



2SA1380/2SC3502

Ultrahigh-Definition CRT Display, Video Output Applications

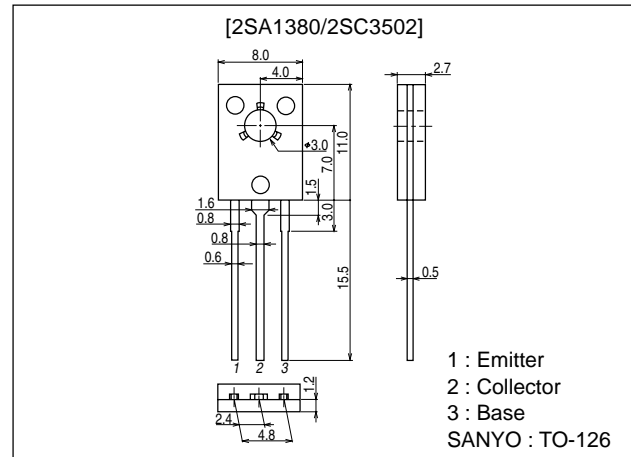
Features

- High breakdown voltage : $V_{CE0} \geq 200V$.
- Small reverse transfer capacitance and excellent high-frequency characteristics
: $C_{re} = 1.2pF$ (NPN), $1.7pF$ (PNP), $V_{CB} = 30V$.
- Adoption of FBET process

Package Dimensions

unit:mm

2009B



() : 2SA1380

Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|--------------------|-------------|------------|
| Collector-to-Base Voltage | V_{CB0} | | (-)200 | V |
| Collector-to-Emitter Voltage | V_{CE0} | | (-)200 | V |
| Emitter-to-Base Voltage | V_{EB0} | | (-)5 | V |
| Collector Current | I_C | | (-)100 | mA |
| Collector Current (Pulse) | I_{CP} | | (-)200 | mA |
| Collector Dissipation | P_C | | 1.2 | W |
| | | $T_c = 25^\circ C$ | 5 | W |
| Junction Temperature | T_j | | 150 | $^\circ C$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ C$ |

Electrical Characteristics at $T_a = 25^\circ C$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|-----------|----------------------------------|---------|-----|--------|---------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = (-)150V, I_E = 0$ | | | (-)0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = (-)4V, I_C = 0$ | | | (-)0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE} = (-)10V, I_C = (-)10mA$ | 40* | | 320* | |
| Gain-Bandwidth Product | f_T | $V_{CE} = (-)30V, I_C = (-)10mA$ | | 150 | | MHz |

* : The 2SA1380/2SC3502 are classified by 10mA h_{FE} as follows :

Continued on next page.

| Rank | C | D | E | F |
|----------|----------|-----------|------------|------------|
| h_{FE} | 40 to 80 | 60 to 120 | 100 to 200 | 160 to 320 |

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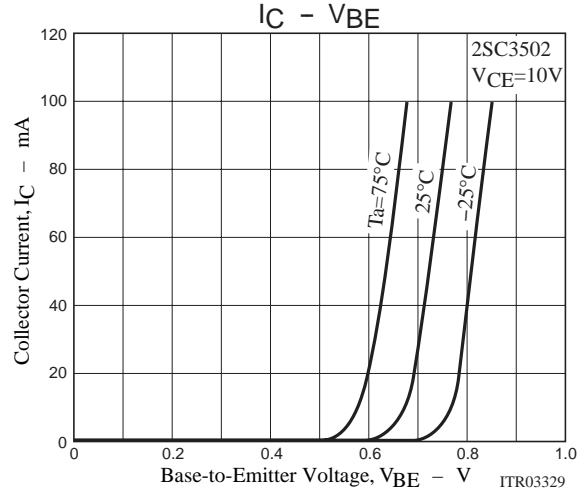
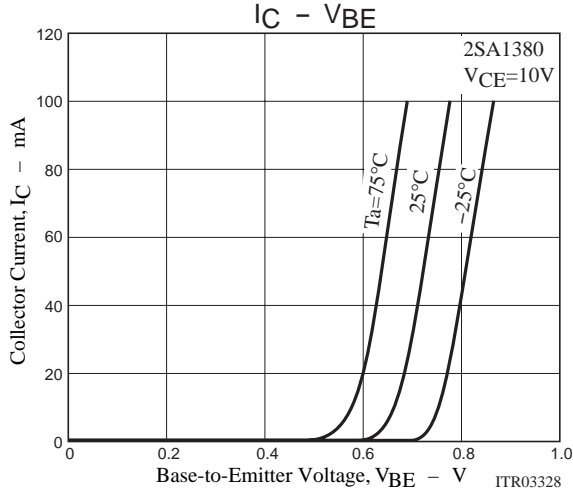
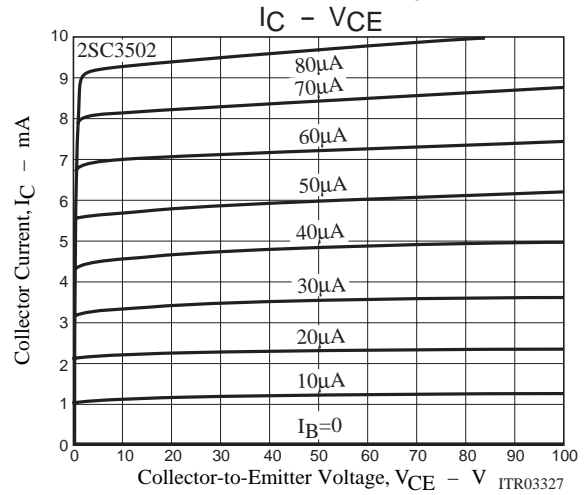
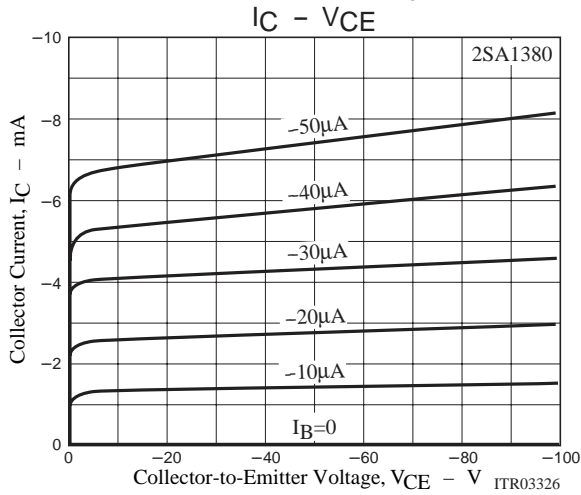
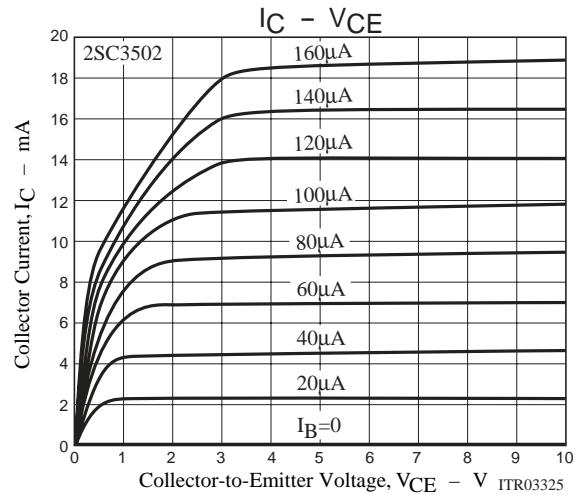
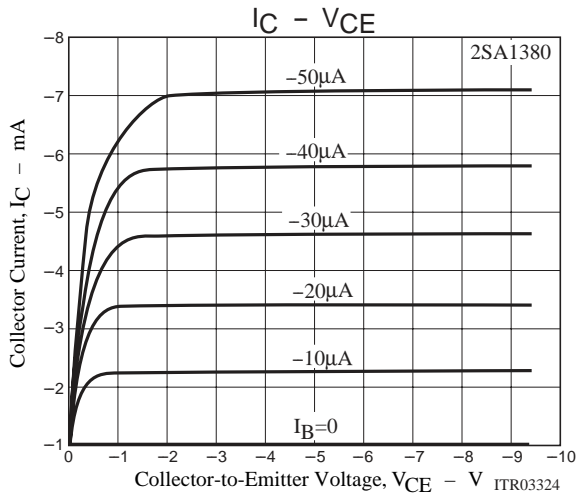
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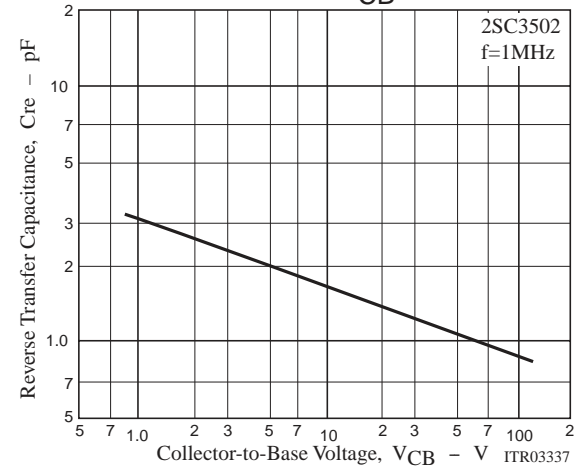
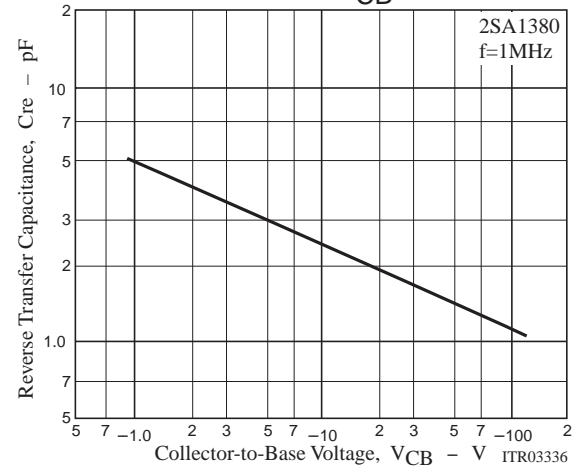
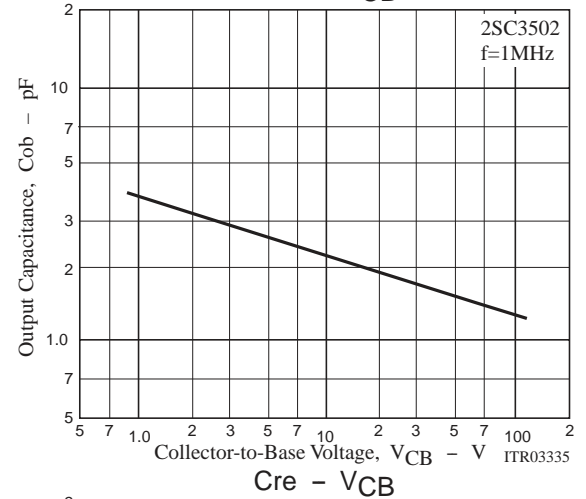
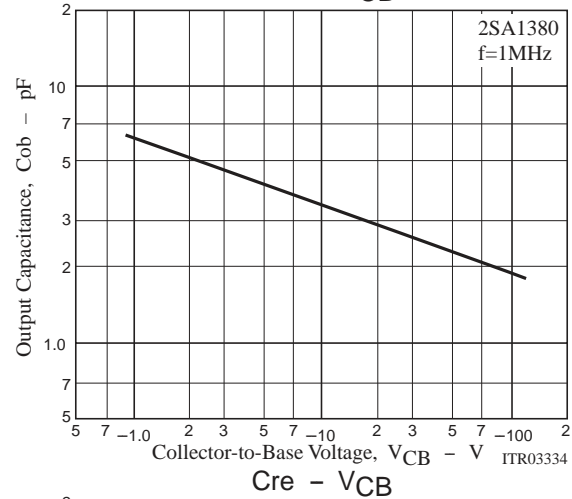
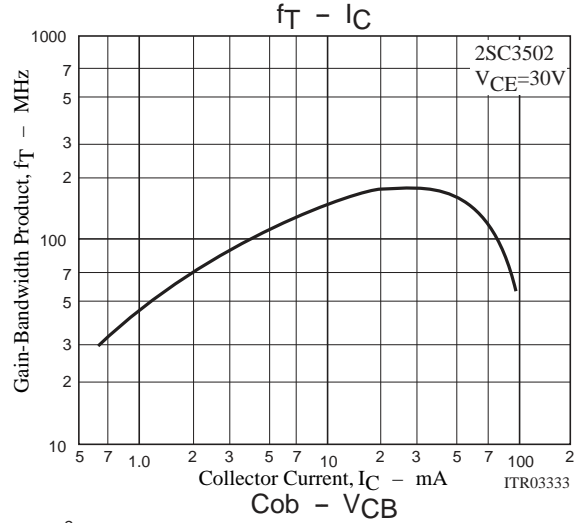
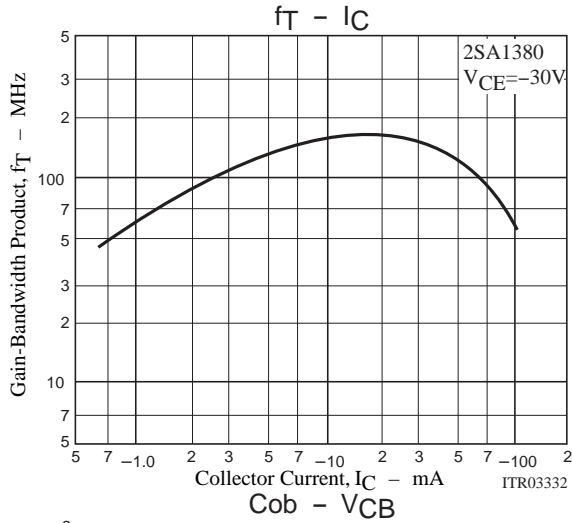
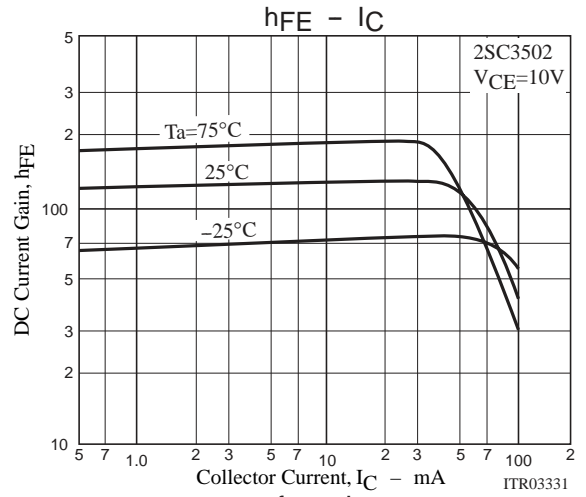
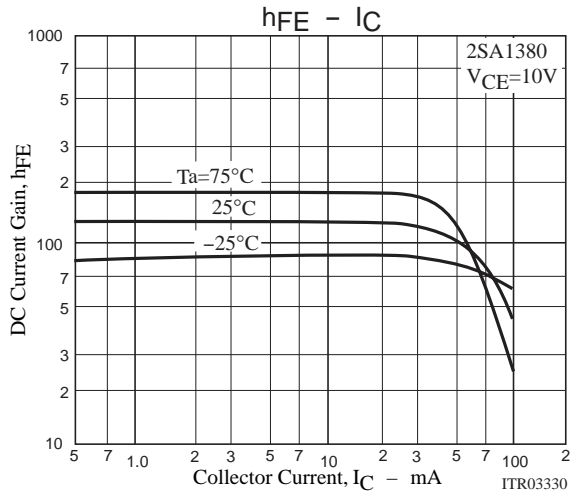
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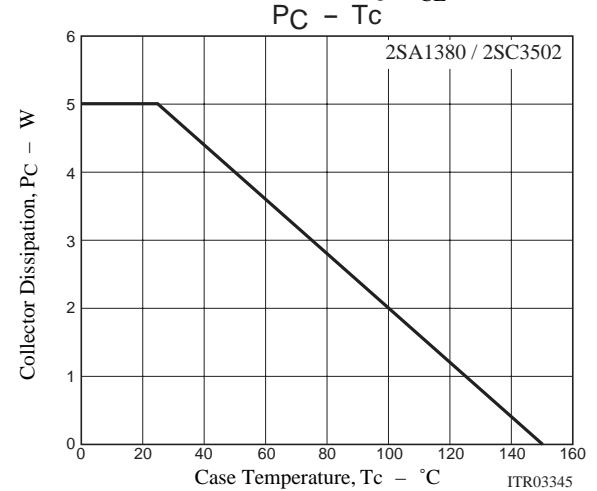
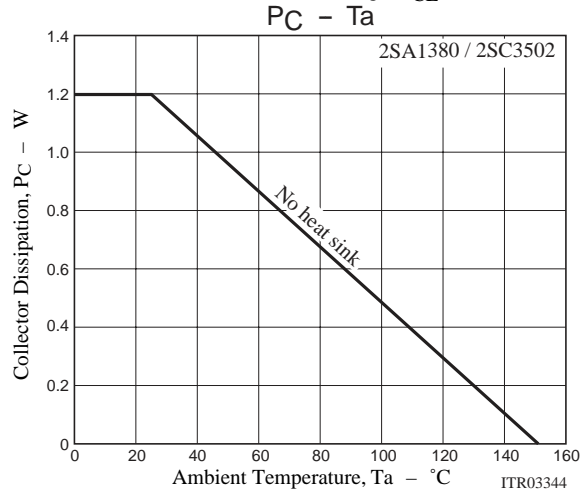
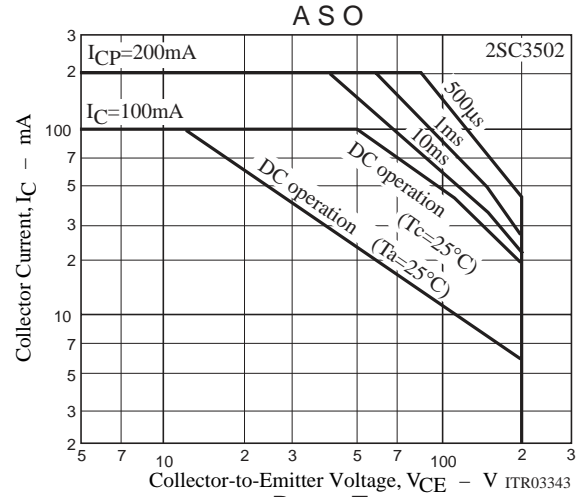
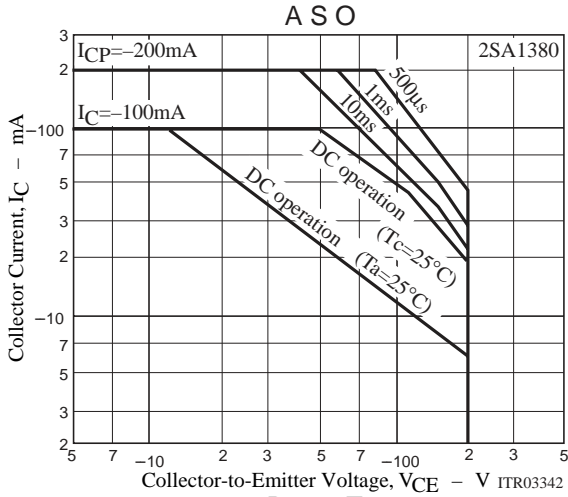
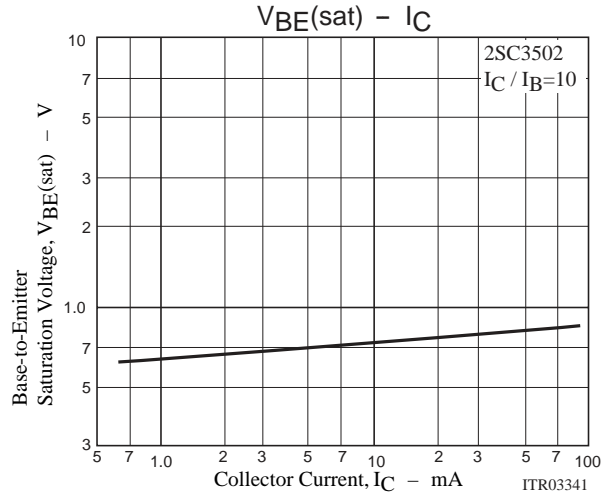
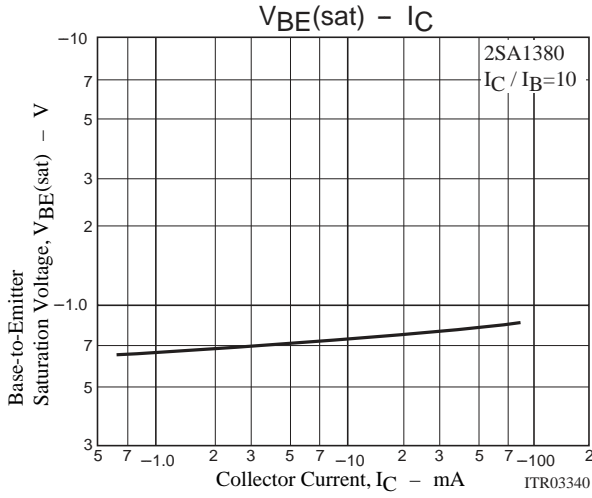
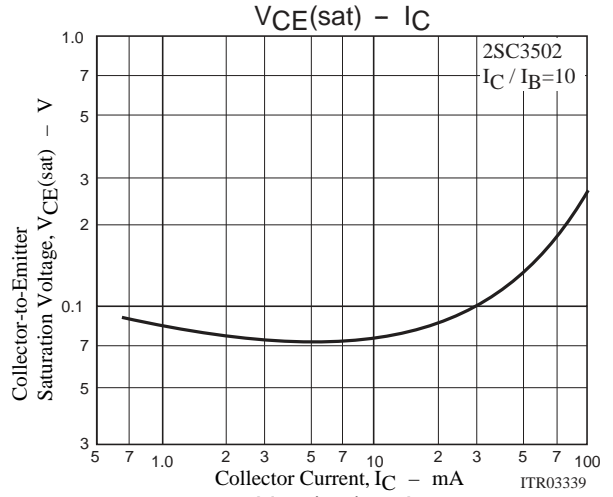
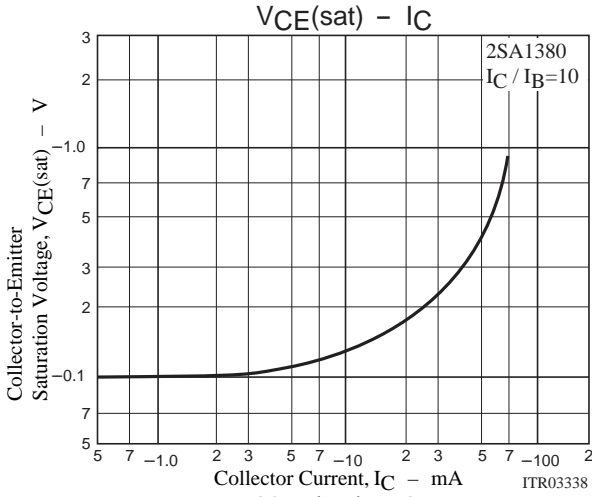
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-----------------------------------------|---------------|-----------------------------|---------|-------|--------|------|
| | | | min | typ | max | |
| Output Capacitance | C_{ob} | $V_{CB}=(-)30V, f=1MHz$ | | 1.7 | | pF |
| | | | | (2.6) | | pF |
| Reverse Transfer Capacitance | C_{re} | $V_{CB}=(-)30V, f=1MHz$ | | 1.2 | | pF |
| | | | | (1.7) | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=(-)20mA, I_B=(-)2mA$ | | | (-0.6) | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=(-)20mA, I_B=(-)2mA$ | | | (-1.0) | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=(-)10\mu A, I_E=0$ | (-200) | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=(-)1mA, R_{BE}=\infty$ | (-200) | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=(-)10\mu A, I_C=0$ | (-5) | | | V |



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