

## 100V N-Channel Enhancement-Mode MOSFET

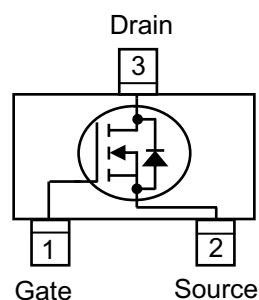
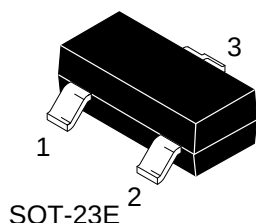
### FEATURES:

- $V_{DS} = 100V$
- $R_{DS(ON)} \leq 200\text{ m}\Omega @ V_{GS} = 10V, I_D = 3A$
- $R_{DS(ON)} \leq 260\text{ m}\Omega @ V_{GS} = 4.5V, I_D = 1A$
- Super high density cell design for extremely low  $R_{DS(ON)}$ .
- Exceptional on-resistance and maximum DC current capability.
- We declare that the material of product compliance with
- RoHS requirements and Halogen Free.

### APPLICATIONS:

- Power Management in Note book
- DC/DC Converter
- Load Switch

### Circuit Diagram & Pin Configuration:



### DEVICE MARKING AND ORDERING INFORMATION

| Device      | Marking | Shipping       |
|-------------|---------|----------------|
| SN2292-S03T | N2L     | 3000/Tape&Reel |

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

| Parameter                             | Symbol   | Limits   | Unit |
|---------------------------------------|----------|----------|------|
| Drain-Source Voltage                  | $V_{DS}$ | 100      | V    |
| Gate-to-Source Voltage – Continuous   | $V_{GS}$ | $\pm 20$ | V    |
| Drain Current                         |          |          | A    |
| – Continuous $T_A = 25^\circ\text{C}$ | $I_D$    | 3        |      |
| – Pulsed                              | $I_{DM}$ | 10       |      |

### THERMAL CHARACTERISTICS

| Parameter                                  | Symbol          | Limits          | Unit               |
|--------------------------------------------|-----------------|-----------------|--------------------|
| Maximum Power Dissipation                  | PD              | 1.25            | W                  |
| Thermal Resistance,<br>Junction-to-Ambient | $R_{\theta JA}$ | 100             | $^\circ\text{C/W}$ |
| Junction and Storage temperature           | $T_J, T_{stg}$  | $-55 \sim +150$ | $^\circ\text{C}$   |

**ELECTRICAL CHARACTERISTICS (Ta= 25°C)**
**STATIC**

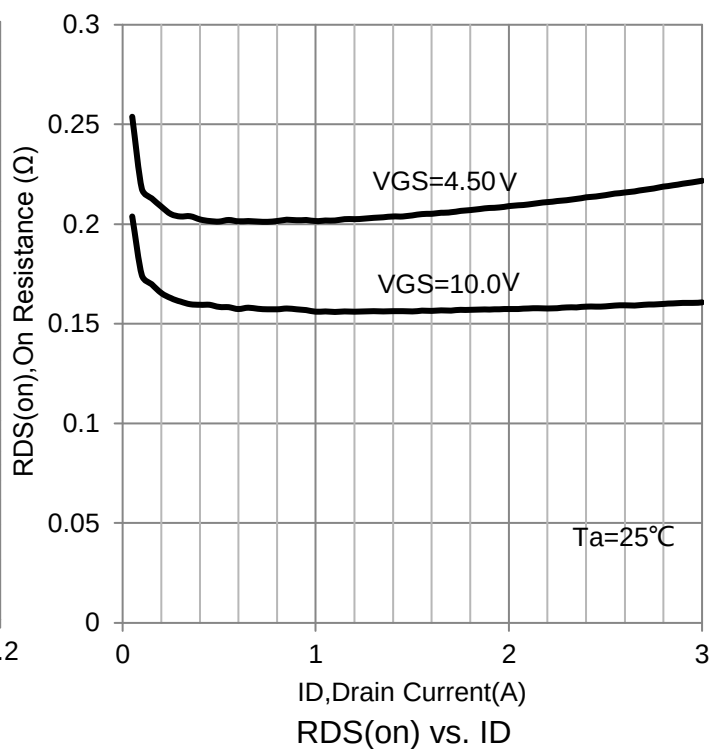
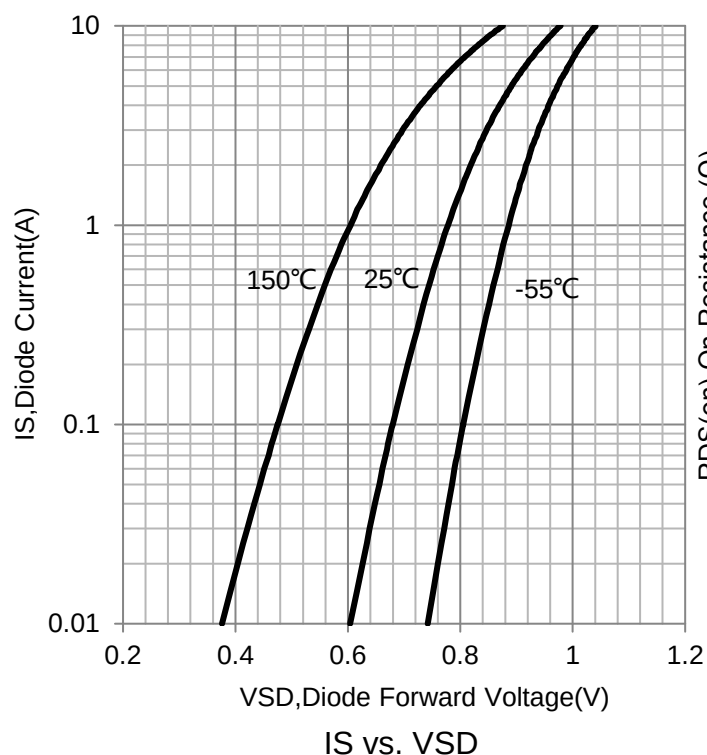
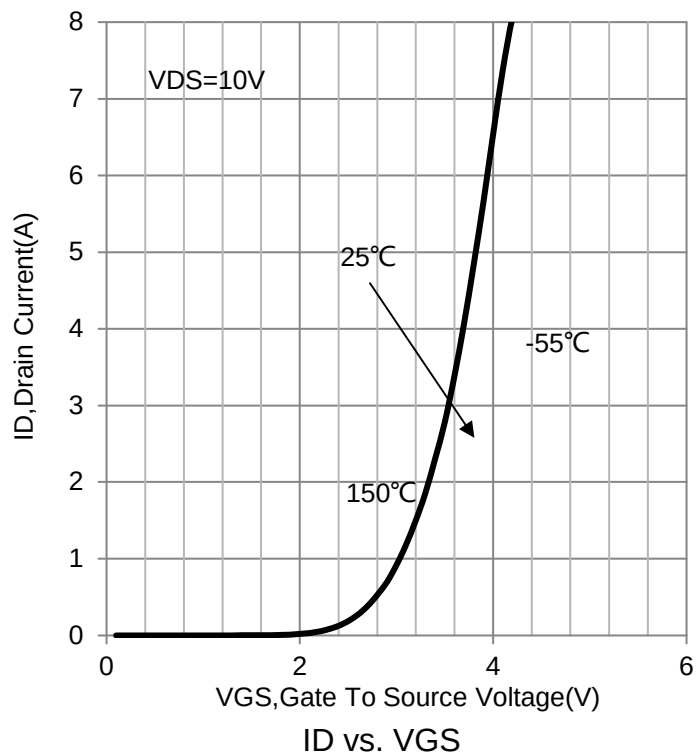
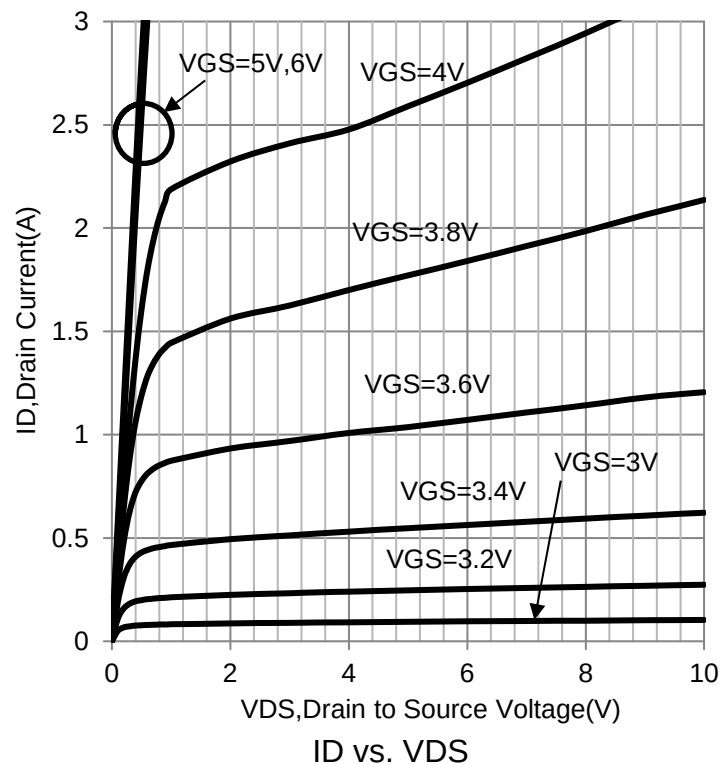
| Characteristic                                                                               | Symbol   | Min.   | Typ.       | Max.       | Unit |
|----------------------------------------------------------------------------------------------|----------|--------|------------|------------|------|
| Drain–Source Breakdown Voltage<br>(VGS = 0V, ID = 250μA)                                     | V(BR)DSS | 100    | -          | -          | V    |
| Gate Threshold Voltage<br>(VDS = VGS, ID = 250μA)                                            | VGS(th)  | 1.0    | -          | 3.0        | V    |
| Gate–Body Leakage<br>(VDS = 0 V, VGS =±20 V)                                                 | IGSS     | -      | -          | ±100       | nA   |
| Zero Gate Voltage Drain Current<br>(VDS=100 V, VGS=0 V)                                      | IDSS     | -      | -          | 1          | μA   |
| Static Drain–Source On–State Resistance<br>(VGS = 10 V, ID = 3 A)<br>(VGS = 4.5 V, ID = 1 A) | RDS(on)  | -<br>- | 160<br>200 | 200<br>260 | mΩ   |
| Forward Voltage<br>(VGS = 0 V, IS = 6.5 A)                                                   | VSD      | -      | 0.9        | 1.3        | V    |

**DYNAMIC**

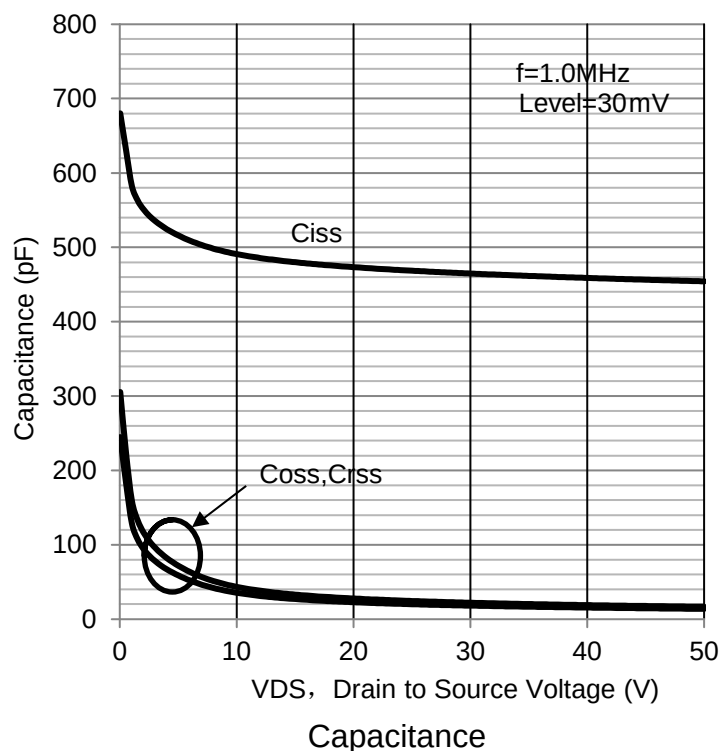
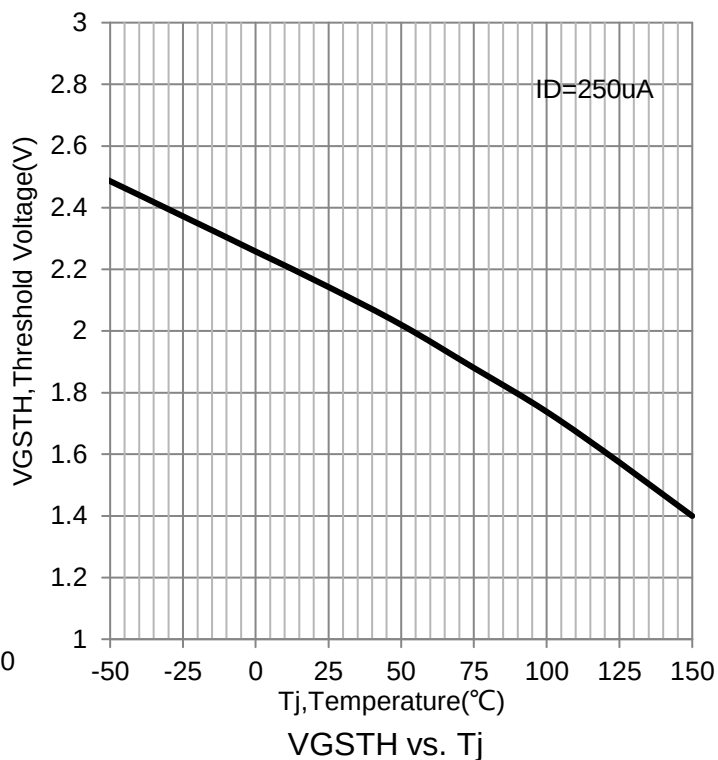
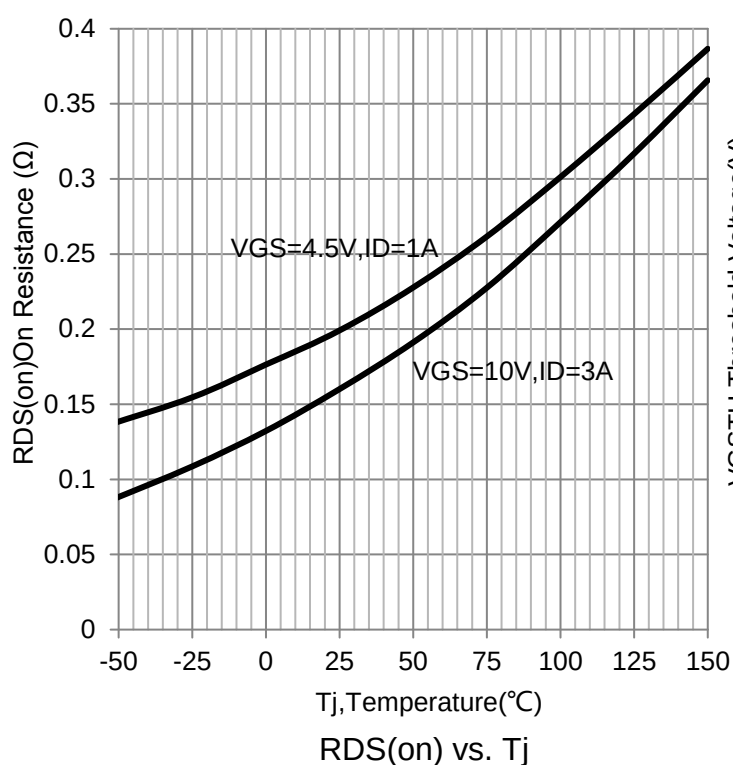
|                              |                                          |         |   |     |   |    |
|------------------------------|------------------------------------------|---------|---|-----|---|----|
| Total Gate Charge            | (VDS =50V, VGS =5V, ID =6.5A)            | Qg      | - | 8.2 | - | nC |
| Gate–Source Charge           |                                          | Qgs     | - | 4.3 | - |    |
| Gate–Drain Charge            |                                          | Qgd     | - | 5.3 | - |    |
| Input Capacitance            | (VDS =25V, VGS =0V, f=1MHz)              | Ciss    | - | 396 | - | pF |
| Output Capacitance           |                                          | Coss    | - | 47  | - |    |
| Reverse Transfer Capacitance |                                          | Crss    | - | 30  | - |    |
| Turn–On Delay Time           | (VDD =50V, RL =50Ω, VGEN =10V, RG =2.5Ω) | td(on)  | - | 9.6 | - | ns |
| Rise Time                    |                                          | tr      | - | 4.2 | - |    |
| Turn–Off Delay Time          |                                          | td(off) | - | 25  | - |    |
| Fall Time                    |                                          | tf      | - | 3.2 | - |    |

Note 1:Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

### ELECTRICAL CHARACTERISTICS CURVES

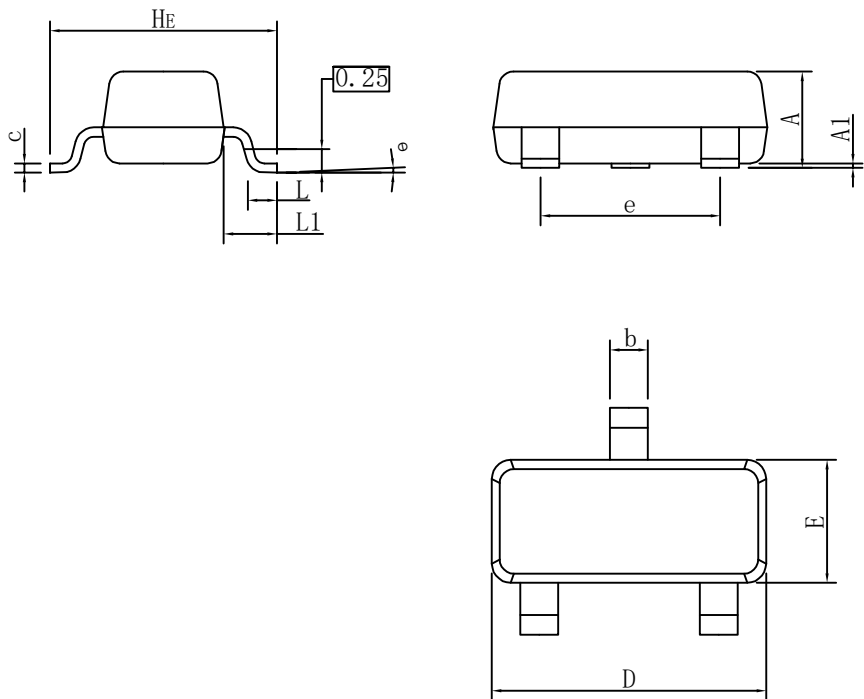


## ELECTRICAL CHARACTERISTICS CURVES(Con.)



OUTLINE AND DIMENSIONS

SOT23E

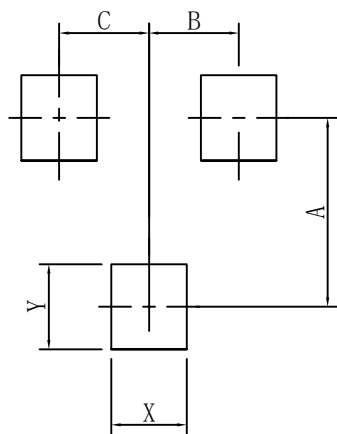


| SOT23E               |         |      |      |
|----------------------|---------|------|------|
| DIM                  | MIN     | NOR  | MAX  |
| A                    | 0.90    | 1.00 | 1.10 |
| A1                   | 0.01    | 0.06 | 0.10 |
| b                    | 0.30    | 0.40 | 0.50 |
| c                    | 0.10    | 0.17 | 0.20 |
| D                    | 2.80    | 2.90 | 3.00 |
| E                    | 1.20    | 1.30 | 1.40 |
| e                    | 1.80    | 1.90 | 2.00 |
| L                    | 0.20    | 0.40 | 0.60 |
| L1                   | 0.60REF |      |      |
| HE                   | 2.20    | 2.40 | 2.60 |
| θ                    | 0°      | -    | 10°  |
| All Dimensions in mm |         |      |      |

GENERAL NOTES

- Top package surface finish Ra0.4±0.2um
- Bottom package surface finish Ra0.7±0.2um
- Side package surface finish Ra0.4±0.2um

SOLDERING FOOTPRINT



| SOT23E |      |
|--------|------|
| DIM    | (mm) |
| X      | 0.80 |
| Y      | 0.90 |
| A      | 2.00 |
| B      | 0.95 |
| C      | 0.95 |

## NOTICE

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