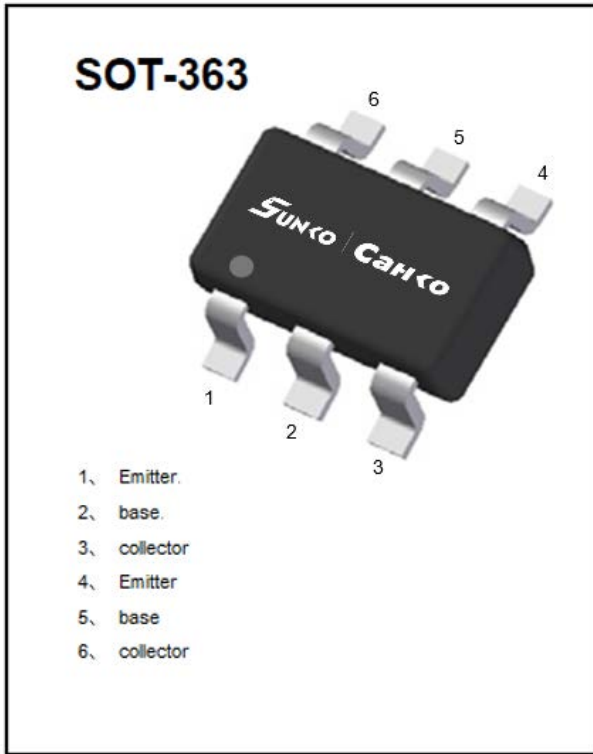


## Dual NPN Small Signal Transistor



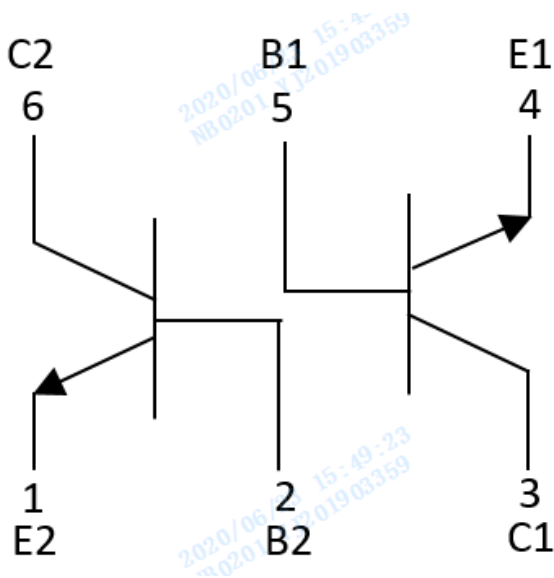
### Features

- Epoxy meets UL-94 V-0 flammability rating
- Surface mount package ideally Suited for Automatic Insertion
- NPN

### Mechanical Data

- **Package:** SOT-363
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** X1

### Equivalent circuit



## UMX1N

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

| Item                          | Symbol | Unit | Conditions    | Value       |
|-------------------------------|--------|------|---------------|-------------|
| Collector-Base Voltage        | VCBO   | V    | IC=50μA, IE=0 | 60          |
| Collector-Emitter Voltage     | VCEO   | V    | IC =1mA, IB=0 | 50          |
| Emitter-Base Voltage          | VEBO   | V    | IE=50μA, IC=0 | 7           |
| Collector Current -Continuous | IC     | mA   |               | 150         |
| Total Device Dissipation      | PC     | mW   |               | 200         |
| Junction Temperature          | Tj     | °C   |               | 150         |
| Storage Temperature           | TSTG   | °C   |               | -55 to +150 |

### ■Electrical Characteristics (Ta=25°C unless otherwise specified)

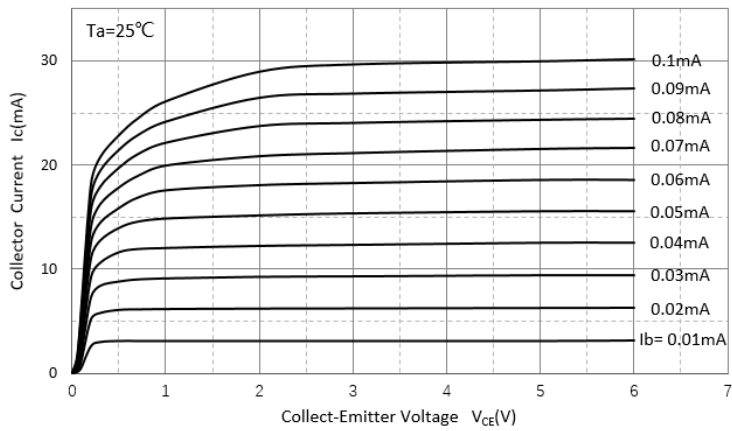
| Item                                 | Symbol               | Unit | Conditions                 | Min | TYP | Max |
|--------------------------------------|----------------------|------|----------------------------|-----|-----|-----|
| Collector-base breakdown voltage     | V <sub>CBO</sub>     | V    | IC=50μA, IE=0              | 60  |     |     |
| Collector-emitter breakdown voltage  | V <sub>CEO</sub>     | V    | IC =1mA, IB=0              | 50  |     |     |
| Emitter-base breakdown voltage       | V <sub>EBO</sub>     | V    | IE=50μA, IC=0              | 7   |     |     |
| Collector cut-off current            | I <sub>CBO</sub>     | nA   | VCB=60V, IB=0              |     |     | 100 |
| Collector cut-off current            | I <sub>EBO</sub>     | nA   | VEB=7V, IC=0               |     |     | 100 |
| DC current gain                      | h <sub>FE</sub>      |      | VCE=6V, IC=1mA             | 120 |     | 560 |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | V    | IC=50mA, IB=5mA            |     |     | 0.4 |
| Transition frequency                 | f <sub>T</sub>       | MHz  | VCE=12V, IC=-2mA, f=100MHz |     | 180 |     |
| Output capacitance                   | Cob                  | pF   | VCB=12V, IE=0A, f=1MHz     |     |     | 3.5 |

### ■ Ordering Information (Example)

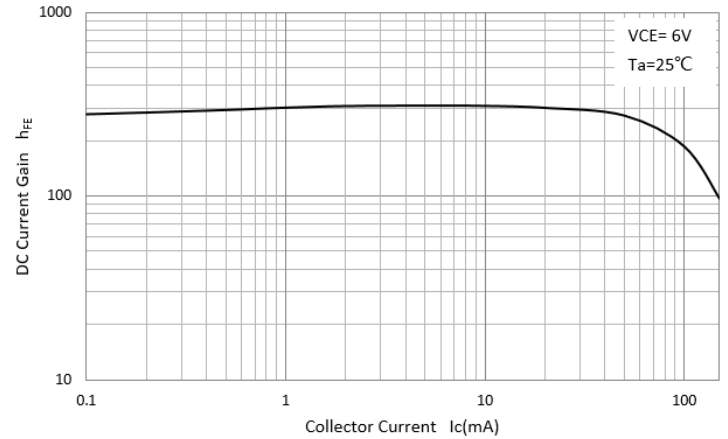
| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)     | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|--------------------|----------------------|-------------------------|----------------------------|---------------|
| UMX1N         | F2           | Approximate 0.009g | 3000                 | 30000                   | 120000                     | 7" reel       |

## ■ Characteristics (Typical)

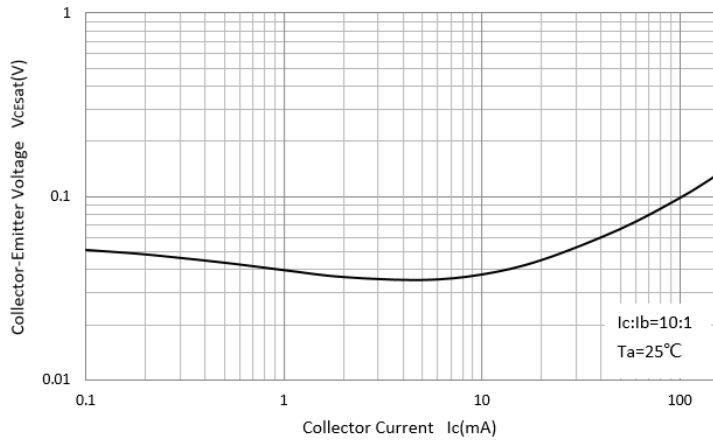
Static Characteristic



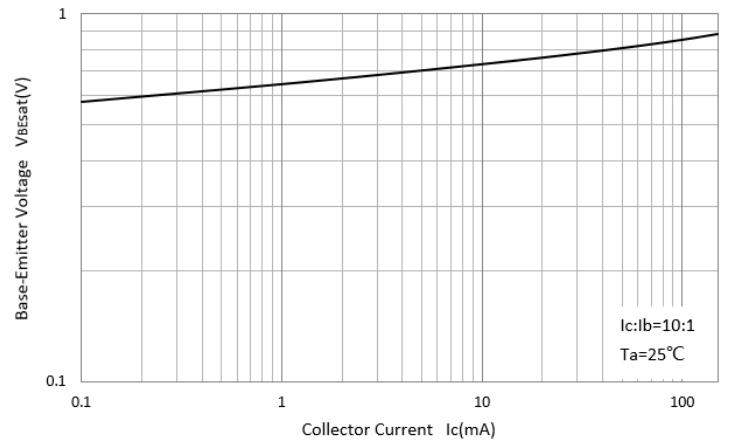
DC Current Gain



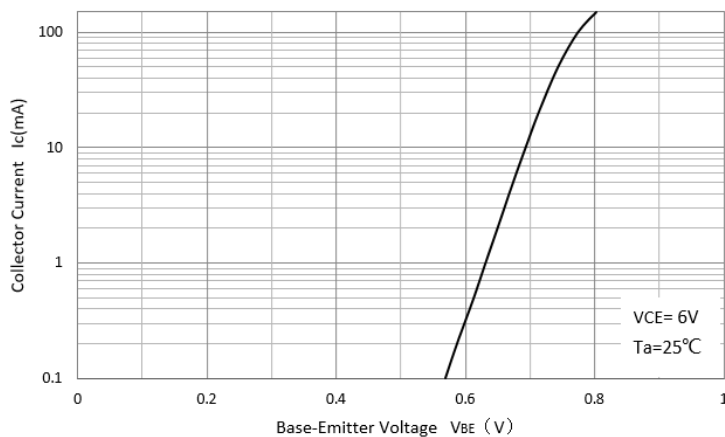
Collector-Emitter Saturation Voltage



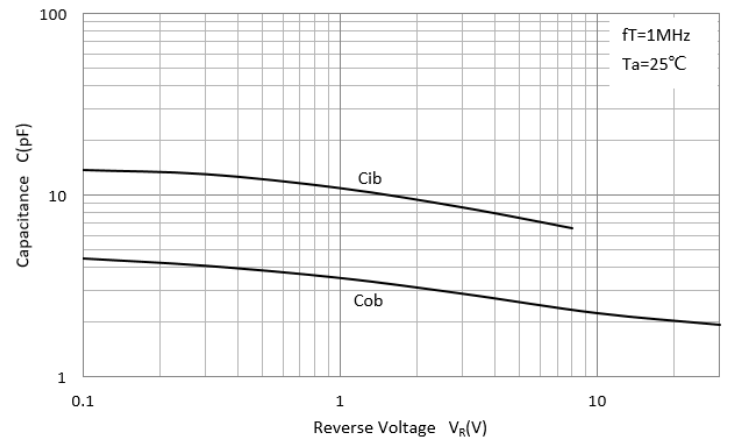
Base-Emitter Saturation Voltage



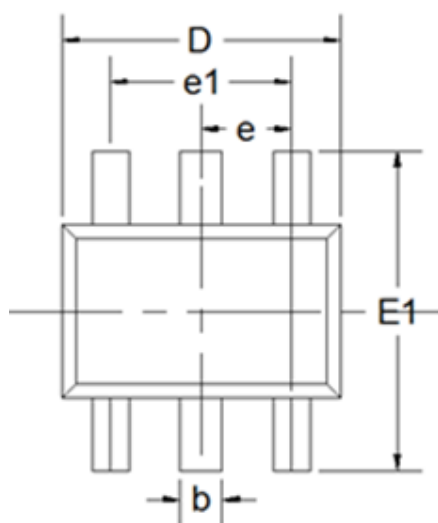
Base-Emitter On Voltage



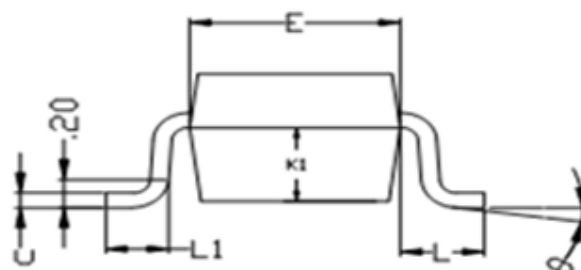
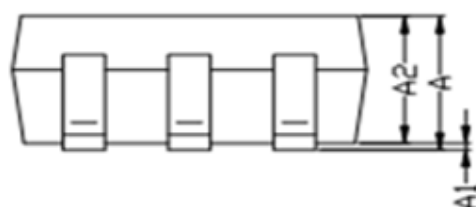
$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



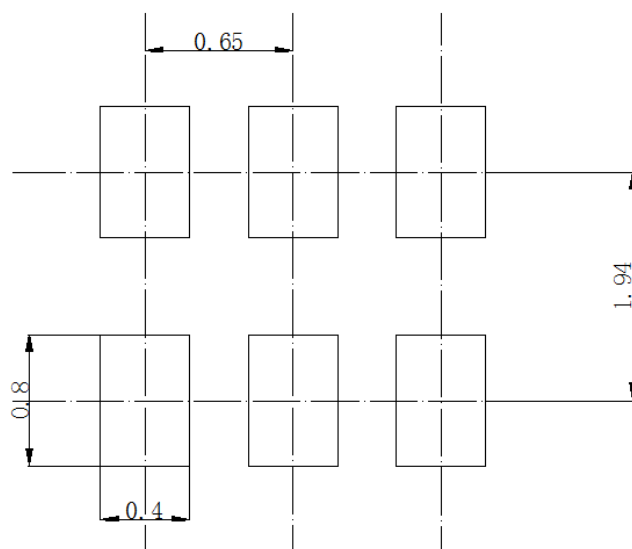
■SOT-363 Package Outline Dimensions



| DIM | DIMENSIONS |       |          |      |
|-----|------------|-------|----------|------|
|     | INCHES     |       | MM       |      |
|     | MIN        | MAX   | MIN      | MAX  |
| A   | 0.035      | 0.043 | 0.9      | 1.1  |
| A1  | 0          | 0.004 | 0        | 0.1  |
| A2  | 0.035      | 0.039 | 0.9      | 1    |
| b   | 0.006      | 0.014 | 0.15     | 0.35 |
| c   | 0.002      | 0.01  | 0.05     | 0.25 |
| D   | 0.071      | 0.087 | 1.8      | 2.2  |
| E   | 0.045      | 0.053 | 1.15     | 1.35 |
| E1  | 0.085      | 0.096 | 2.15     | 2.45 |
| e   | 0.026Typ   |       | 0.65Typ  |      |
| e1  | 0.047      | 0.055 | 1.2      | 1.4  |
| L   | 0.021Typ   |       | 0.525Typ |      |
| L1  | 0.01       | 0.018 | 0.26     | 0.46 |
| θ   | 0°         |       | 8°       |      |



■SOT-363 Soldering Footprint



Unit: mm

## Disclaimer

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