

## Features

- Low Current
- Low Voltage
- 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

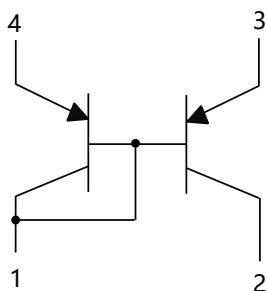
| Parameter                    | Symbol    | Rating | Unit |
|------------------------------|-----------|--------|------|
| Collector-Base Voltage       | $V_{CBO}$ | -30    | V    |
| Collector-Emitter Voltage    | $V_{CEO}$ | -30    | V    |
| Emitter-Base Voltage         | $V_{EBO}$ | -6     | V    |
| Continuous Collector Current | $I_C$     | -0.1   | A    |
| Peak Collector Current       | $I_{CM}$  | -0.2   | A    |
| Power Dissipation            | $P_D$     | 250    | mW   |

## Thermal characteristics

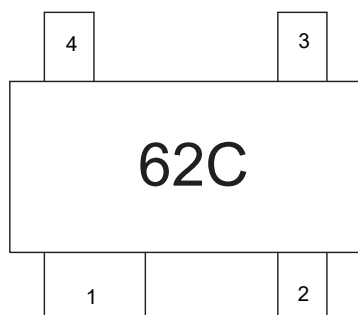
| Parameter                                   | Symbol        | Rating   | Unit |
|---------------------------------------------|---------------|----------|------|
| Operating Junction Temperature Range        | $T_{OPR}$     | -65~+150 | °C   |
| Storage Temperature Range                   | $T_{STR}$     | -65~+150 | °C   |
| Thermal Resistance from Junction to Ambient | $R_{th(j-a)}$ | 500      | °C/W |

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



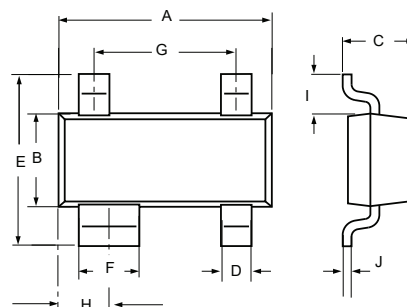
## Device Marking



## PNP

## General-purpose Double Transistor

## SOT-143



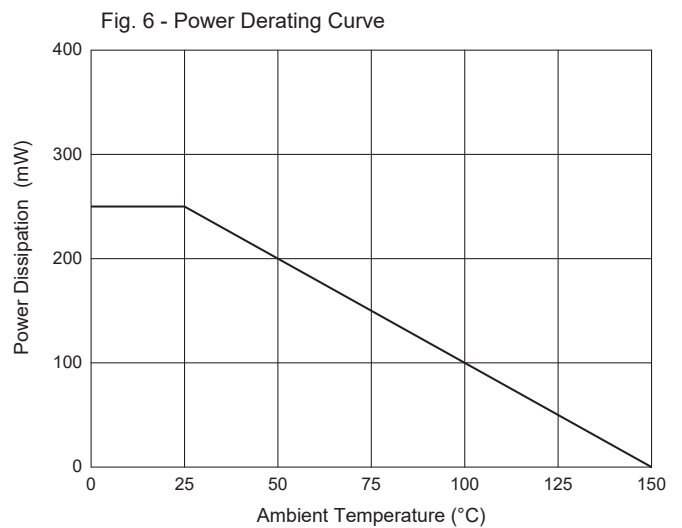
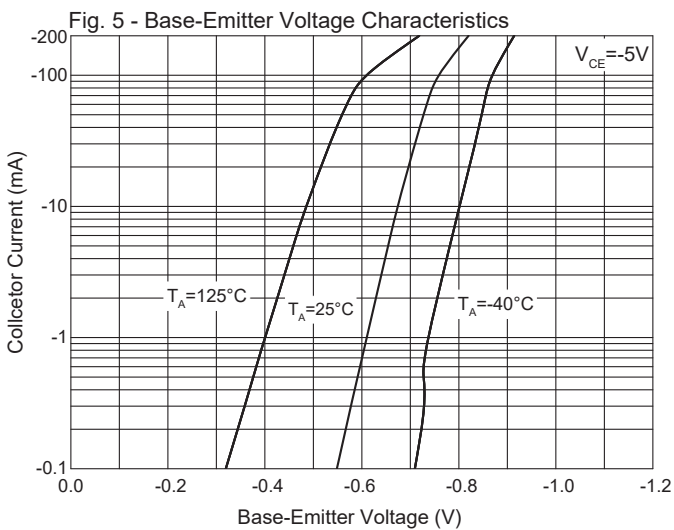
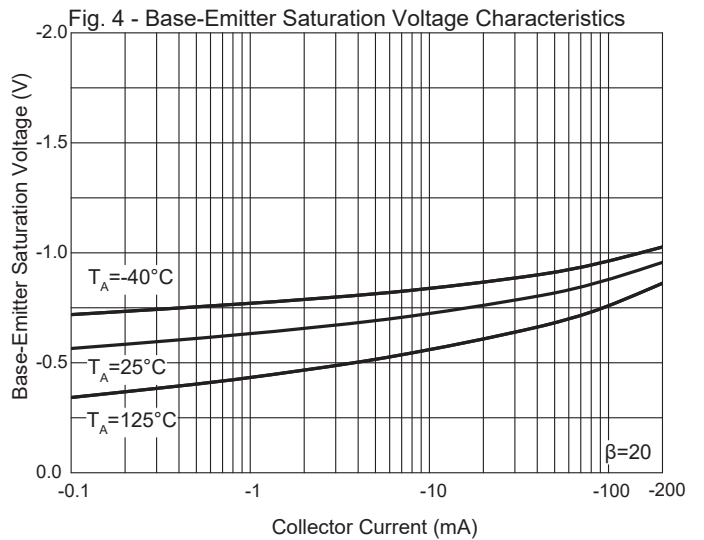
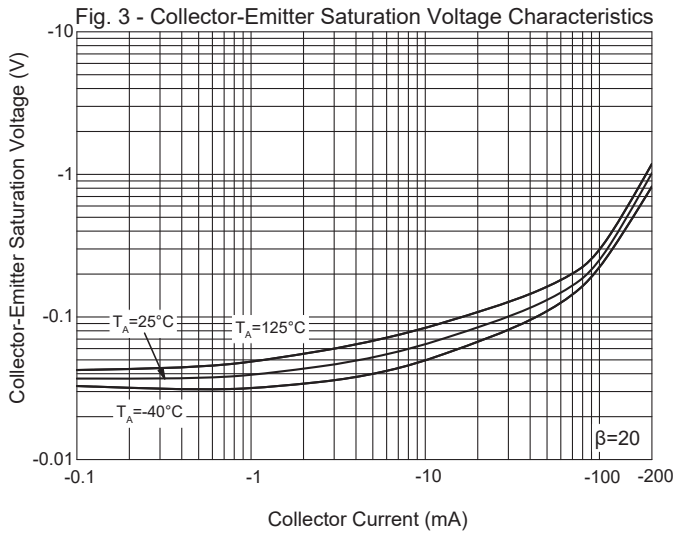
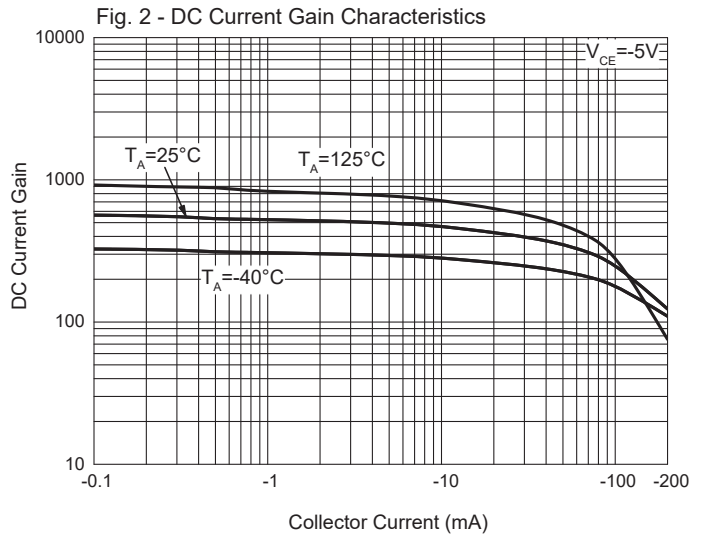
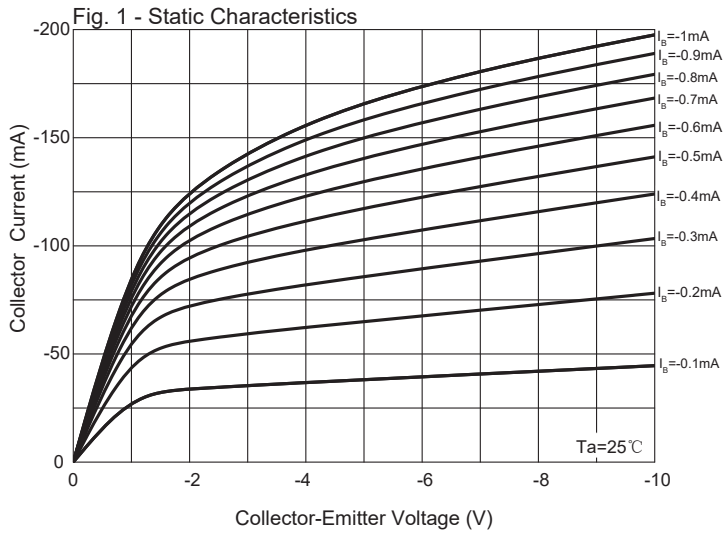
### DIMENSIONS

| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | 0.110  | 0.120 | 2.80 | 3.04 |      |
| B   | 0.047  | 0.055 | 1.20 | 1.39 |      |
| C   | 0.031  | 0.048 | 0.80 | 1.22 |      |
| D   | 0.011  | 0.020 | 0.30 | 0.51 |      |
| E   | 0.082  | 0.104 | 2.10 | 2.64 |      |
| F   | 0.029  | 0.037 | 0.76 | 0.94 |      |
| G   | 0.070  | 0.080 | 1.78 | 2.03 |      |
| H   | 0.028  | 0.033 | 0.72 | 0.83 |      |
| I   | 0.015  | 0.024 | 0.40 | 0.60 |      |
| J   | 0.003  | 0.008 | 0.08 | 0.20 |      |

Electrical Characteristics @  $T_A=25^{\circ}\text{C}$  Unless Otherwise Specified

| Parameter                            | Symbol        | Min   | Typ   | Max   | Units | Conditions                                                   |
|--------------------------------------|---------------|-------|-------|-------|-------|--------------------------------------------------------------|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | -30   |       |       | V     | $I_C=-100\mu\text{A}$ , $I_E=0$                              |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | -30   |       |       | V     | $I_C=-10\text{mA}$ , $I_B=0$                                 |
| Emitter-Base Breakdown Voltage       | $V_{(BR)EBO}$ | -6    |       |       | V     | $I_E=-100\mu\text{A}$ , $I_C=0$                              |
| Collector-Base Cutoff Current        | $I_{CBO}$     |       |       | -15   | nA    | $V_{CB}=-30\text{V}$ , $I_E=0$                               |
| Emitter-Base Cutoff Current          | $I_{EBO}$     |       |       | -100  | nA    | $V_{EB}=-5\text{V}$ , $I_C=0$                                |
| DC Current Gain                      | $h_{FE(1)}$   | 100   |       |       |       | $V_{CE}=-5\text{V}$ , $I_C=-100\mu\text{A}$                  |
|                                      | $h_{FE(2)}$   | 420   |       | 800   |       | $V_{CE}=-5\text{V}$ , $I_C=-2\text{mA}$                      |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ |       |       | -0.3  | V     | $I_C=-10\text{mA}$ , $I_B=-0.5\text{mA}$                     |
|                                      |               |       |       | -0.65 | V     | $I_C=-100\text{mA}$ , $I_B=-5\text{mA}$                      |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ |       | -0.7  |       | V     | $I_C=-10\text{mA}$ , $I_B=-0.5\text{mA}$                     |
|                                      |               |       | -0.9  |       | V     | $I_C=-100\text{mA}$ , $I_B=-5\text{mA}$                      |
| Base-Emitter Turn-on Voltage         | $V_{BE(on)}$  | -0.58 | -0.62 | -0.75 | V     | $V_{CE}=-5\text{V}$ , $I_C=-2\text{mA}$                      |
|                                      |               |       |       | -0.82 | V     | $V_{CE}=-5\text{V}$ , $I_C=-10\text{mA}$                     |
| Transition Frequency                 | $f_T$         | 100   |       |       | MHz   | $V_{CE}=-5\text{V}$ , $I_C=-10\text{mA}$ , $f=100\text{MHz}$ |
| Collector Output Capacitance         | $C_{ob}$      |       | 4.5   |       | pF    | $V_{CB}=-10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$             |

## Curve Characteristics



## Ordering Information

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

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