

SOT-23

Pin Definition:

1. Base
2. Emitter
3. Collector

PRODUCT SUMMARY

| | |
|---------------|--------------------------------------|
| BV_{CBO} | -60V |
| BV_{CEO} | -60V |
| I_C | -0.6A |
| $V_{CE(SAT)}$ | -0.4V @ $I_C / I_B = -150mA / -15mA$ |

Features

- Low $V_{CE(SAT)}$ -0.4 @ $I_C / I_B = -150mA / -15mA$
- Complementary part with TSC2411

Structure

- Epitaxial Planar Type
- PNP Silicon Transistor

Ordering Information

| Part No. | Package | Packing |
|---------------|---------|-----------------|
| TSA1036CX RFG | SOT-23 | 3Kpcs / 7" Reel |

Note: "G" denotes for Halogen Free

Absolute Maximum Rating ($T_a = 25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Limit | Unit |
|--|----------------|--------------|---------------------------|
| Collector-Base Voltage | V_{CBO} | -60 | V |
| Collector-Emitter Voltage | V_{CEO} | -60 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Collector Current | I_C | -0.6 | A |
| Collector Power Dissipation | P_D | 225 | mW |
| Thermal Resistance, Junction to Ambient | $R\theta_{JA}$ | 556 | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature | T_J | +150 | $^\circ\text{C}$ |
| Operating Junction and Storage Temperature Range | T_{STG} | - 55 to +150 | $^\circ\text{C}$ |

Note: Single pulse, $P_w \leq 350\mu\text{s}$, $Duty \leq 2\%$

Electrical Specifications ($T_a = 25^\circ\text{C}$ unless otherwise noted)

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|--------------------------------------|---|----------------|-----|-----|------|------|
| Collector-Base Breakdown Voltage | $I_C = -10\mu\text{A}$, $I_E = 0$ | BV_{CBO} | -60 | -- | -- | V |
| Collector-Emitter Breakdown Voltage | $I_C = -10\text{mA}$, $I_B = 0$ | BV_{CEO} | -60 | -- | -- | V |
| Emitter-Base Breakdown Voltage | $I_E = -10\mu\text{A}$, $I_C = 0$ | BV_{EBO} | -5 | -- | -- | V |
| Collector Cutoff Current | $V_{CB} = -50\text{V}$, $I_E = 0$ | I_{CBO} | -- | -- | -10 | nA |
| Emitter Cutoff Current | $V_{EB} = -0.5\text{V}$, $I_C = 0$ | I_{EBO} | -- | -- | -50 | nA |
| Collector-Emitter Saturation Voltage | $I_C / I_B = -150\text{mA} / -15\text{mA}$ | $*V_{CE(SAT)}$ | -- | -- | -0.4 | V |
| Base-Emitter Saturation Voltage | $I_C / I_B = -500\text{mA} / -50\text{mA}$ | $*V_{BE(SAT)}$ | -- | -- | -1.3 | V |
| DC Current Transfer Ratio | $V_{CE} = -10\text{V}$, $I_C = -0.1\text{A}$ | $*h_{FE1}$ | 75 | -- | -- | |
| | $V_{CE} = -10\text{V}$, $I_C = -150\text{mA}$ | $*h_{FE2}$ | 100 | -- | 300 | |
| Transition Frequency | $V_{CE} = -5\text{V}$, $I_C = -50\text{mA}$, $f = 100\text{MHz}$ | f_T | 200 | -- | -- | MHz |
| Output Capacitance | $V_{CB} = -10\text{V}$, $f = 1\text{MHz}$ | C_{ob} | -- | -- | 8 | pF |

* Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$

Electrical Characteristics Curve (Ta = 25°C, unless otherwise noted)

Figure 1. DC Current Gain

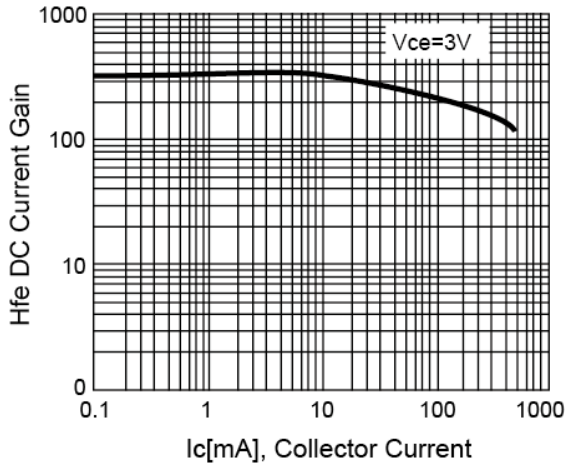


Figure 2. V_{CE(SAT)} v.s. Ic

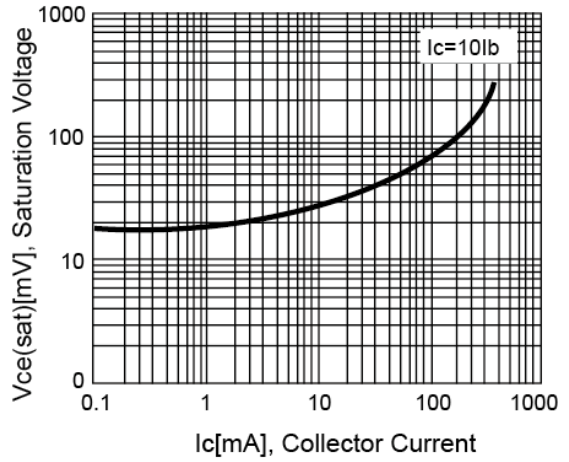


Figure 3. V_{BE(SAT)} v.s. Ic

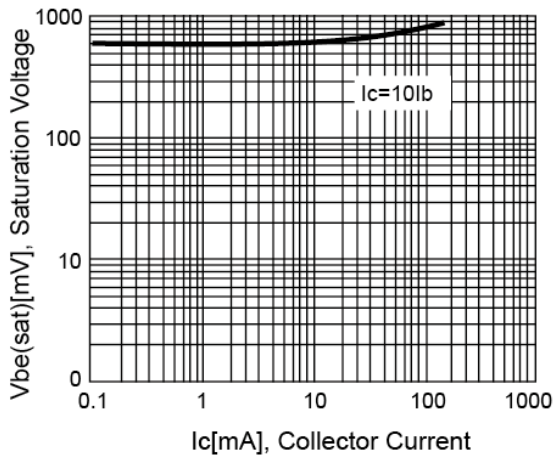


Figure 4. Cutoff Frequency vs. Ic

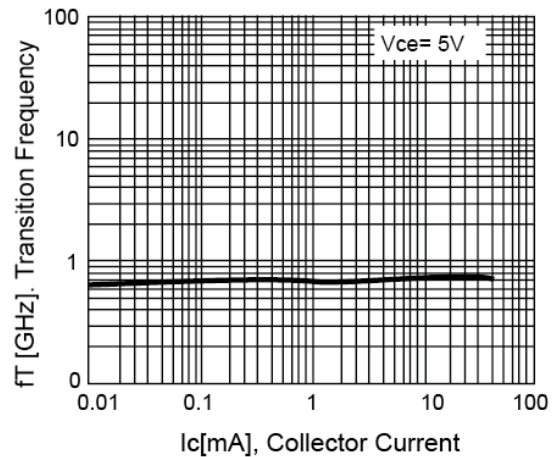
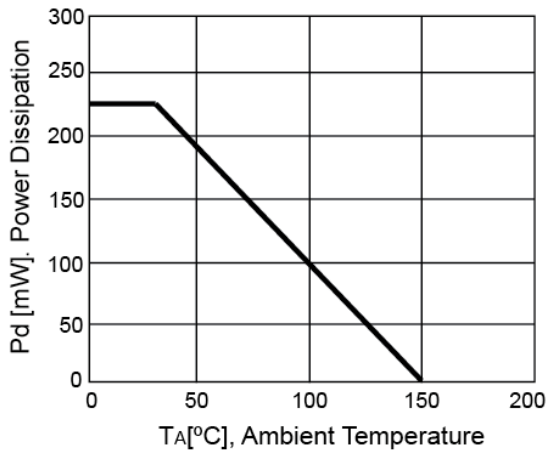
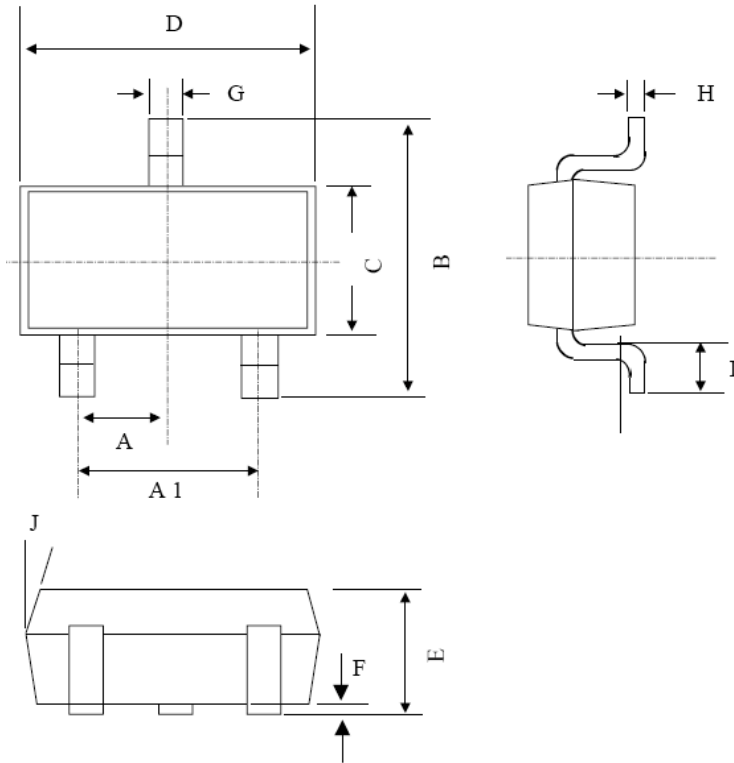


Figure 5. Power Derating Curve



SOT-23 Mechanical Drawing



| SOT-23 DIMENSION | | | | |
|------------------|-------------|------|-----------|-------|
| DIM | MILLIMETERS | | INCHES | |
| | MIN | MAX | MIN | MAX. |
| A | 0.95 BSC | | 0.037 BSC | |
| A1 | 1.9 BSC | | 0.074 BSC | |
| B | 2.60 | 3.00 | 0.102 | 0.118 |
| C | 1.40 | 1.70 | 0.055 | 0.067 |
| D | 2.80 | 3.10 | 0.110 | 0.122 |
| E | 1.00 | 1.30 | 0.039 | 0.051 |
| F | 0.00 | 0.10 | 0.000 | 0.004 |
| G | 0.35 | 0.50 | 0.014 | 0.020 |
| H | 0.10 | 0.20 | 0.004 | 0.008 |
| I | 0.30 | 0.60 | 0.012 | 0.024 |
| J | 5° | 10° | 5° | 10° |

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