# *60V (D-S) Small Signal MOSFET*

## UM2362S *SOT23-3*

## UM2362P *SOT323*

### General Description

The UM2362 is a low threshold N-channel MOSFET, which has low on-resistance, high reliability and stability, as well as fast switch capability and high saturation current. This benefit provides the designer with an extremely efficient device for use in battery and load management applications. The devices use a space-saving, small-outline SOT23-3 or SOT323 package.

### Applications

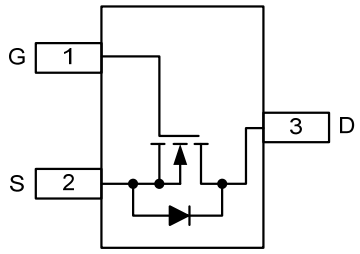
- Battery Packs
- Battery-Powered Portable Equipment
- Cellular and Cordless Telephones

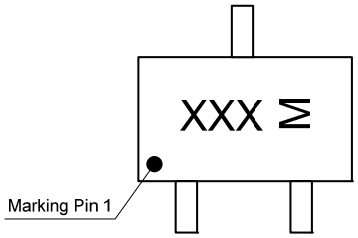
### Features

- Drain-Source Voltage (Max): 60V
- Low On-Resistance (Typ):
  1.2Ω@$V_{GS}$=10V
  1.7Ω@$V_{GS}$=5V
- Continuous Drain Current (Max):
  115mA@25°C

### Pin Configurations

### Top View




**M: Month Code**
**XXX：UM2362S, 10C**
**UM2362P, VLB**

### Ordering Information

| Part Number | Packaging Type | Marking Code | Shipping Qty |
|---|---|---|---|
| UM2362S | SOT23-3 | 10C | 3000pcs/7 Inch Tape & Reel |
| UM2362P | SOT323 | VLB | 3000pcs/7 Inch Tape & Reel |

## Absolute Maximum Ratings ($T_{amb}$=25ºC)

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{DSS}$ | Drain-Source Voltage | 60 | V |
| $V_{GS}$ | Gate-Source Voltage | ±20 | V |
| $I_D$ | Continuous Drain Current | 115 | mA |
| $P_D$ | Power Dissipation | 200 | mW |
| $T_J$ | Junction Temperature | +150 | °C |
| Tstg | Storage Temperature | -55 to +150 | °C |

## Electrical Characteristics ($T_{amb}$=25ºC, unless otherwise noted)

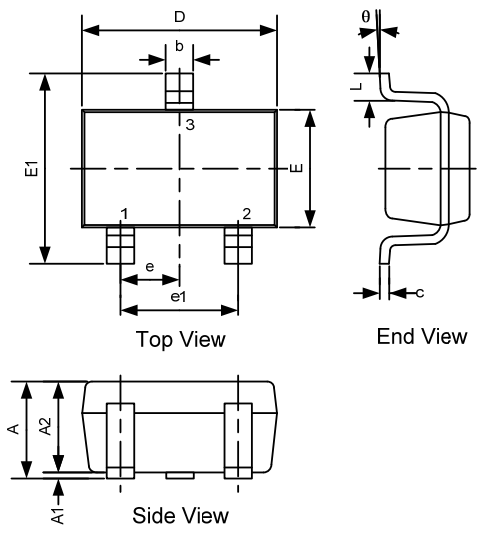
| Symbol | Parameter | Test Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Off Characteristics** | | | | | | |
| $BV_{DSS}$ | Drain to Source Breakdown Voltage | $V_{GS}$=0V, $I_D$=10μA | 60 | | | V |
| | | $V_{GS}$=0V, $I_D$=3mA | 60 | | | |
| $I_{DSS}$ | Zero Gate Voltage Drain Current | $V_{DS}$=60V, $V_{GS}$=0V | | | 1 | μA |
| $I_{GSS}$ | Gate-to-Source Leakage Current | $V_{GS}$=±20V, $V_{DS}$=0V | | | ±100 | nA |
| **On Characteristics** | | | | | | |
| $R_{DS(ON)}$* | Static Drain-to-Source On-Resistance | $V_{GS}$=10V, $I_D$=500mA | | 1.2 | 7.5 | Ω |
| | | $V_{GS}$=5V, $I_D$=50mA | | 1.7 | 7.5 | |
| $V_{GS(TH)}$* | Gate Threshold Voltage | $V_{DS}$= $V_{GS}$ , $I_D$=250μA | 1 | | 2.5 | V |
| $I_{D(ON)}$* | Drain-to-Source On Current | $V_{GS}$=10V, $V_{DS}$=7V | 500 | | | mA |
| $V_{DS(ON)}$* | Drain-to-Source On Voltage | $V_{GS}$=10V, $I_D$=500mA | | | 3.75 | V |
| | | $V_{GS}$=5V, $I_D$=50mA | | | 0.375 | |
| $g_{fs}$* | Forward Transconductance | $V_{DS}$=10V, $I_D$=200mA | 80 | | | mS |
| **Drain-Source Diode Characteristics and Maximum Ratings** | | | | | | |
| $V_{SD}$ | Forward Diode Voltage | $V_{GS}$=0V, $I_S$=115mA | | | 1.2 | V |

*Pulse test: Pulse Width≤300μs, Duty Cycle≤2%

## Package Information

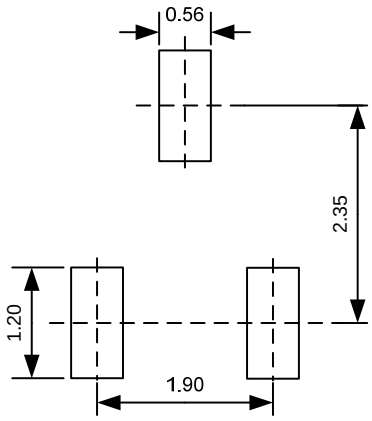
### UM2362S SOT23-3

**Outline Drawing**



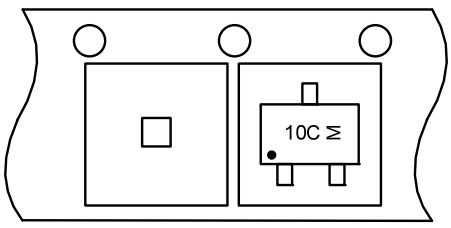

| DIMENSIONS | | | | | | |
|---|---|---|---|---|---|---|
| Symbol | MILLIMETERS | | | INCHES | | |
| | Min | Typ | Max | Min | Typ | Max |
| A | 1.013 | 1.15 | 1.40 | 0.040 | 0.045 | 0.055 |
| A1 | 0.00 | 0.05 | 0.10 | 0.000 | 0.002 | 0.004 |
| A2 | 1.00 | 1.10 | 1.30 | 0.039 | 0.043 | 0.051 |
| b | 0.30 | - | 0.50 | 0.012 | - | 0.020 |
| c | 0.10 | 0.15 | 0.20 | 0.004 | 0.006 | 0.008 |
| D | 2.82 | - | 3.10 | 0.111 | - | 0.122 |
| E | 1.50 | 1.60 | 1.70 | 0.059 | 0.063 | 0.067 |
| E1 | 2.60 | 2.80 | 3.00 | 0.102 | 0.110 | 0.118 |
| e | 0.95REF | | | 0.037REF | | |
| e1 | 1.90REF | | | 0.075REF | | |
| L | 0.30 | - | 0.60 | 0.012 | - | 0.024 |
| θ | 0° | - | 8° | 0° | - | 8° |

**Land Pattern**



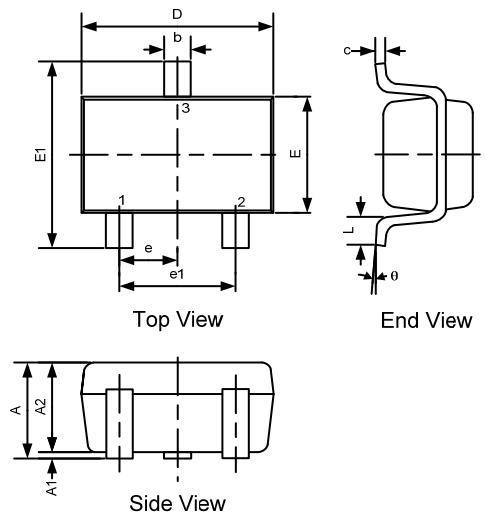

NOTES:
1. Compound dimension: 2.92×1.60；
2. Unit: mm;
3. General tolerance ±0.05mm unless otherwise specified;
4. The layout is just for reference.

**Tape and Reel Orientation**



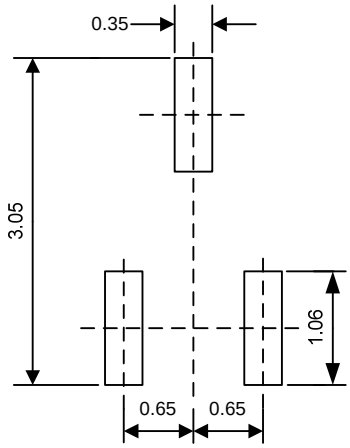
## UM2362P SOT323

### Outline Drawing




| Symbol | DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|
| | MILLIMETERS | | | INCHES | | |
| | Min | Typ | Max | Min | Typ | Max |
| A | 0.90 | - | 1.10 | 0.035 | - | 0.043 |
| A1 | 0.00 | 0.05 | 0.10 | 0.000 | 0.002 | 0.004 |
| A2 | 0.90 | - | 1.00 | 0.035 | - | 0.039 |
| b | 0.20 | 0.30 | 0.40 | 0.008 | 0.012 | 0.016 |
| c | 0.08 | - | 0.18 | 0.003 | - | 0.007 |
| D | 1.80 | 2.15 | 2.20 | 0.071 | 0.085 | 0.087 |
| E | 1.15 | 1.30 | 1.35 | 0.045 | 0.051 | 0.053 |
| E1 | 2.00 | - | 2.45 | 0.079 | - | 0.096 |
| e | 0.65BSC | | | 0.026BSC | | |
| e1 | 1.20 | 1.30 | 1.40 | 0.047 | 0.051 | 0.055 |
| L | 0.25 | - | 0.46 | 0.010 | - | 0.018 |
| θ | 0° | - | 8° | 0° | - | 8° |

### Land Pattern




NOTES:
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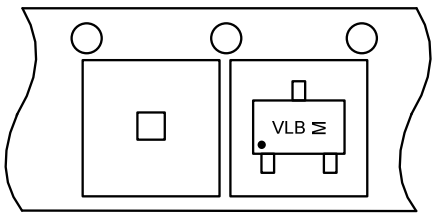
### Tape and Reel Orientation



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