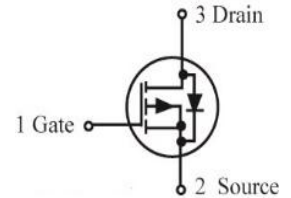
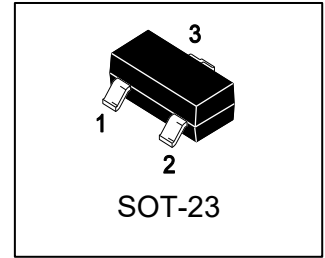


P2371

S-P2371

P-Channel 100-V (D-S) MOSFET



1. FEATURES

- $R_{DS(ON)} \leq 1.4\Omega$, $V_{GS@-10V}$
- $R_{DS(ON)} \leq 1.5\Omega$, $V_{GS@-4.5V}$
- Fast switching speed
- Low $R_{DS(on)}$ trench technology
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

2. APPLICATIONS

- PoE Power Sourcing Equipment
- PoE Powered Devices
- Telecom DC/DC converters
- White LED boost converters

3. DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|--------|---------|----------------|
| P2371 | E9 | 3000/Tape&Reel |

4. MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

| Parameter | Symbol | Limits | Unit |
|--|---------------|------------------------|------------------|
| Drain-Source Voltage | VDSS | -100 | V |
| Gate-to-Source Voltage – Continuous | VGS | ± 20 | V |
| Continuous Drain Current(Note 1) | ID | $T_a=25^\circ\text{C}$ | A |
| | | $T_a=70^\circ\text{C}$ | |
| Pulsed Drain Current(Note 2) | IDM | -2.6 | |
| Power Dissipation(Note 1) | PD | $T_a=25^\circ\text{C}$ | W |
| | | $T_a=70^\circ\text{C}$ | |
| Junction Temperature | Tj | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | Tstg | -55~+150 | $^\circ\text{C}$ |
| Thermal Resistance-Junction to Ambient(Note 1) | R θ JA | t \leq 10s | 100 |
| | | Steady State | 166 |

1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.

2.Pulse width limited by maximum junction temperature.



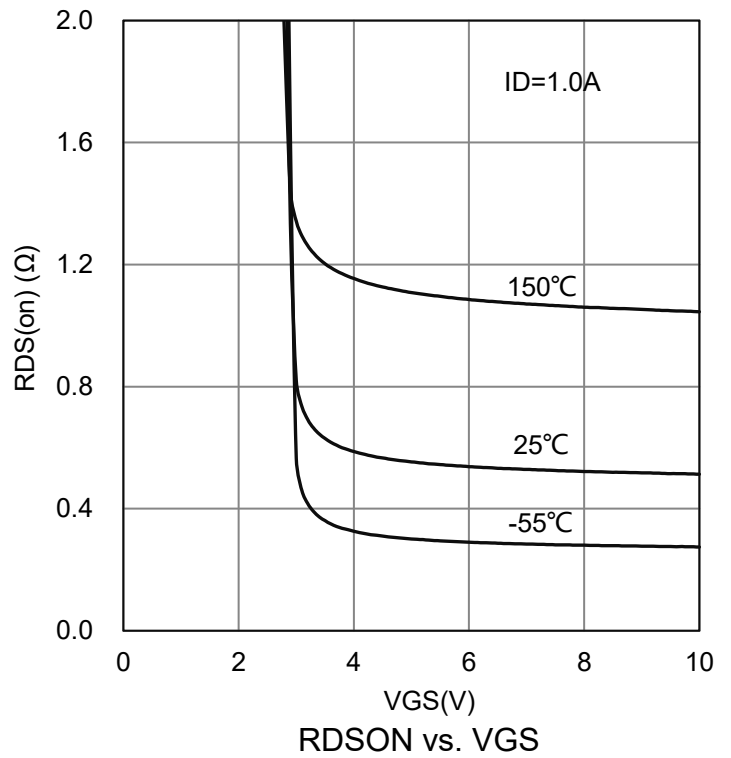
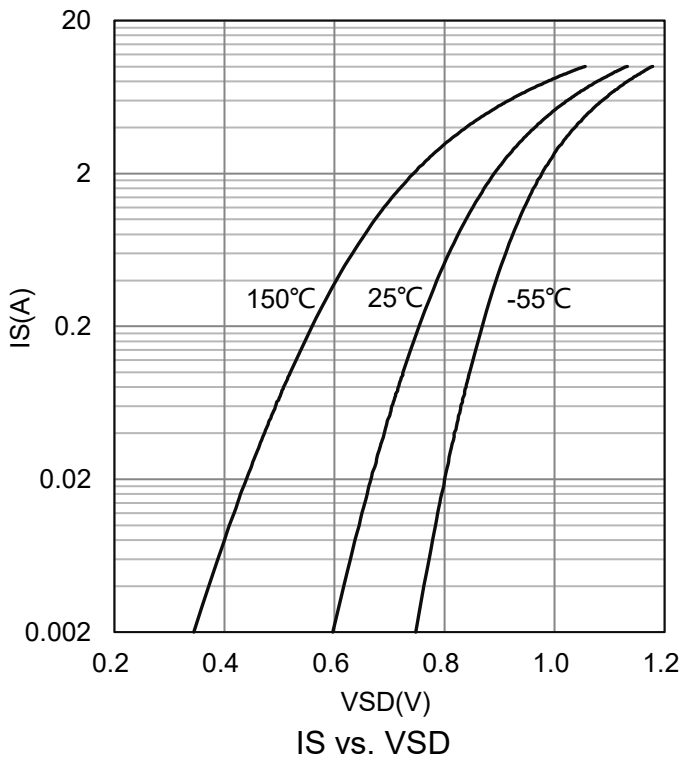
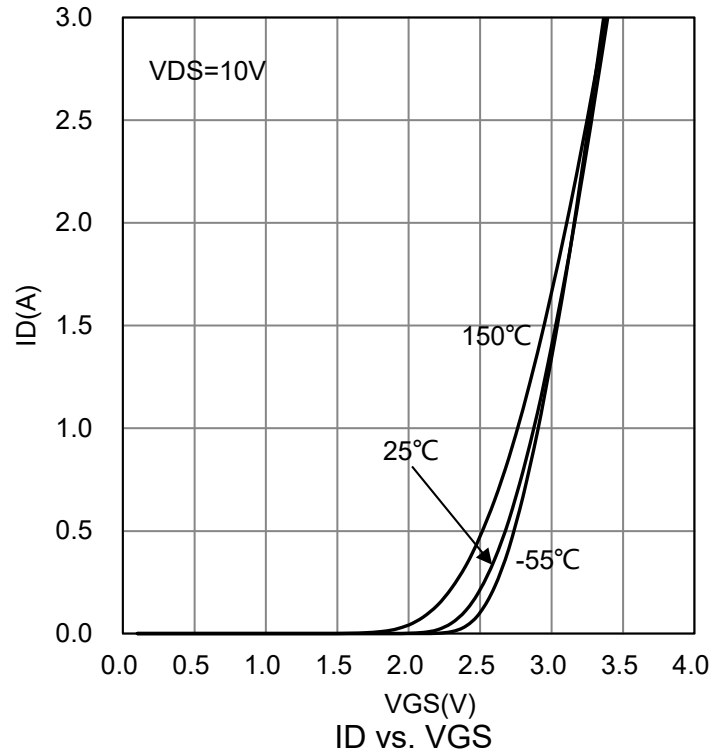
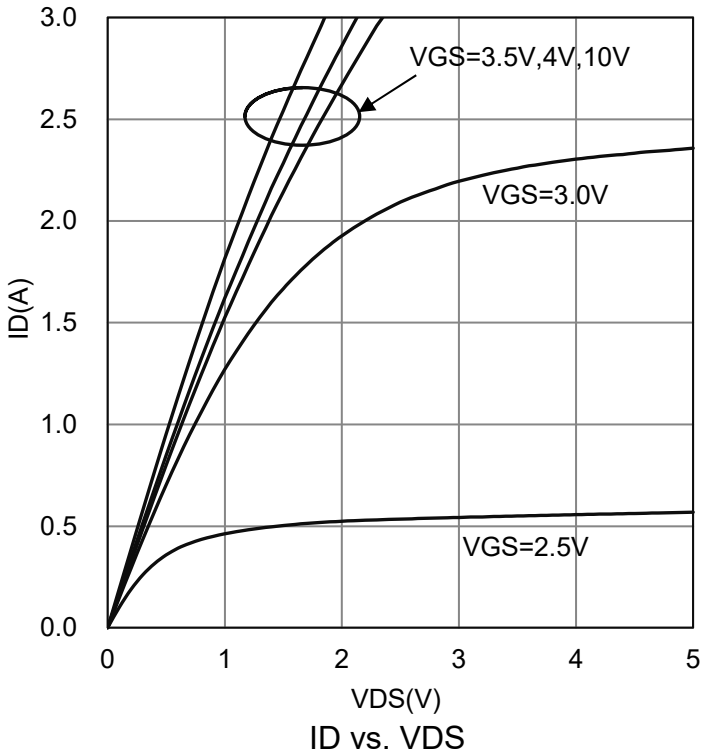
5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|--|--|---------|-------|------------|------|
| STATIC | | | | | |
| Drain–Source Breakdown Voltage (VGS = 0, ID = -250μA) | VBRDSS | -100 | - | - | V |
| Gate Threshold Voltage (VDS = VGS, ID = -250μA) | VGS(th) | -1 | - | -3.5 | V |
| Gate Leakage Current (VDS = 0V, VGS = ±20V) | IGSS | - | - | ±100 | nA |
| Zero Gate Voltage Drain Current (VGS = 0V, VDS = -80 V) (VGS = 0V, VDS = -80 V, TJ = 55°C) | IDSS | - | - | -1 -25 | μA |
| Static Drain–Source On–State Resistance(Note 3) (VGS = -10 V, ID = -1 A) (VGS = -4.5 V, ID = -0.9 A) | RDS(on) | - | - | 1.4 1.5 | Ω |
| Diode Forward Voltage (VGS = 0 V, IS = -0.8 A) | VSD | - | -0.81 | -1.3 | V |
| DYNAMIC | | | | | |
| Total Gate Charge (VGS = -4.5 V, ID = -1A, VDS = -50 V) | Qg | - | 4 | - | nC |
| Gate-Source Charge (VGS = -4.5 V, ID = -1A, VDS = -50 V) | Qgs | - | 1.6 | - | |
| Gate-Drain Charge (VGS = -4.5 V, ID = -1A, VDS = -50 V) | Qgd | - | 1.2 | - | |
| Input Capacitance (VGS = 0 V, f = 1.0MHz, VDS = -15 V) | Ciss | - | 472 | - | pF |
| Output Capacitance (VGS = 0 V, f = 1.0MHz, VDS = -15 V) | Coss | - | 18.6 | - | |
| Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz, VDS = -15 V) | Crss | - | 14.4 | - | |
| Turn-On Delay Time | (VDD = -50V, RL = 50Ω ID = -1A, VGEN = -10V RG = 6.2Ω) | td(on) | - | 3.6 | ns |
| Rise Time | | tr | - | 1.1 | |
| Turn-Off Delay Time | | td(off) | - | 19.9 | |
| Fall Time | | tf | - | 1.9 | |

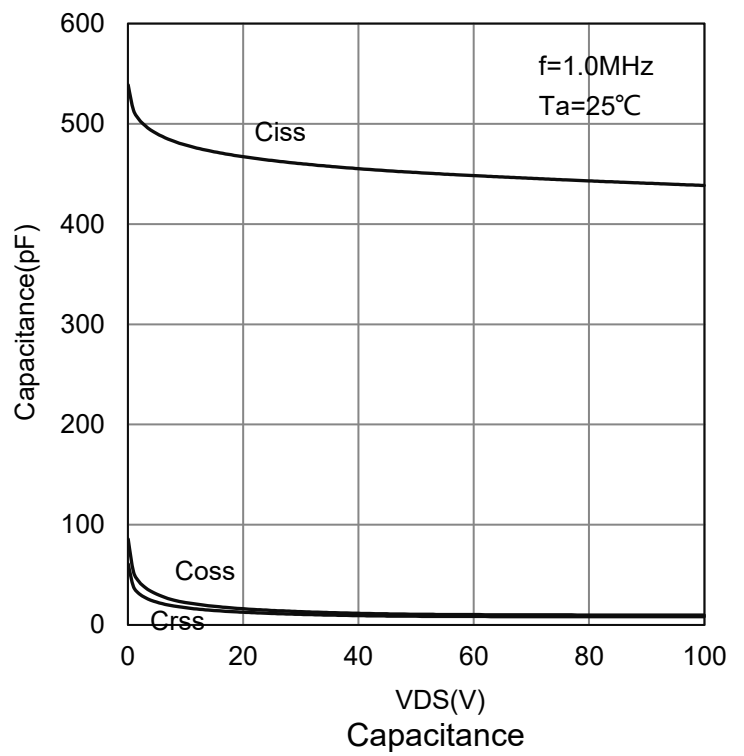
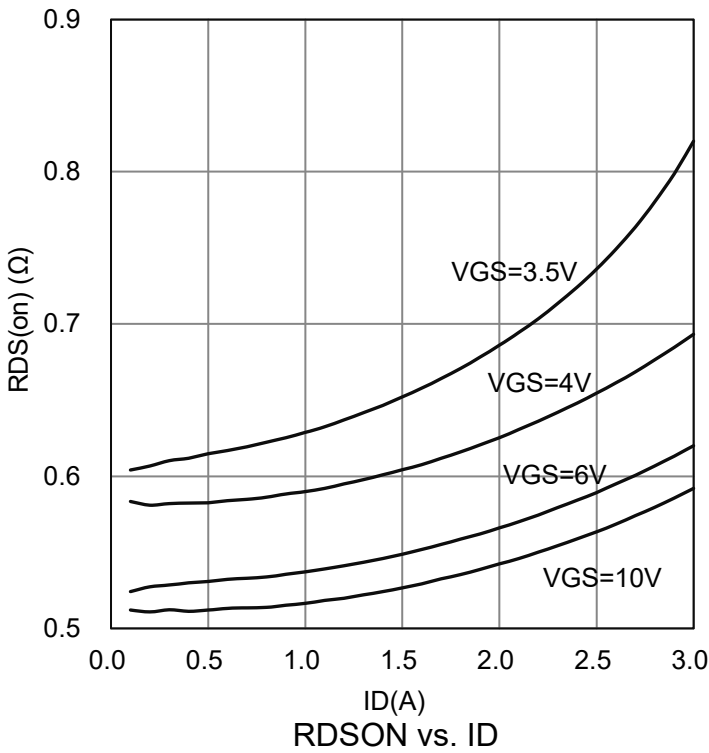
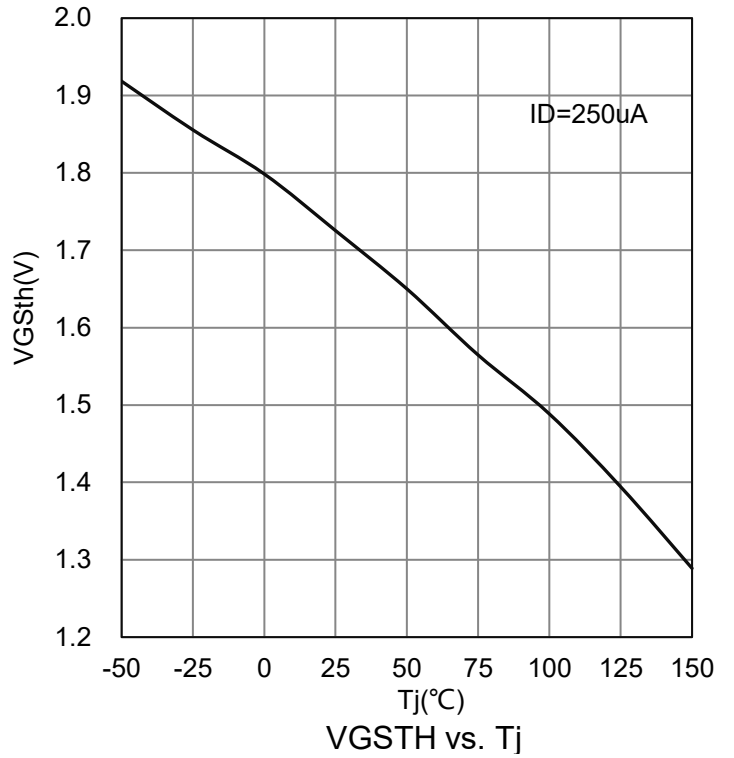
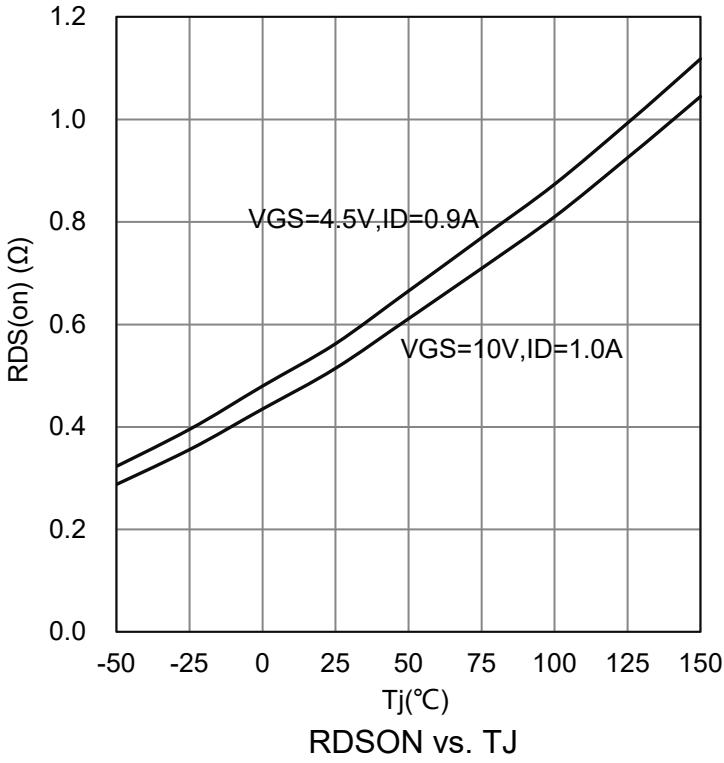
3. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.



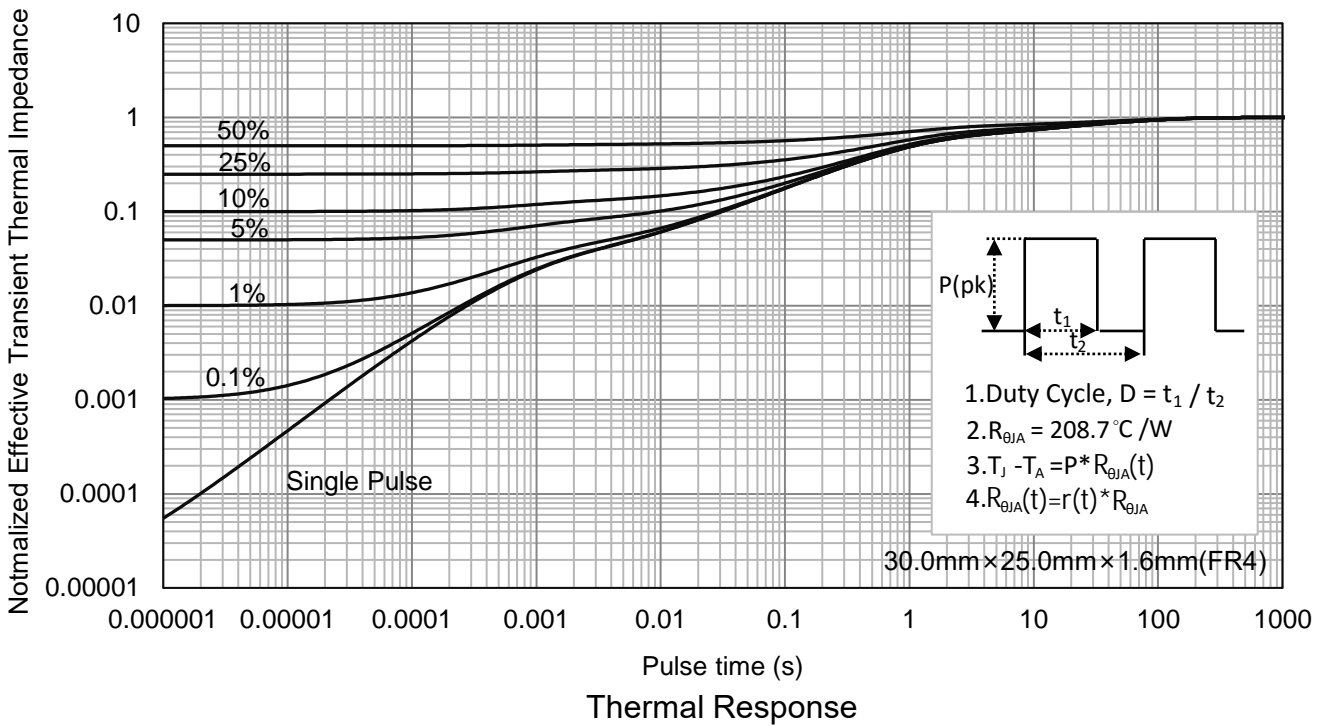
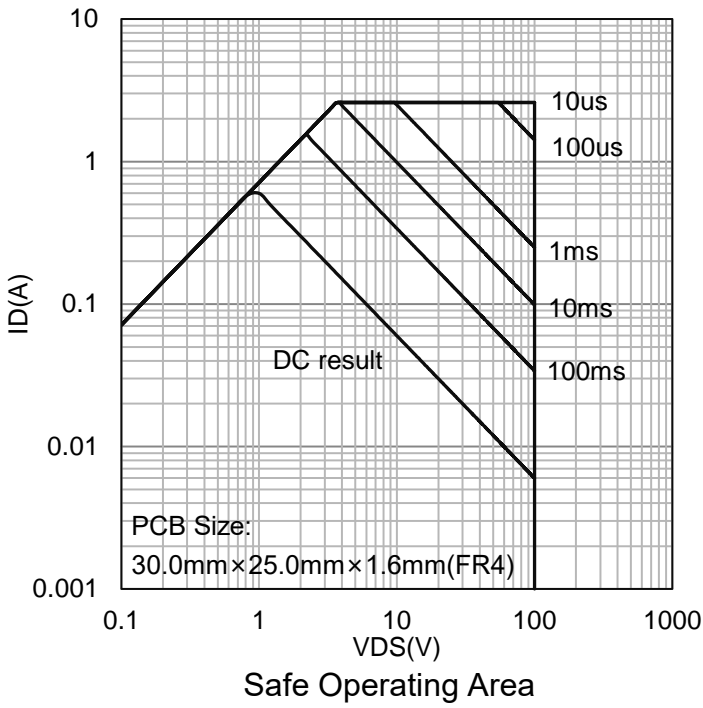
6.ELECTRICAL CHARACTERISTICS CURVES



6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



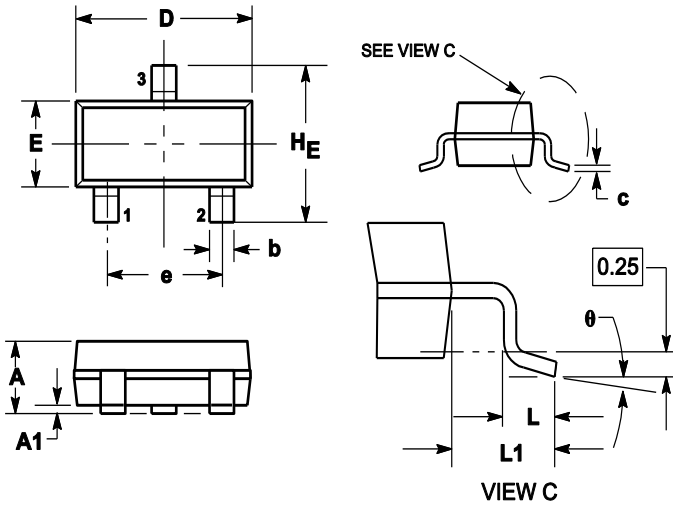
6. ELECTRICAL CHARACTERISTICS CURVES(Con.)



7. OUTLINE AND DIMENSIONS

Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.89 | 1 | 1.11 | 0.035 | 0.04 | 0.044 |
| A1 | 0.01 | 0.06 | 0.1 | 0.001 | 0.002 | 0.004 |
| b | 0.37 | 0.44 | 0.5 | 0.015 | 0.018 | 0.02 |
| c | 0.09 | 0.13 | 0.18 | 0.003 | 0.005 | 0.007 |
| D | 2.80 | 2.9 | 3.04 | 0.11 | 0.114 | 0.12 |
| E | 1.20 | 1.3 | 1.4 | 0.047 | 0.051 | 0.055 |
| e | 1.78 | 1.9 | 2.04 | 0.07 | 0.075 | 0.081 |
| L | 0.10 | 0.2 | 0.3 | 0.004 | 0.008 | 0.012 |
| L1 | 0.35 | 0.54 | 0.69 | 0.014 | 0.021 | 0.029 |
| HE | 2.10 | 2.4 | 2.64 | 0.083 | 0.094 | 0.104 |
| θ | 0° | --- | 10° | 0° | --- | 10° |

8. SOLDERING FOOTPRINT
