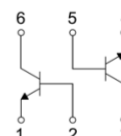
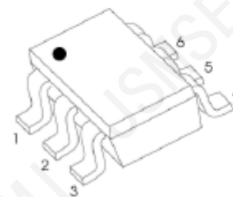


## Features

- Surface mount package ideally Suited for Automatic Insertion

## Mechanical Data

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



**SOT-363**

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

| Symbol          | Parameter                                        | Value    | Unit                 |
|-----------------|--------------------------------------------------|----------|----------------------|
| $V_{CBO}$       | Collector-Base Voltage                           | 50       | V                    |
| $V_{CEO}$       | Collector-Emitter Voltage                        | 45       |                      |
| $V_{EBO}$       | Emitter-Base Voltage                             | 6        |                      |
| $I_C$           | Collector Current-Continuous                     | 100      | mA                   |
| $P_D$           | Power Dissipation                                | 200      | mW                   |
| $R_{\theta JA}$ | Thermal Resistance. Junction to Ambient          | 625      | $^{\circ}\text{C/W}$ |
| $T_J, T_{stg}$  | Operation Junction and Storage Temperature Range | -55~+150 | $^{\circ}\text{C}$   |

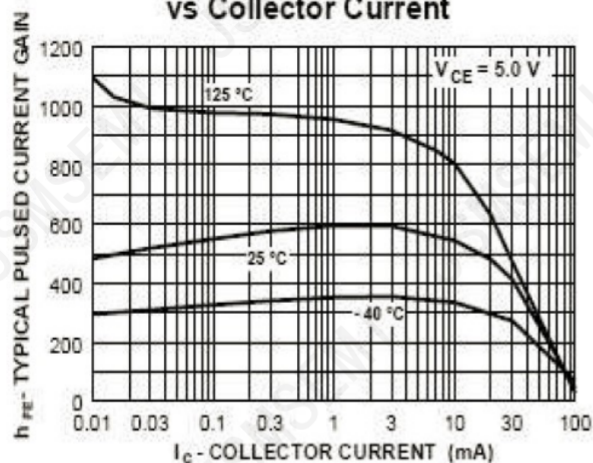
## ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                            | Symbol           | Test conditions                                      | Min  | Typ | Max  | Unit |
|--------------------------------------|------------------|------------------------------------------------------|------|-----|------|------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$    | $I_C=10\mu\text{A}, I_E=0$                           | 50   |     |      | V    |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$    | $I_C=1\text{mA}, I_B=0$                              | 45   |     |      | V    |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$    | $I_E=10\mu\text{A}, I_C=0$                           | 6    |     |      | V    |
| Collector cut-off current            | $I_{CBO}$        | $V_{CB}=30\text{V}, I_E=0$                           |      |     | 15   | nA   |
| Emitter cut-off current              | $I_{EBO}$        | $V_{EB}=4\text{V}, I_C=0$                            |      |     | 15   |      |
| DC current gain*                     | $h_{FE}$         | $V_{CE}=5\text{V}, I_C=2\text{mA}$                   | 200  |     | 450  |      |
| Collector-emitter saturation voltage | $V_{CE(sat)(1)}$ | $I_C=10\text{mA}, I_B=0.5\text{mA}$                  |      |     | 0.25 | V    |
|                                      | $V_{CE(sat)(2)}$ | $I_C=100\text{mA}, I_B=5\text{mA}$                   |      |     | 0.65 | V    |
| Base-emitter voltage                 | $V_{BE(1)}$      | $V_{CE}=5\text{V}, I_C=2\text{mA}$                   | 0.58 |     | 0.7  | V    |
|                                      | $V_{BE(2)}$      | $V_{CE}=5\text{V}, I_C=10\text{mA}$                  |      |     | 0.77 | V    |
| Transition frequency                 | $f_T$            | $V_{CE}=5\text{V}, I_C=20\text{mA}, f=100\text{MHz}$ |      | 200 |      | MHz  |
| Collector output capacitance         | $C_{ob}$         | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$            |      | 2   |      | pF   |

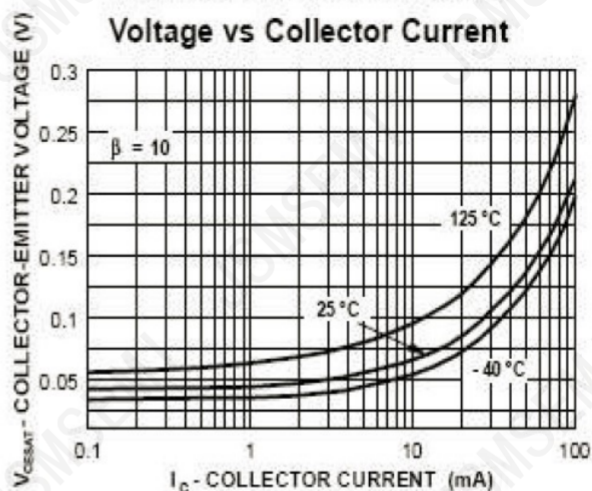
\*pulse test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycles  $\leq 2.0\%$ .

# Typical Characteristics

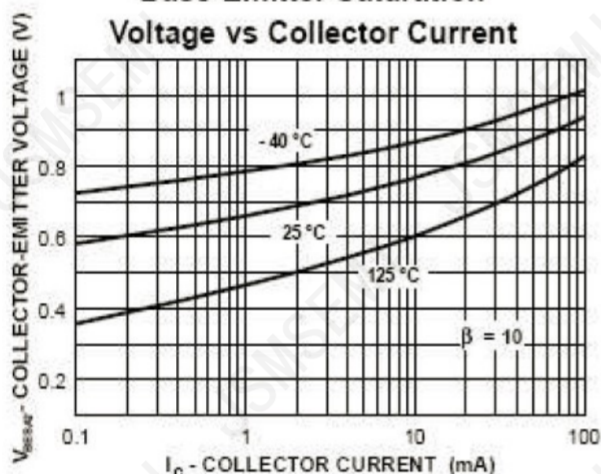
**Typical Pulsed Current Gain  
vs Collector Current**



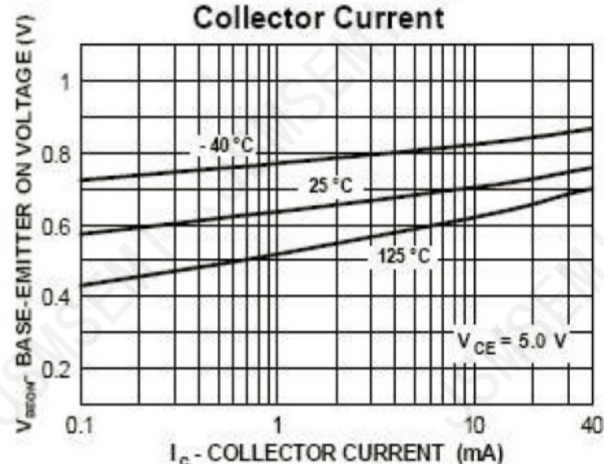
**Collector-Emitter Saturation  
Voltage vs Collector Current**



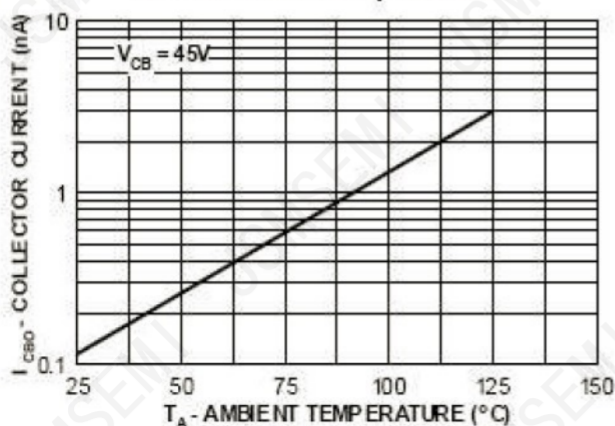
**Base-Emitter Saturation  
Voltage vs Collector Current**



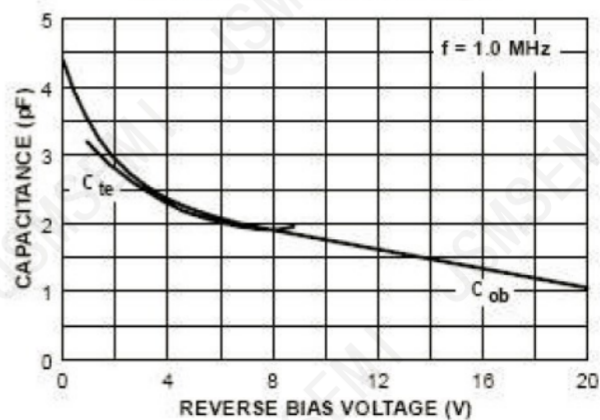
**Base-Emitter ON Voltage vs  
Collector Current**



**Collector-Cutoff Current  
vs Ambient Temperature**

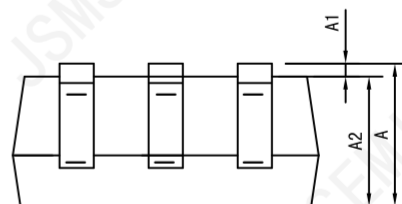
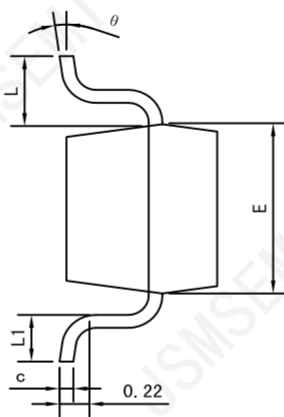
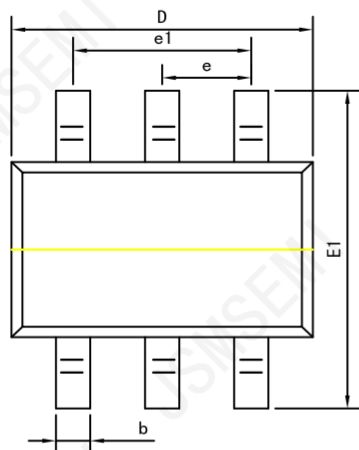


**Input and Output Capacitance  
vs Reverse Bias Voltage**



## Package Information

SOT-363



| Symbol   | Dimension in Millimeters |       |
|----------|--------------------------|-------|
|          | Min                      | Max   |
| A        | 0.900                    | 1.100 |
| A1       | 0.000                    | 0.100 |
| A2       | 0.900                    | 1.000 |
| b        | 0.150                    | 0.350 |
| c        | 0.080                    | 0.150 |
| D        | 2.000                    | 2.200 |
| E        | 1.150                    | 1.350 |
| E1       | 2.150                    | 2.450 |
| e        | 0.650 TYP                |       |
| e1       | 1.200                    | 1.400 |
| L        | 0.525 REF                |       |
| L1       | 0.260                    | 0.460 |
| $\theta$ | 0°                       | 8°    |

## Revision History

| Rev. | Change          | Date      |
|------|-----------------|-----------|
| V1.0 | Initial version | 2/23/2024 |
|      |                 |           |

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