.4 | |
| Turn-On Delay Time ^(Note3,4) | t _{d(on)} | V _{DD} =30V, V _{GS} =10V, R _G =50Ω, I _D =0.28A | | | 8 | ns |
| Turn-On Rise Time ^(Note3,4) | t _r | | | | 8 | |
| Turn-Off Delay Time ^(Note3,4) | t _{d(off)} | | | | 13 | |
| Turn-Off Fall Time ^(Note3,4) | t _f | | | | 16 | |

Note:

2. Pulse Test : Pulse Width=300μs, Duty Cycle≤2%.
3. Switching Characteristics are Independent of Operating Junction Temperature.
4. Graranted by Design, Not Subject to Producting.

Curve Characteristics



Ordering Information

| Device | Packing |
|----------------|----------------------|
| Part Number-TP | Tape&Reel:3Kpcs/Reel |

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