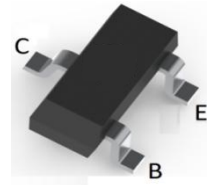
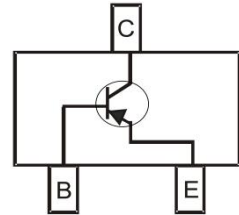


BIPOLAR TRANSISTOR (PNP)
FEATURES

- Complementary to S9013
- Excellent h_{FE} Linearity
- High Collector Current
- Surface Mount device


SOT-23

MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.008 grams (approximate)

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

| Parameter | Symbol | Value | Unit |
|---------------------------------------------|-----------------|-----------|--------------------|
| Collector-Base Voltage | V_{CBO} | -40 | V |
| Collector-Emitter Voltage | V_{CEO} | -25 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Collector Current | I_C | -500 | mA |
| Collector Power Dissipation | P_C | 300 | mW |
| Thermal Resistance From Junction To Ambient | $R_{\theta JA}$ | 416 | $^\circ\text{C/W}$ |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~+150 | $^\circ\text{C}$ |

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

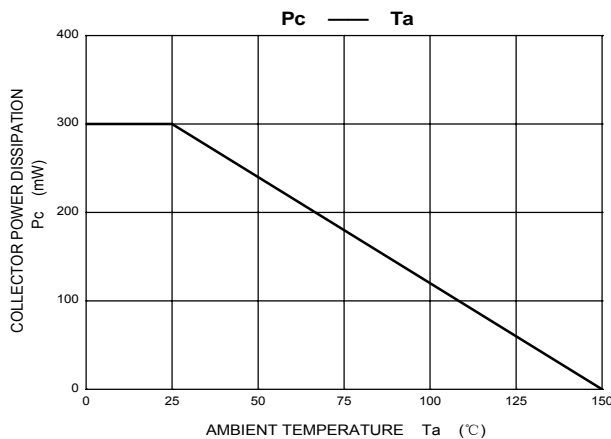
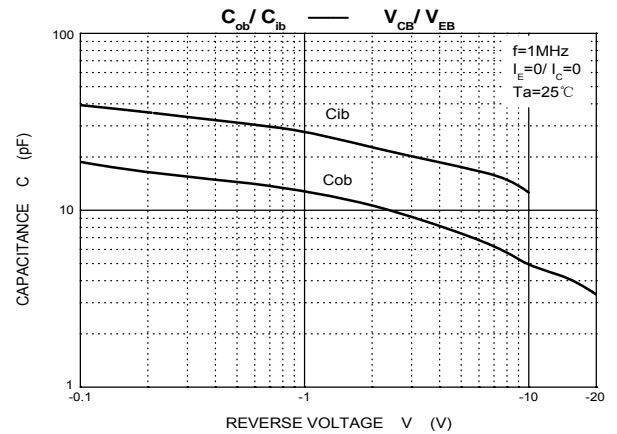
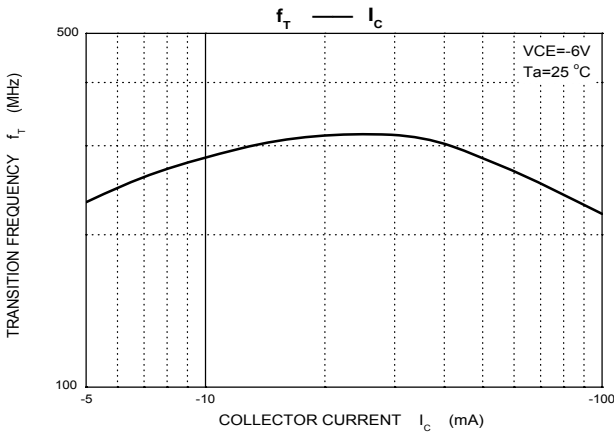
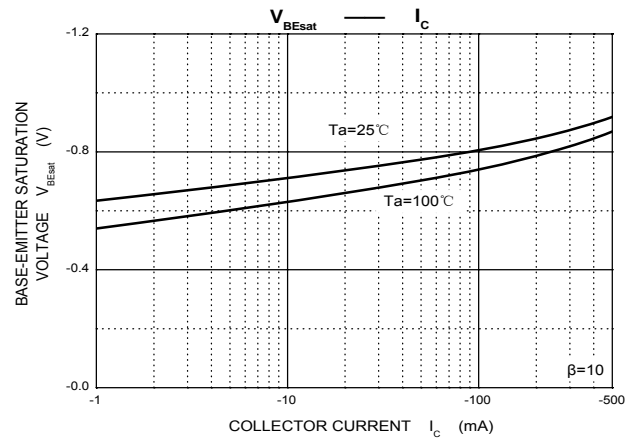
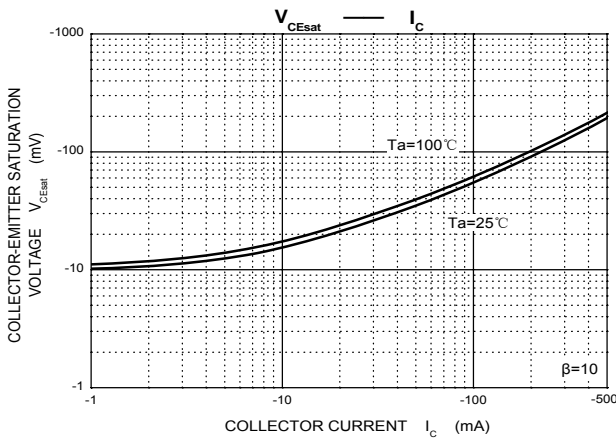
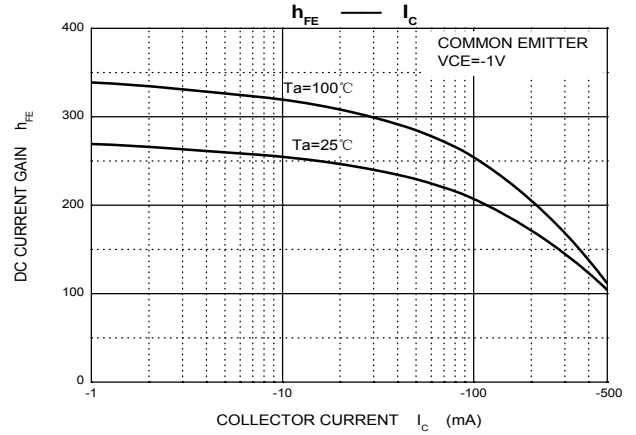
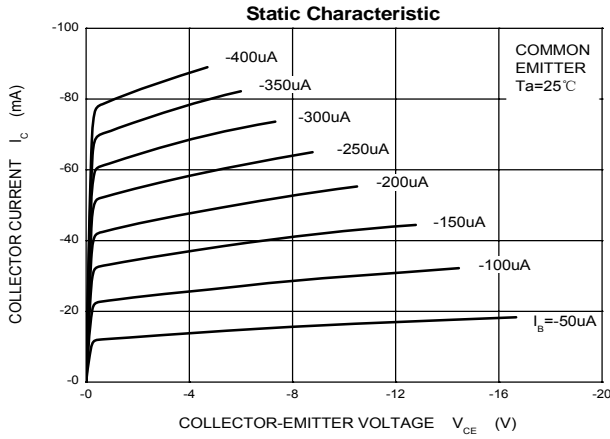
| Parameter | Symbol | Min | Typ | Max | Unit | Conditions |
|--------------------------------------|---------------|-----|-----|------|---------------|-------------------------------------------------------------------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | -40 | | | V | $I_C = -100\mu\text{A}$, $I_E = 0$ |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | -25 | | | V | $I_C = -1\text{mA}$, $I_B = 0$ |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | -5 | | | V | $I_E = -100\mu\text{A}$, $I_C = 0$ |
| Collector cut-off current | I_{CBO} | | | -0.1 | μA | $V_{CB} = -40\text{V}$, $I_E = 0$ |
| Collector cut-off current | I_{CEO} | | | -0.1 | μA | $V_{CE} = -20\text{V}$, $I_B = 0$ |
| Emitter cut-off current | I_{EBO} | | | -0.1 | μA | $V_{EB} = -5\text{V}$, $I_C = 0$ |
| DC current gain | h_{FE} | 120 | | 400 | | $V_{CE} = -1\text{V}$, $I_C = -50\text{mA}$ |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | | | -0.6 | V | $I_C = -500\text{mA}$, $I_B = -50\text{mA}$ |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | | | -1.2 | V | $I_C = -500\text{mA}$, $I_B = -50\text{mA}$ |
| Transition frequency | f_T | 150 | | | MHz | $V_{CE} = -6\text{V}$, $I_C = -20\text{mA}$, $f = 30\text{MHz}$ |
| Collector output capacitance | C_{ob} | | | 5 | pF | $V_{CE} = -10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$ |

CLASSIFICATION OF h_{FE}

| Rank | L | H | J |
|---------|---------|---------|---------|
| Range | 120-200 | 200-350 | 300-400 |
| Marking | 2T1 | | |

BIPOLAR TRANSISTOR (PNP)

Typical Characteristics



BIPOLAR TRANSISTOR (PNP)

SOT-23 Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

SOT-23 Suggested Pad Layout



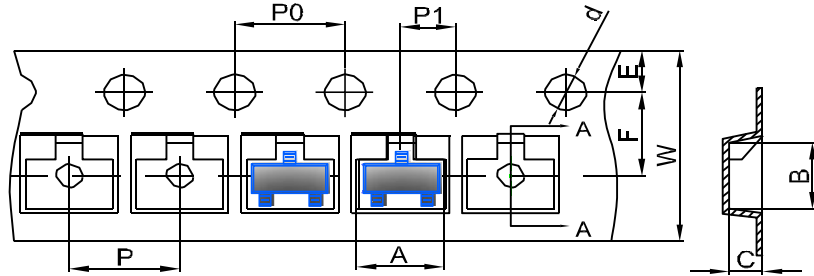
Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

BIPOLAR TRANSISTOR (PNP)

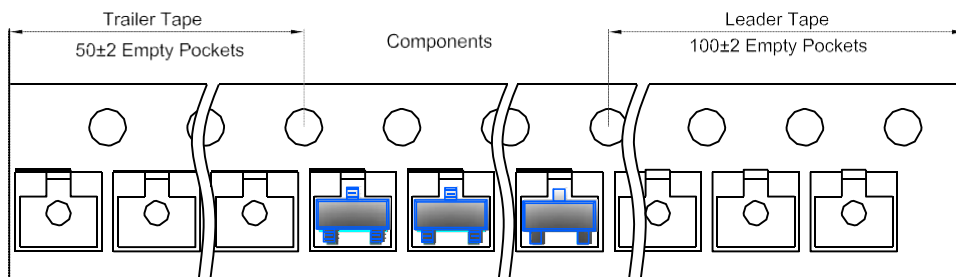
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

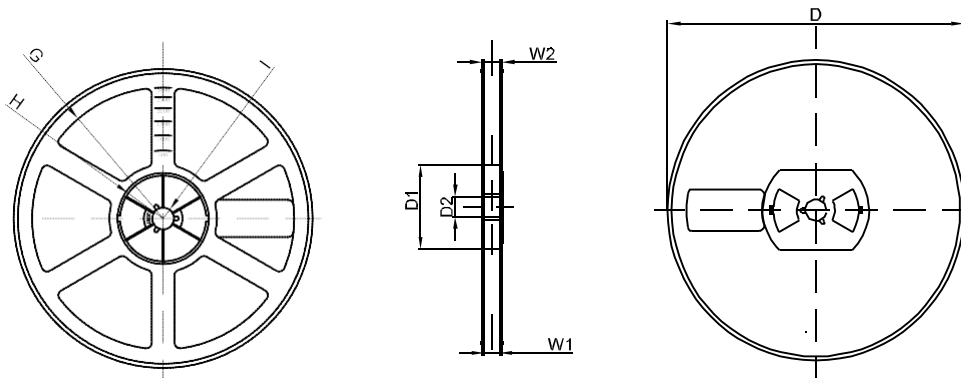


| DIMENSIONS ARE IN MILLIMETER | | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| TYPE | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-23 | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |
| TOLERANCE | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 |

SOT-23 Tape Leader and Trailer



SOT-23 Reel



| DIMENSIONS ARE IN MILLIMETER | | | | | | | | |
|------------------------------|------|-------|-------|-----|--------|-------|------|-------|
| REEL OPTION | D | D1 | D2 | G | H | I | W1 | W2 |
| 7" DIA | Ø178 | 54.40 | 13.00 | R78 | R25.60 | R6.50 | 9.50 | 12.30 |
| TOLERANCE | ±2 | ±1 | ±1 | ±1 | ±1 | ±1 | ±1 | ±1 |

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Bipolar Transistors - BJT category](#):

Click to view products by [Hottech manufacturer](#):

Other Similar products are found below :

[619691C](#) [MCH4017-TL-H](#) [MMBT-2369-TR](#) [BC546/116](#) [BC557/116](#) [BSW67A](#) [NJVMJD148T4G](#) [NTE123AP-10](#) [NTE153MCP](#) [NTE16](#)
[NTE195A](#) [NTE92](#) [C4460](#) [2N4401-A](#) [2N6728](#) [2SA1419T-TD-H](#) [2SA2126-E](#) [2SB1204S-TL-E](#) [2SC2712S-GR,LF](#) [2SC5488A-TL-H](#)
[2SD2150T100R](#) [SP000011176](#) [2N2907A](#) [2N3904-NS](#) [2N5769](#) [2SC2412KT146S](#) [2SD1816S-TL-E](#) [CPH6501-TL-E](#) [MCH4021-TL-E](#)
[MJE340](#) [US6T6TR](#) [NJL0281DG](#) [732314D](#) [CPH3121-TL-E](#) [CPH6021-TL-H](#) [873787E](#) [IMZ2AT108](#) [UMX21NTR](#) [MCH6102-TL-E](#)
[NJL0302DG](#) [2N3583](#) [30A02MH-TL-E](#) [TN6717A](#) [NSV40301MZ4T1G](#) [NTE13](#) [NTE26](#) [NTE282](#) [NTE323](#) [NTE350](#) [NTE81](#)