



2SA1249/2SC3117

160V/1.5A Switching Applications

Uses

- Color TV sound output, converters, inverters.

Features

- High breakdown voltage.
- Large current capacity.
- Adoption of MBIT process.

() : 2SA1249

Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------------------|-------------|------|
| Collector-to-Base Voltage | V_{CB0} | | (-)180 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | (-)160 | V |
| Emitter-to-Base Voltage | V_{EBO} | | (-)6 | V |
| Collector Current | I_C | | (-)1.5 | A |
| Collector Current (Pulse) | I_{CP} | | (-)2.5 | A |
| Collector Dissipation | P_C | | 1 | W |
| | | $T_c=25^\circ\text{C}$ | 10 | W |
| Junction Temperature | T_J | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|-----------|--|---------|-----|--------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = (-)120\text{V}, I_E = 0$ | | | (-)1.0 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = (-)4\text{V}, I_C = 0$ | | | (-)1.0 | μA |
| DC Current Gain | h_{FE1} | $V_{CE} = (-)5\text{V}, I_C = (-)100\text{mA}$ | 100* | | 400* | |
| | h_{FE2} | $V_{CE} = (-)5\text{V}, I_C = (-)10\text{mA}$ | 90* | | | |
| Gain-Bandwidth Product | f_T | $V_{CE} = (-)10\text{V}, I_C = (-)50\text{mA}$ | | 120 | | MHz |

* : 2SA1249/2SC3117 are classified by 100mA h_{FE} as follows:

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| Rank | R | S | T |
|----------|------------|------------|------------|
| h_{FE} | 100 to 200 | 140 to 280 | 200 to 400 |

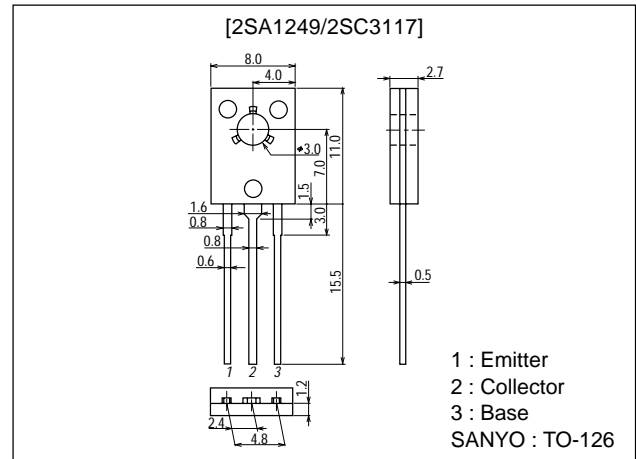
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Package Dimensions

unit:mm

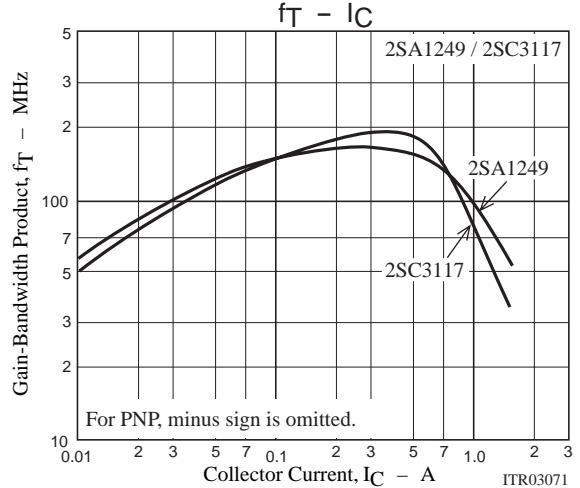
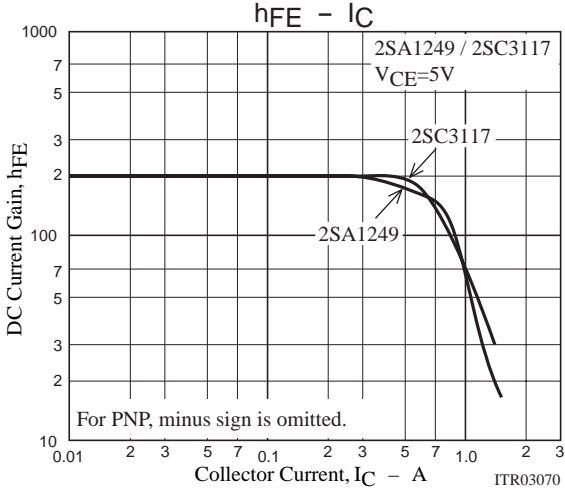
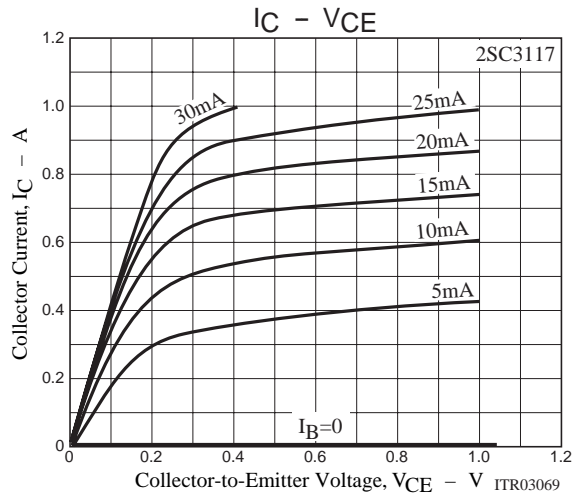
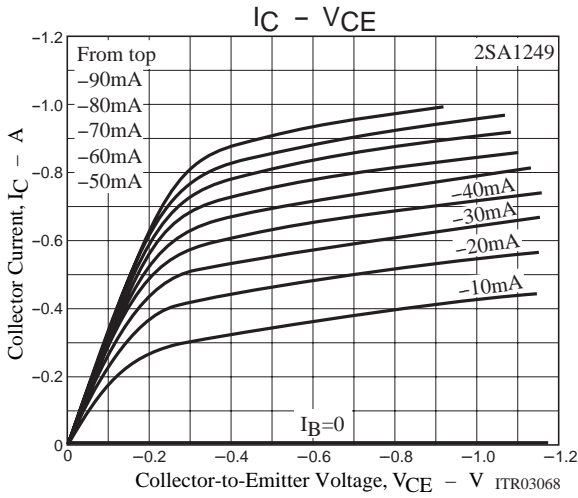
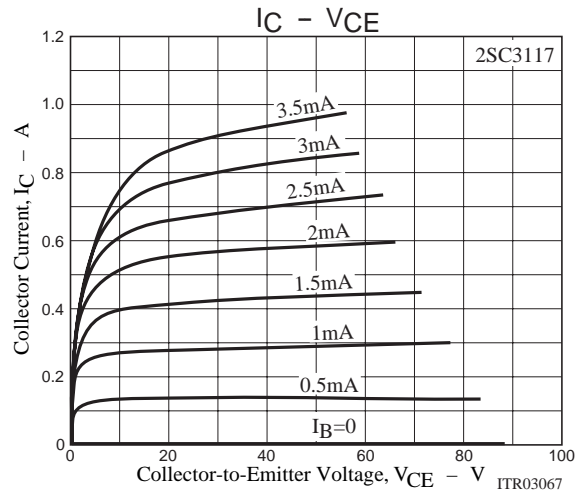
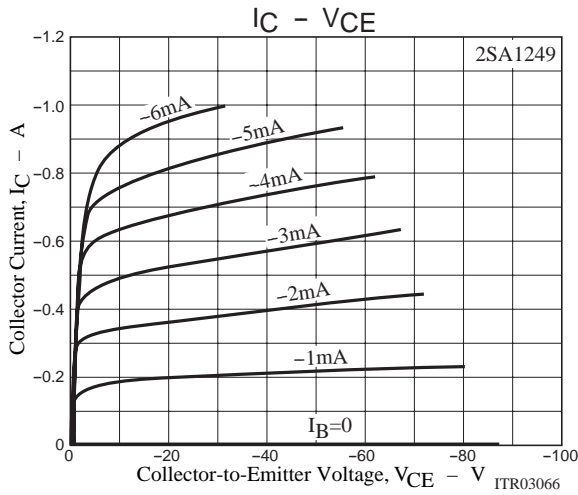
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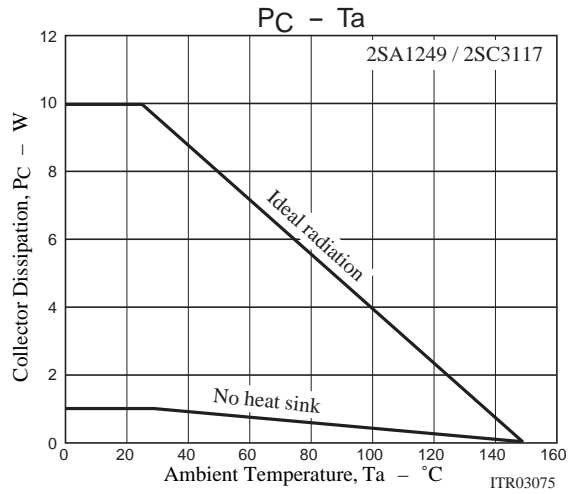
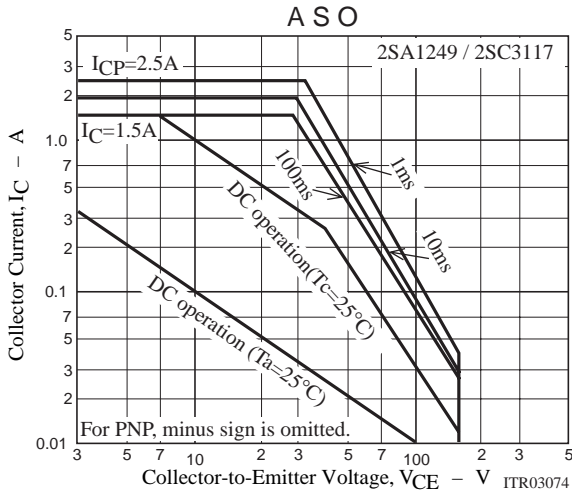
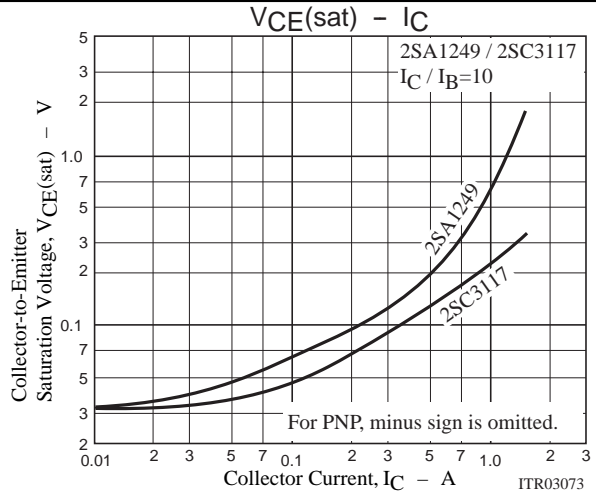
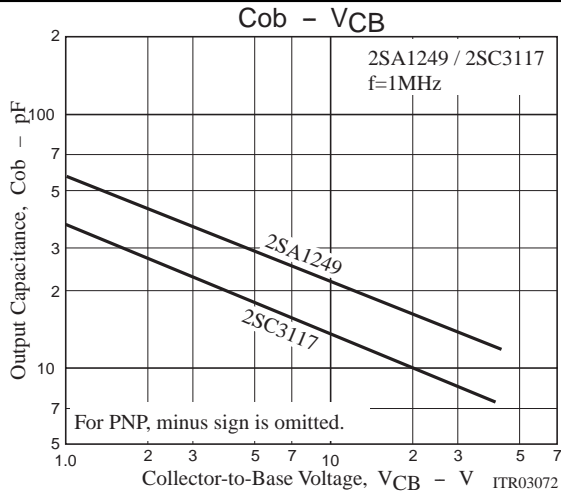
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|-----------------------------|---------|--------|--------|---------|
| | | | min | typ | max | |
| Output Capacitance | C_{ob} | $V_{CB}=(-)10V, f=1MHz$ | | (22) | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=(-)500mA, I_B=(-)50mA$ | | (-0.2) | (-0.5) | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=(-)500mA, I_B=(-)50mA$ | | 0.13 | 0.45 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=(-)10\mu A, I_E=0$ | (-180) | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=(-)1mA, R_{BE}=\infty$ | (-160) | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=(-)10\mu A, I_C=0$ | (-6) | | | V |
| Turn-ON Time | t_{on} | See Specified Test Circuit | | 0.04 | | μs |
| Storage Time | t_{stg} | See Specified Test Circuit | | (0.7) | 1.2 | μs |
| Fall Time | t_f | See Specified Test Circuit | | (0.04) | 0.08 | μs |



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