

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=100V$
- $I_D=3.3A$
- $R_{DS(on)}@V_{GS}=10V < 100m\Omega$
- $R_{DS(on)}@V_{GS}=4.5V < 130m\Omega$
- Advanced Trench technology
- Lead free product is acquired

Drain-source Voltage  
100 V  
Drain Current  
3.3 Ampere

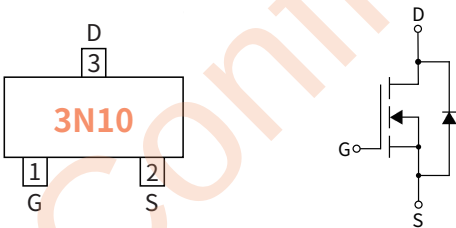
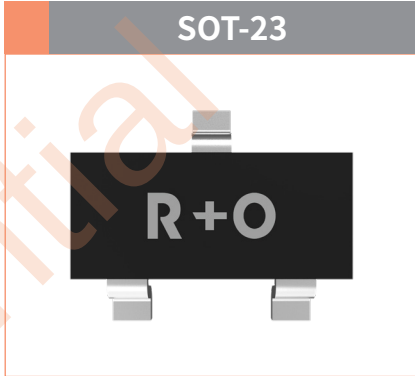
Applications

- Motor control
- Synchronous-rectification
- Power management

Mechanical Data

- Case: SOT-23  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram



Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOT-23  | R1           | 0.008          | 3000      | 30000    | 180000      | 7"            |

Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER                                             |                                  | SYMBOL          | UNIT            | VALUE     |
|-------------------------------------------------------|----------------------------------|-----------------|-----------------|-----------|
| Drain-source Voltage                                  |                                  | $V_{DS}$        | V               | 100       |
| Gate-source Voltage                                   |                                  | $V_{GS}$        | V               | $\pm 20$  |
| Drain Current                                         | $T_A=25^{\circ}C$ @ Steady State | $I_D$           | A               | 3.3       |
| Pulsed Drain Current                                  |                                  | $I_{DM}$        | A               | 12        |
| Total Power Dissipation @ $T_A=25^{\circ}C$           |                                  | $P_D$           | mW              | 1400      |
| Thermal Resistance Junction-to-Ambient @ Steady State |                                  | $R_{\theta JA}$ | $^{\circ}C / W$ | 89        |
| Junction and Storage Temperature Range                |                                  | $T_J, T_{STG}$  | $^{\circ}C$     | -55 ~+150 |

### ● Static Parameter Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER                         | SYMBOL       | Condition                     | UNIT       | Min | Typ  | Max       |
|-----------------------------------|--------------|-------------------------------|------------|-----|------|-----------|
| Drain-Source Breakdown Voltage    | $BV_{DSS}$   | $V_{GS}=0V, I_D=250\mu A$     | V          | 100 | —    | —         |
| Zero Gate Voltage Drain Current   | $I_{DSS}$    | $V_{DS}=100V, V_{GS}=0V$      | $\mu A$    | —   | —    | 1.0       |
| Gate-Body Leakage Current         | $I_{GSS}$    | $V_{GS}=\pm 20V, V_{DS}=0V$   | nA         | —   | —    | $\pm 100$ |
| Gate Threshold Voltage            | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu A$ | V          | 1.0 | 1.65 | 2.5       |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=10V, I_D=3A$          | m $\Omega$ | —   | 90   | 100       |
|                                   |              | $V_{GS}=4.5V, I_D=1A$         |            | —   | 120  | 130       |
| Diode Forward Voltage             | $V_{SD}$     | $I_S=3A, V_{GS}=0V$           | V          | —   | —    | 1.3       |

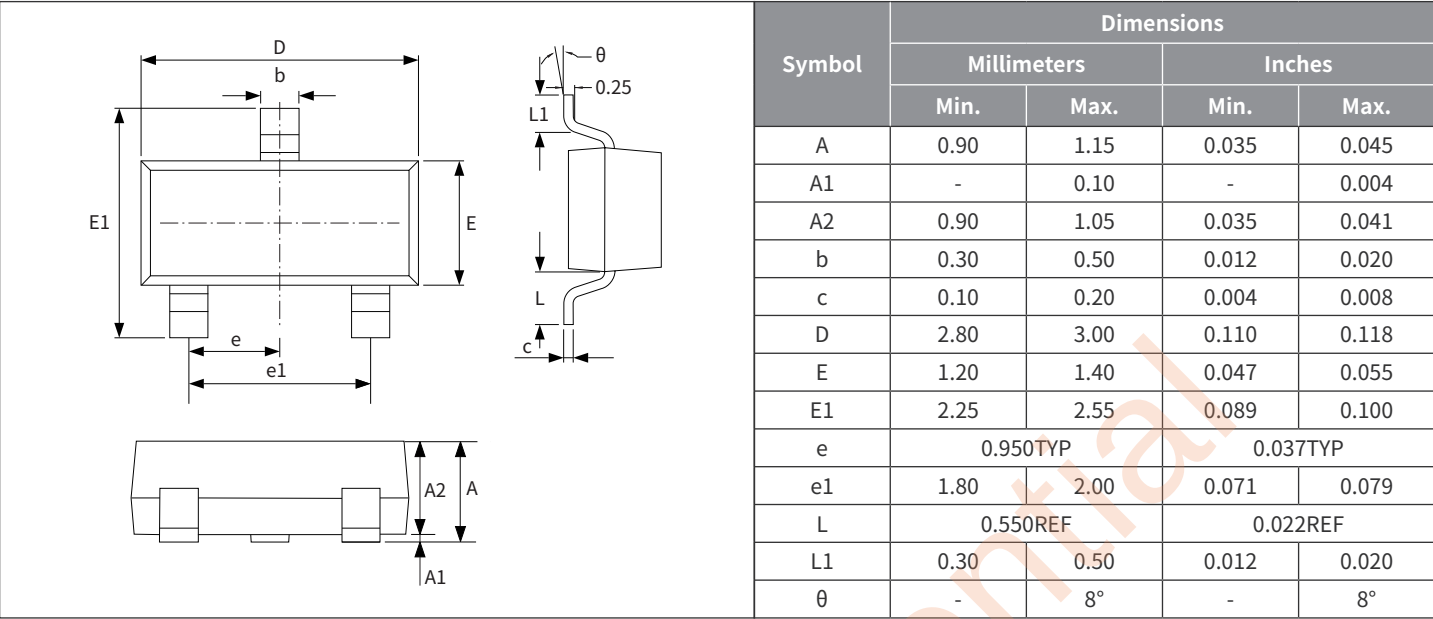
### ● Dynamic Parameters (Ta=25°C Unless otherwise specified)

| PARAMETER                    | SYMBOL    | Condition                               | UNIT | Min | Typ | Max |
|------------------------------|-----------|-----------------------------------------|------|-----|-----|-----|
| Input Capacitance            | $C_{iss}$ | $V_{DS}=50V$<br>$V_{GS}=0V$<br>$f=1MHz$ | pF   | —   | 210 | —   |
| Output Capacitance           | $C_{oss}$ |                                         |      | —   | 48  | —   |
| Reverse Transfer Capacitance | $C_{rss}$ |                                         |      | —   | 8   | —   |

### ● Switching Parameters (Ta=25°C Unless otherwise specified)

| PARAMETER           | SYMBOL       | Condition                                                   | UNIT | Min | Typ | Max |
|---------------------|--------------|-------------------------------------------------------------|------|-----|-----|-----|
| Total Gate Charge   | $Q_g$        | $V_{GS}=10V$<br>$V_{DS}=50V$<br>$I_D=3A$                    | nC   | —   | 4   | —   |
| Gate-Source Charge  | $Q_{gs}$     |                                                             |      | —   | 2   | —   |
| Gate-Drain Charge   | $Q_{gd}$     |                                                             |      | —   | 1   | —   |
| Turn-on Delay Time  | $t_{D(on)}$  | $V_{GS}=10V$<br>$V_{DS}=50V$<br>$R_G=1\Omega$<br>$I_D=1.5A$ | ns   | —   | 15  | —   |
| Turn-on Rise Time   | $t_r$        |                                                             |      | —   | 5   | —   |
| Turn-off Delay Time | $t_{D(off)}$ |                                                             |      | —   | 22  | —   |
| Turn-off fall Time  | $t_f$        |                                                             |      | —   | 3   | —   |

● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

