



2SA1258/2SC3144

60V/3A for High-Speed Drivers Applications

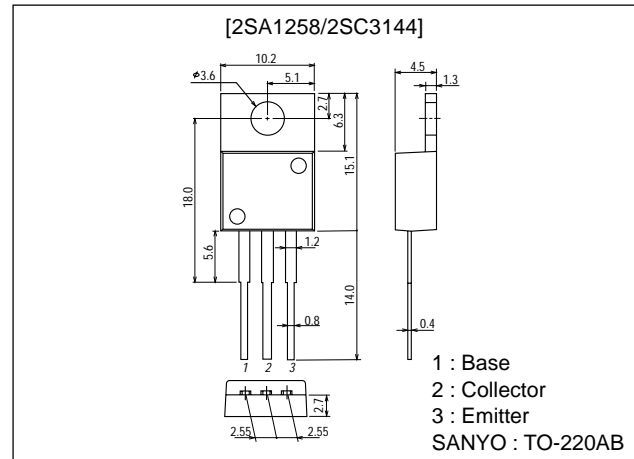
Features

- High f_T .
- High switching speed.
- Wide ASO.

Package Dimensions

unit:mm

2010C



() : 2SA1258

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CB0} | | (-)70 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | (-)60 | V |
| Emitter-to-Base Voltage | V_{EBO} | | (-)5 | V |
| Collector Current | I_C | | (-)3 | A |
| Collector Current (Pulse) | I_{CP} | | (-)5 | A |
| Collector Dissipation | P_C | | 1.75 | W |
| | | $T_c=25^\circ\text{C}$ | 20 | W |
| Junction Temperature | T_J | | 125 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +125 | $^\circ\text{C}$ |

Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|---|---------|---------------|--------|------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = (-)40\text{V}, I_E = 0$ | | | (-)0.1 | mA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = (-)5\text{V}, I_C = 0$ | | | (-)3 | mA |
| DC Current Gain | h_{FE} | $V_{CE} = (-)2\text{V}, I_C = (-)1.5\text{A}$ | 2000 | 5000 | | |
| Gain-Bandwidth Product | f_T | $V_{CE} = (-)5\text{V}, I_C = (-)1.5\text{A}$ | | 200 | | MHz |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = (-)1.5\text{A}, I_B = (-)3\text{mA}$ | | (-1.0) 0.9 | (-)1.5 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = (-)1.5\text{A}, I_B = (-)3\text{mA}$ | | | (-)2.0 | V |

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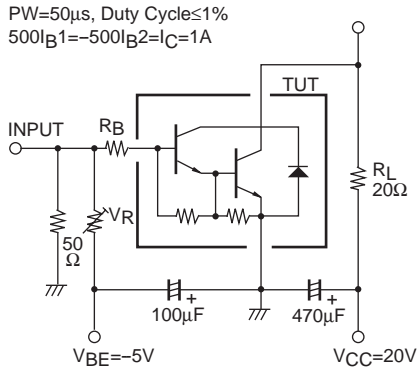
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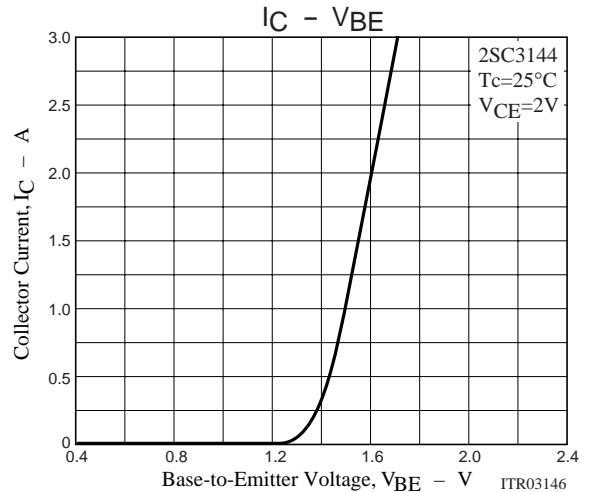
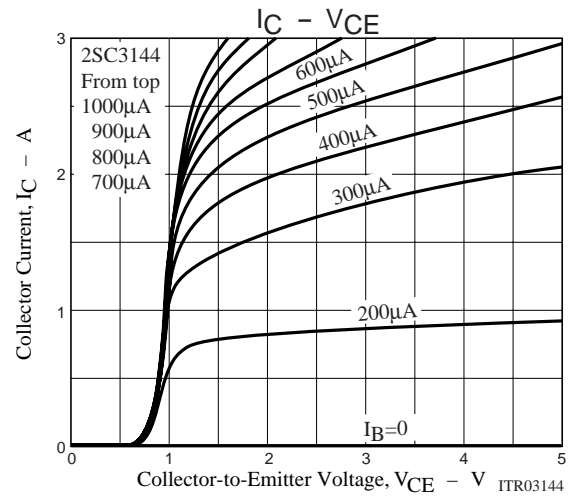
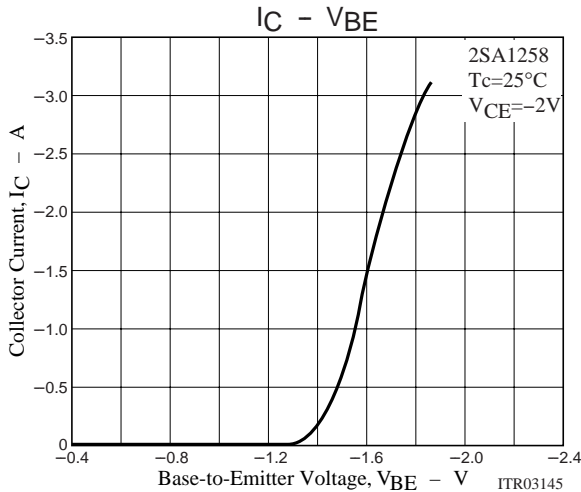
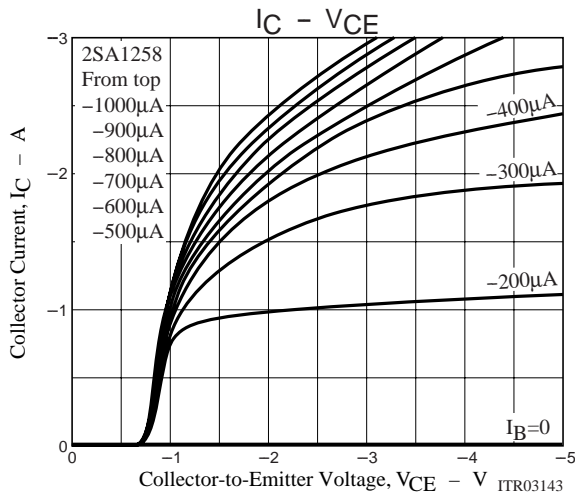
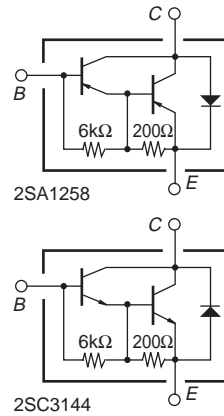
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|------------------------------|---------|--------------|-----|---------|
| | | | min | typ | max | |
| Collector-to-Base Saturation Voltage | $V_{(BR)CBO}$ | $I_C=(-)5mA, I_E=0$ | (-)70 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=(-)50mA, R_{BE}=\infty$ | (-)60 | | | V |
| Rise Time | t_{on} | See specified Test Circuit | | 0.3 | | μs |
| Storage Time | t_{stg} | See specified Test Circuit | | (1.3) 1.2 | | μs |
| Fall Time | t_f | See specified Test Circuit | | 0.2 | | μs |

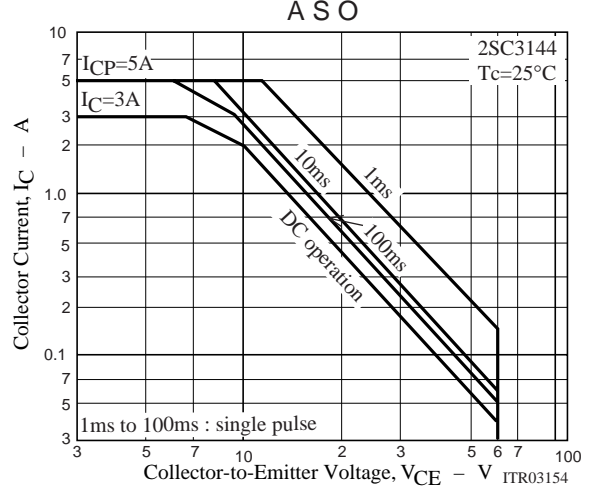
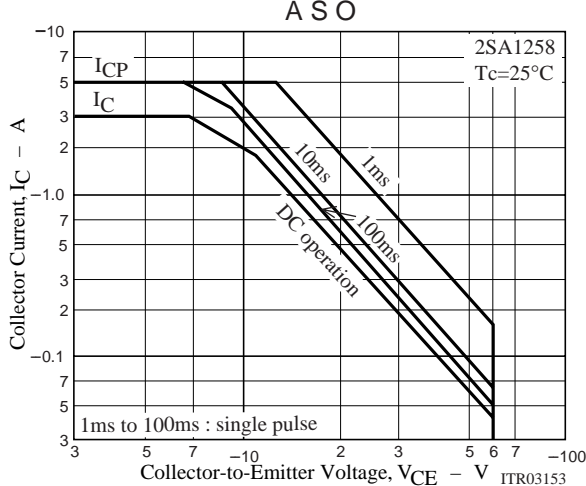
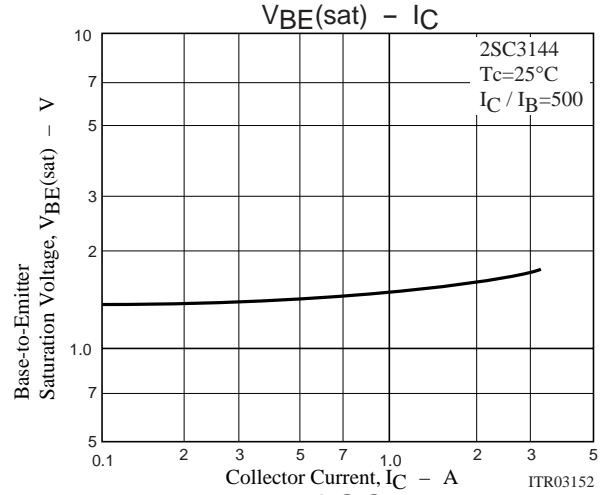
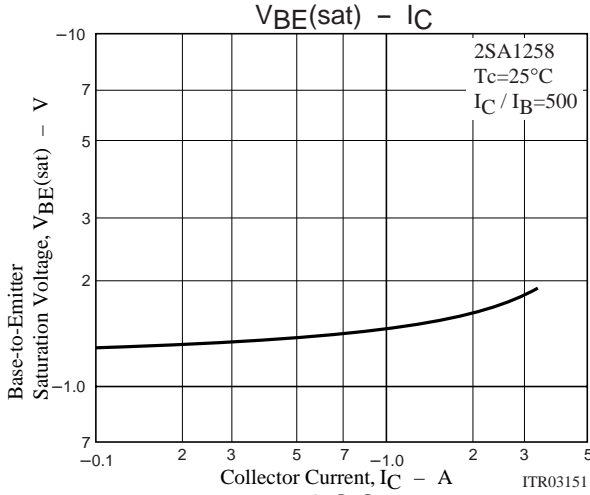
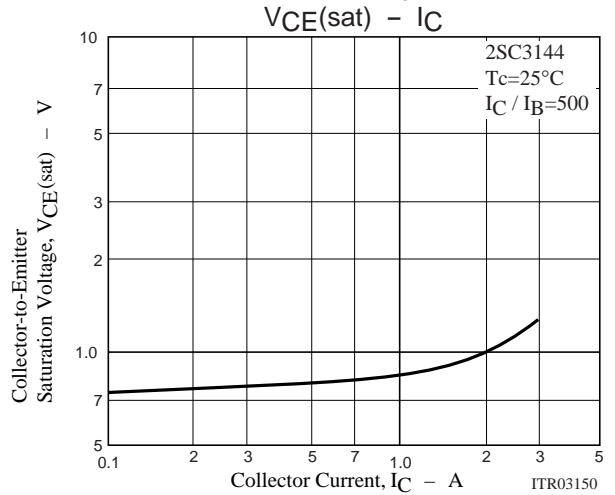
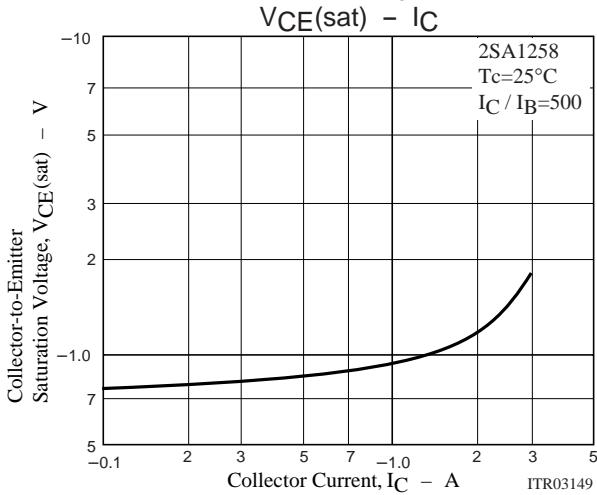
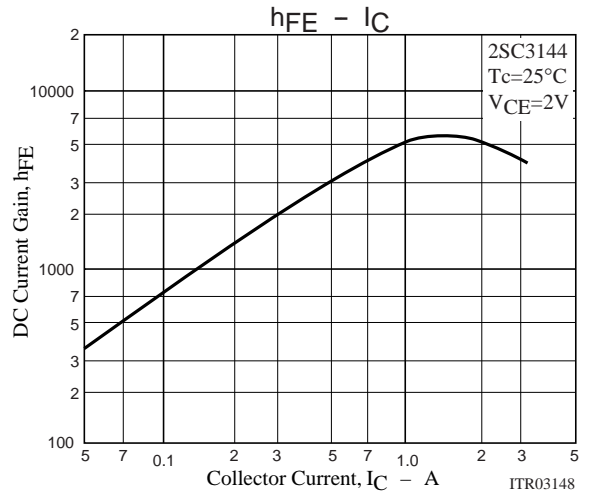
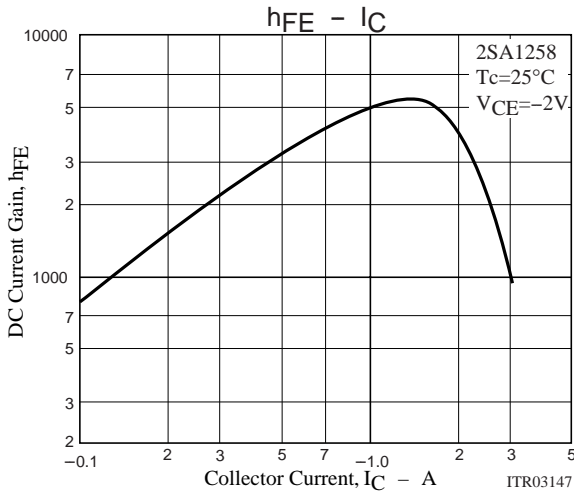
Specified Test Circuit (for PNP, the polarity is reversed)



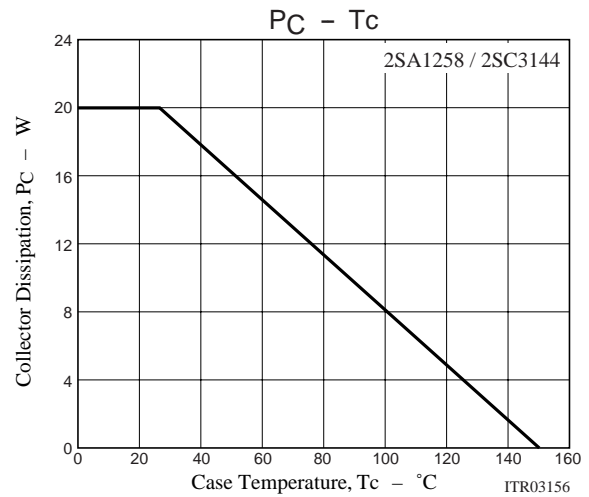
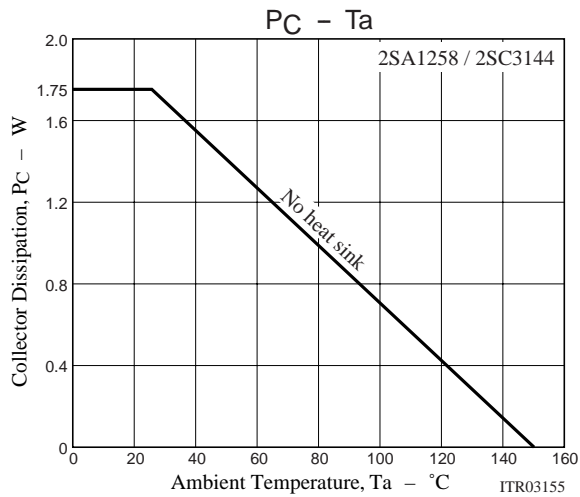
Electrical Connection



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