

## Features

- For Switching and AF Amplifier Applications
- AEC-Q101 Qualified
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

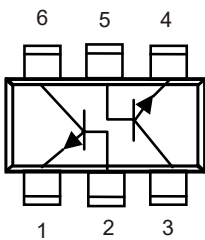
## Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 625°C/W Junction to Ambient

| Parameter                 | Symbol    | Rating | Unit |
|---------------------------|-----------|--------|------|
| Collector-Base Voltage    | $V_{CBO}$ | 50     | V    |
| Collector-Emitter Voltage | $V_{CEO}$ | 45     | V    |
| Emitter-Base Voltage      | $V_{EBO}$ | 6      | V    |
| Collector Current         | $I_C$     | 100    | mA   |
| Peak Collector Current    | $I_{CM}$  | 200    | mA   |
| Power Dissipation         | $P_D$     | 200    | mW   |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

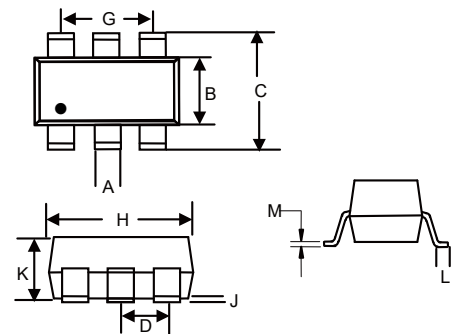
## Internal Structure



Marking: 1C

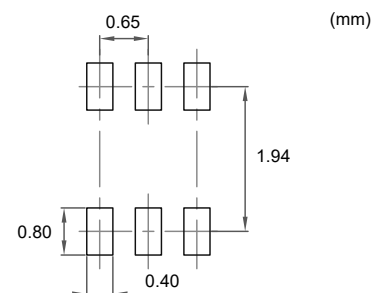
# Dual NPN Small Signal Transistors

## SOT-363



| DIM | DIMENSIONS |       |       |      | NOTE |
|-----|------------|-------|-------|------|------|
|     | INCHES     |       | MM    |      |      |
|     | MIN        | MAX   | MIN   | MAX  |      |
| A   | 0.006      | 0.014 | 0.15  | 0.35 |      |
| B   | 0.045      | 0.053 | 1.15  | 1.35 |      |
| C   | 0.079      | 0.096 | 2.00  | 2.45 |      |
| D   | 0.026      |       | 0.65  |      | TYP. |
| G   | 0.047      | 0.055 | 1.20  | 1.40 |      |
| H   | 0.071      | 0.087 | 1.80  | 2.20 |      |
| J   | -----      | 0.004 | ----- | 0.10 |      |
| K   | 0.031      | 0.043 | 0.80  | 1.10 |      |
| L   | 0.010      | 0.018 | 0.26  | 0.46 |      |
| M   | 0.003      | 0.006 | 0.08  | 0.15 |      |

## Suggested Solder Pad Layout



**Electrical Characteristics @ 25°C Unless Otherwise Specified**

| Parameter                            | Symbol        | Min  | Typ   | Max  | Units | Conditions                     |
|--------------------------------------|---------------|------|-------|------|-------|--------------------------------|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | 50   |       |      | V     | $I_C=10\mu A, I_E=0$           |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | 45   |       |      | V     | $I_C=10mA, I_B=0$              |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ | 6    |       |      | V     | $I_E=10\mu A, I_C=0$           |
| Collector-Base Cutoff Current        | $I_{CBO}$     |      |       | 100  | nA    | $V_{CB}=30V, I_E=0$            |
| Emitter-Base Cutoff Current          | $I_{EBO}$     |      |       | 100  | nA    | $V_{EB}=5V, I_C=0$             |
| DC Current Gain <sup>(2)</sup>       | $h_{FE}$      | 200  |       | 450  |       | $V_{CE}=5V, I_C=2mA$           |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ |      |       | 0.25 | V     | $I_C=10mA, I_B=0.5mA$          |
|                                      |               |      |       | 0.65 | V     | $I_C=100mA, I_B=5mA$           |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ |      |       | 1.05 | V     | $I_C=10mA, I_B=0.5mA$          |
|                                      |               |      |       | 1.1  | V     | $I_C=100mA, I_B=5mA$           |
| Base-Emitter Voltage                 | $V_{BE}$      | 0.58 | 0.665 | 0.7  | V     | $V_{CE}=5V, I_C=2mA$           |
| Transition Frequency                 | $f_T$         | 150  |       |      | MHz   | $V_{CE}=5V, I_C=10mA, f=30MHz$ |
| Output Capacitance                   | $C_{ob}$      |      | 2     |      | pF    | $V_{CB}=10V, I_E=0, f=1MHz$    |

Note: 2.Pluse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$

**Curve Characteristics**

Fig. 1 - Static Characteristics

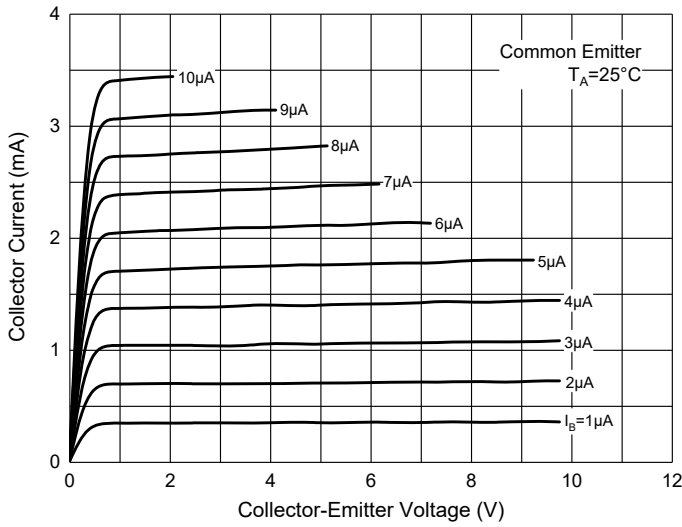


Fig. 2 - DC Current Gain Characteristics

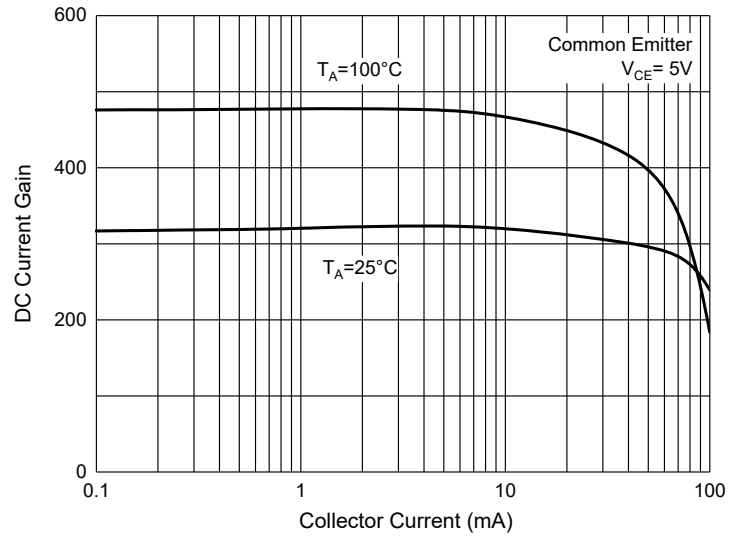


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

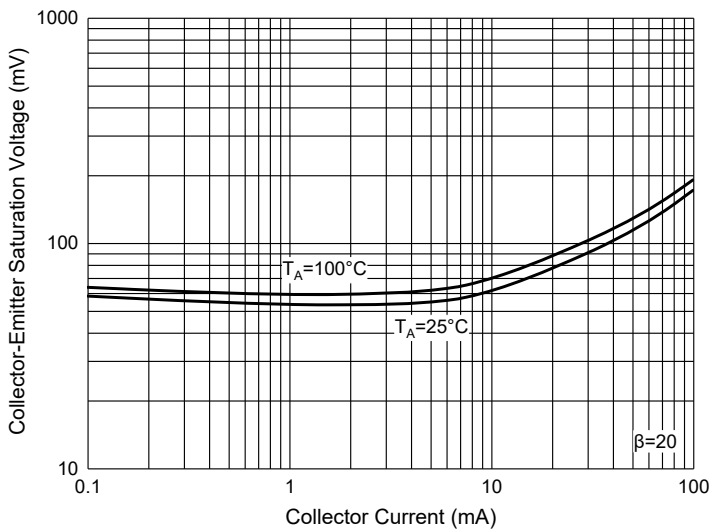


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

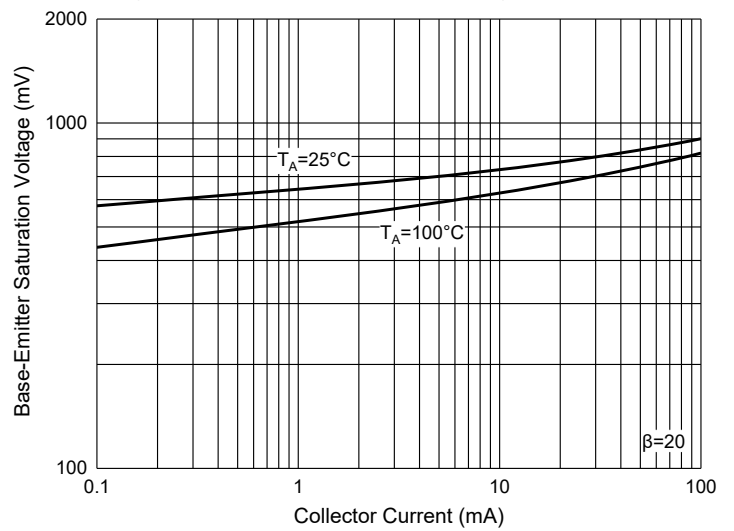


Fig. 5 - Base-Emitter Voltage Characteristics

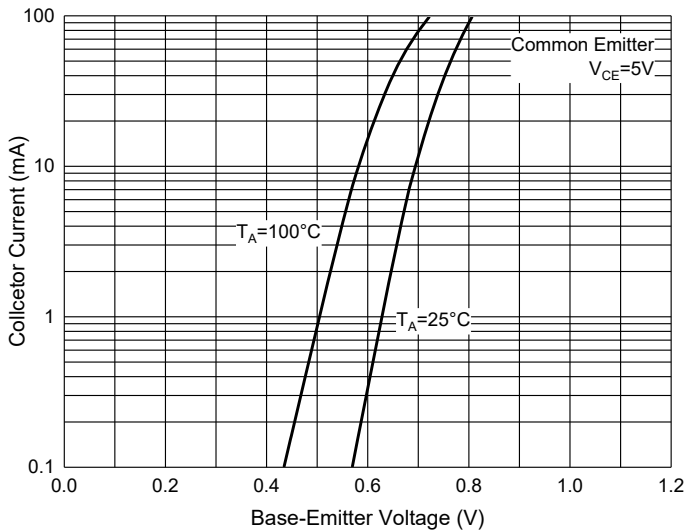
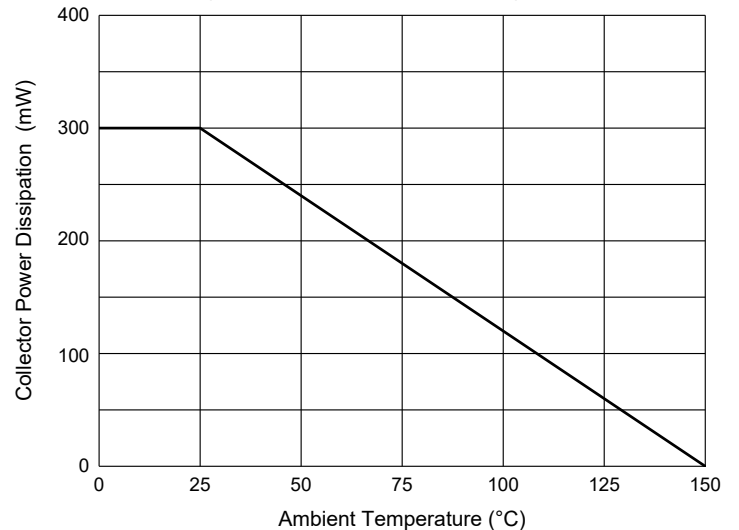


Fig. 6 - Collector Power Derating Curve



## Ordering Information

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

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