



Features

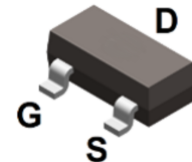
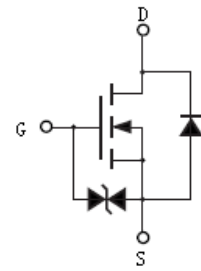
- Advanced trench cell design
- HBM: JESD22-A114-B: 1C
- RoHS compliant with Halogen-free

APPLICATIONS

- Load switch appliances

Mechanical Data

- Case: SOT-23
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-23

Ordering Information

| Part Number | Package | Shipping Quantity | Marking Code |
|-------------|---------|------------------------|--------------|
| LGE3428 | SOT-23 | 3000 pcs / Tape & Reel | 3428 |

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|------------------|------------|------|
| Drain-to-Source Voltage | V _{DSS} | 30 | V |
| Gate-to-Source Voltage | V _{GSS} | ±10 | V |
| Continuous Drain Current *1 | I _D | 0.4 | A |
| Continuous Drain Current (T _A = 70°C) *1 | | 0.32 | A |
| Pulsed Drain Current (t _p = 10μs) | I _{DM} | 2.0 | A |
| Power Dissipation*1 | P _D | 0.42 | W |
| Operating Junction Temperature Range | T _J | -55 ~ +150 | °C |
| Storage Temperature Range | T _{STG} | -55 ~ +150 | °C |

Thermal Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---------------------------------------|------------------|------|------|------|------|
| Thermal Resistance Junction-to-Air *1 | R _{θJA} | - | - | 300 | °C/W |



| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Unit |
|---|--|--|------|------|------|------|
| Static Characteristics | | | | | | |
| V _{DSS} | Drain-Source Breakdown Voltage | V _{GS} = 0V, I _D = 250μA | 30 | - | - | V |
| I _{DSS} | Zero Gate Voltage Drain Current | V _{DS} = 24V, V _{GS} = 0V | - | - | 1 | μA |
| I _{GSS} | Gate-Body Leakage Current | V _{GS} = ±8V, V _{DS} = 0V | - | - | ±10 | μA |
| On Characteristics | | | | | | |
| R _{DS(ON)} | Drain-Source On-resistance ^{*2} | V _{GS} = 4.5V, I _D = 0.3A | - | 0.6 | 1.2 | Ω |
| | | V _{GS} = 2.5V, I _D = 0.2A | - | 0.8 | 1.6 | |
| | | V _{GS} = 1.8V, I _D = 0.1A | - | 0.9 | 2 | |
| | | V _{GS} = 1.5V, I _D = 0.05A | - | 1.1 | 3 | |
| | | V _{GS} = 1.2V, I _D = 0.02A | - | 1.6 | 4 | |
| V _{GS(th)} | Gate Threshold Voltage | V _{DS} = V _{GS} , I _D = 250μA | 0.4 | 0.7 | 1.0 | V |
| R _G | Gate Resistance | V _{GS} = 0V, f = 1MHz | - | 90 | - | Ω |
| Dynamic Characteristics | | | | | | |
| C _{ISS} | Input Capacitance | V _{GS} = 0V V _{DS} = 10V f = 1.0MHz | - | 38 | - | pF |
| C _{OSS} | Output Capacitance | | | | | |
| C _{RSS} | Reverse Transfer Capacitance | | | | | |
| Switching Characteristics | | | | | | |
| t _{d(ON)} | Turn-on Delay Time ^{*4} | V _{DD} = 10V V _{GS} = 4V R _G = 10Ω I _D = 0.3A | - | 8.3 | - | ns |
| t _r | Turn-on Rise Time ^{*4} | | | | | |
| t _{d(OFF)} | Turn-Off Delay Time ^{*4} | | | | | |
| t _f | Turn-Off Fall Time ^{*4} | | | | | |
| Q _G | Total Gate-Charge | V _{DD} = 15V V _{GS} = 4.5V I _D = 0.3A | - | 2.1 | - | nC |
| Q _{GS} | Gate to Source Charge | | | | | |
| Q _{GD} | Gate to Drain (Miller) Charge | | | | | |
| Source-Drain Diode Characteristics | | | | | | |
| V _{SD} | Diode Forward Voltage ^{*2} | I _{SD} = 0.3A, V _{GS} = 0V | - | 0.85 | 1.3 | V |

Notes:

- The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper
- The data tested by pulsed, pulse width ≤ 300μs, duty cycle ≤ 2%
- The E_{AS} data shows Max. rating. The test condition is V_{DD} = 15V, V_{GS} = 8V, L = 0.1mH
- Guaranteed by design, not subject to production



Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

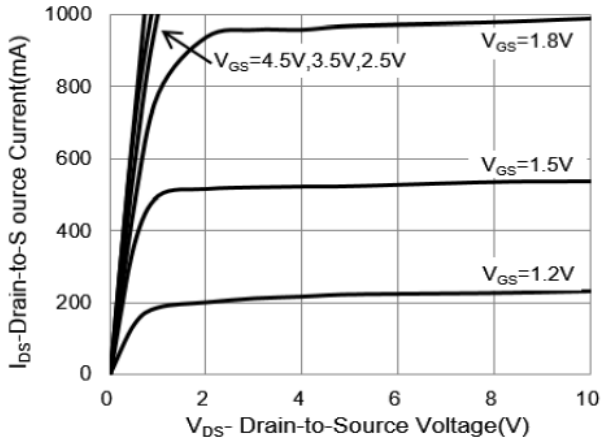


Fig 1 On-Region Characteristics

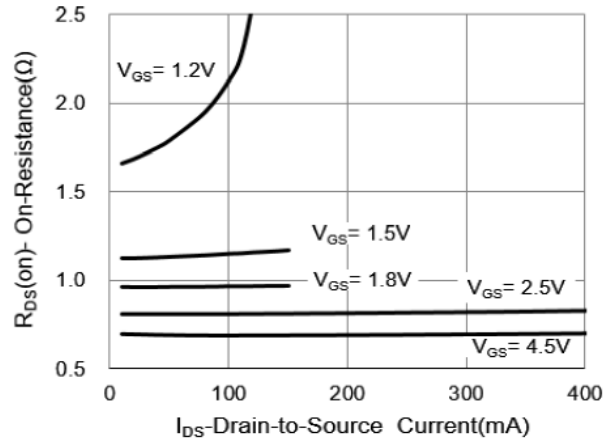


Fig 2 On-Resistance vs. Drain Current and Gate Voltage

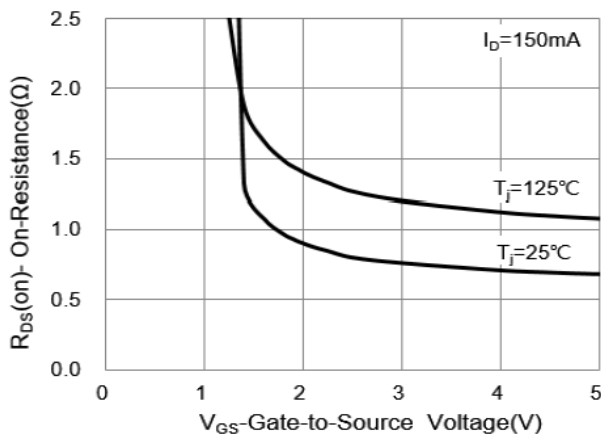


Fig 3 On-Resistance vs. Gate-Source Voltage

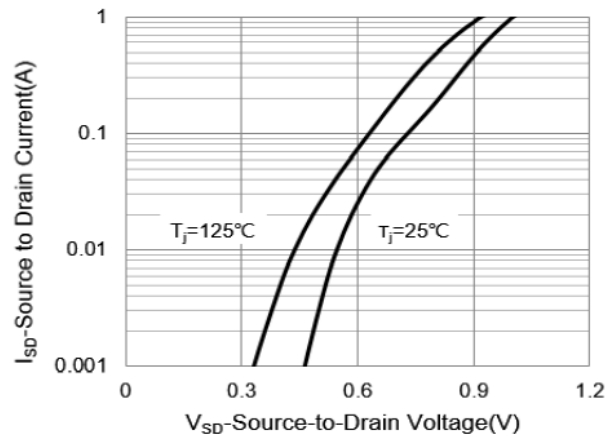


Fig 4 Body-Diode Characteristics

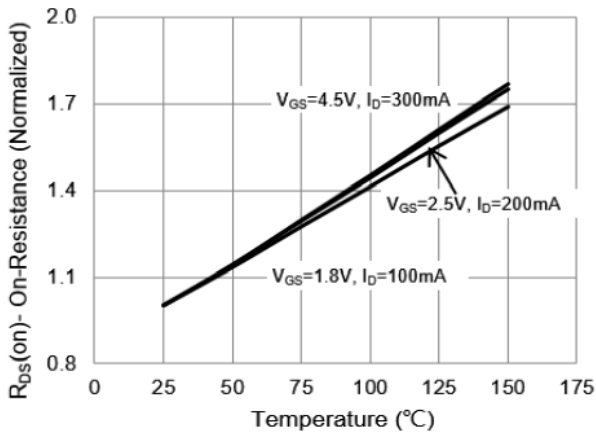


Fig 5 On-Resistance vs. Junction Temperature

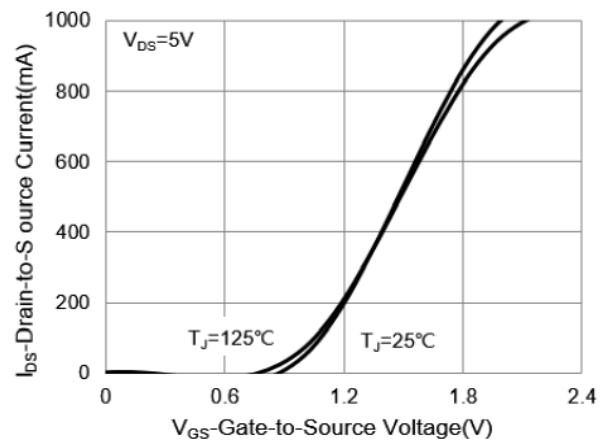


Fig 6 Transfer Characteristics

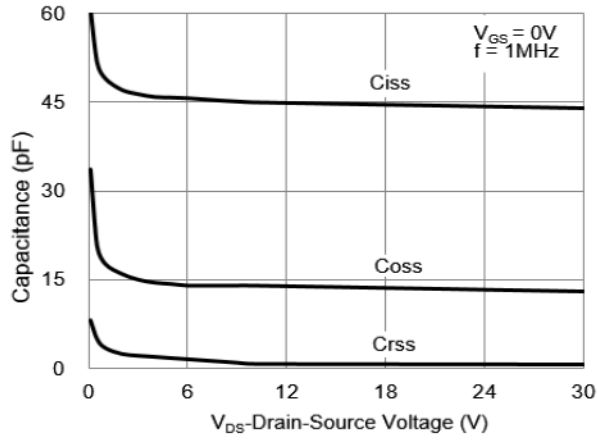


Fig 7 Capacitance Characteristics

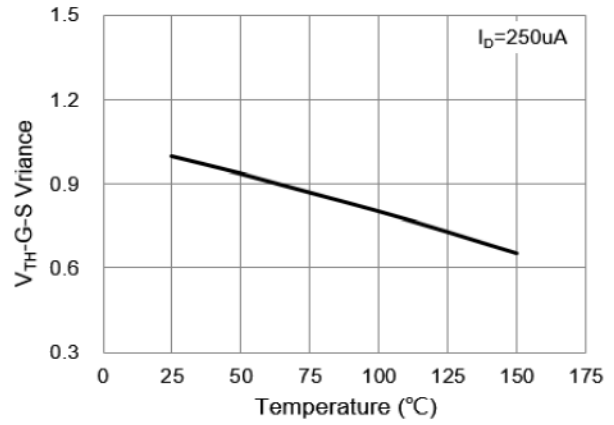
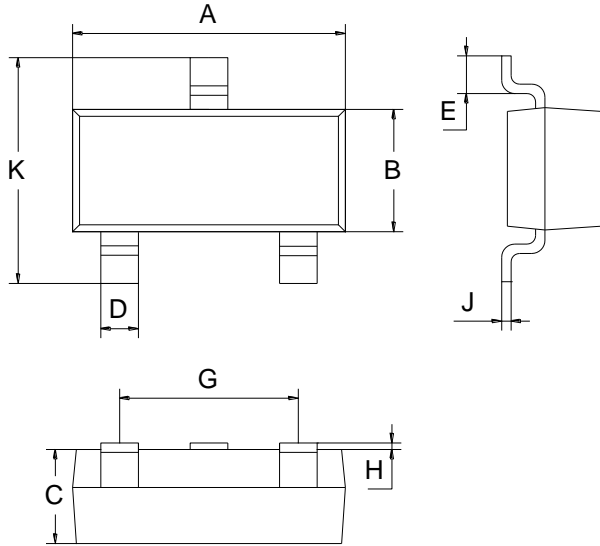


Fig 8 Gate Voltage vs. Junction Temperature



Package Outline Dimensions (Unit: mm)



| SOT-23 | | |
|-----------|------|------|
| Dimension | Min. | Max. |
| A | 2.70 | 3.10 |
| B | 1.10 | 1.50 |
| C | 0.90 | 1.10 |
| D | 0.30 | 0.50 |
| E | 0.35 | 0.48 |
| G | 1.80 | 2.00 |
| H | 0.02 | 0.10 |
| J | 0.05 | 0.15 |
| K | 2.20 | 2.60 |

Mounting Pad Layout (Unit: mm)

SOT-23

