Ordering number: EN 2254

SANYO No.2254

# 2SA1480/2SC3790

PNP/NPN Epitaxial Planar Type
Silicon Transistors

## HIGH-DEFINITION CRT DISPLAY VIDEO OUTPUT APPLICATIONS

**Features**

- High breakdown voltage ($V_{CEO} \geqq 300V$)
- Small reverse transfer capacitance and excellent high frequency chracteristic $c_{re}$=1.8pF(NPN), 2.3pF(PNP)
- Adoption of MBIT process

( ): 2SA1480

**Absolute Maximum Ratings** at Ta=25°C

| | | | | unit |
|---|---|---|---|---|
| Collector-to-Base Voltage | $V_{CBO}$ | | (-)300 | V |
| Collector-to-Emitter Voltage | $V_{CEO}$ | | (-)300 | V |
| Emitter-to-Base Voltage | $V_{EBO}$ | | (-)5 | V |
| Collector Current | $I_C$ | | (-)100 | mA |
| Peak Collector Current | $i_{cp}$ | | (-)200 | mA |
| Collector Dissipation | $P_C$ | | 1.5 | W |
| | | Tc=25°C | 7 | W |
| Junction Temperature | Tj | | 150 | °C |
| Storage Temperature | Tstg | | -55 to +150 | °C |

**Electrical Characteristics** at Ta=25°C

| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$=(-)200V, $I_E$=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 |
| Output Capacitance | $c_{ob}$ | $V_{CB}$=(-)30V, f=1MHz | | 2.6 | | pF |
| | | | | (3.1) | | |
| Reverse Transfer Capacitance | $c_{re}$ | $V_{CB}$=(-)30V, f=1MHz | | 1.8 | | pF |
| | | | | (2.3) | | |
| C-E Saturation Voltage | $V_{CE(sat)}$ | $I_C$=(-)20mA, $I_B$=(-)2mA | | | (-)0.6 | V |
| B-E Saturation Voltage | $V_{BE(sat)}$ | $I_C$=(-)20mA, $I_B$=(-)2mA | | | (-)1.0 | V |

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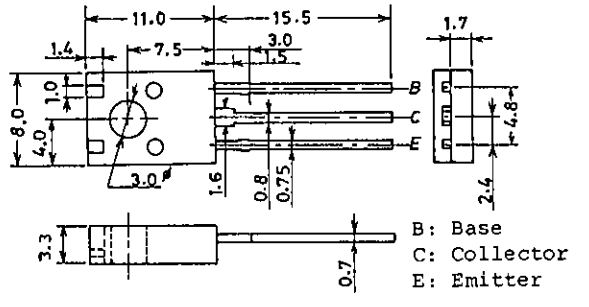
**Package Dimensions 2042A**
(unit: mm)




B: Base
C: Collector
E: Emitter

SANYO: TO126ML

SANYO Electric Co.,Ltd. Semiconductor Business Headquarters
TOKYO OFFICE Tokyo Bldg., 1-10,1 Chome, Ueno, Taito-ku, TOKYO, 110 JAPAN

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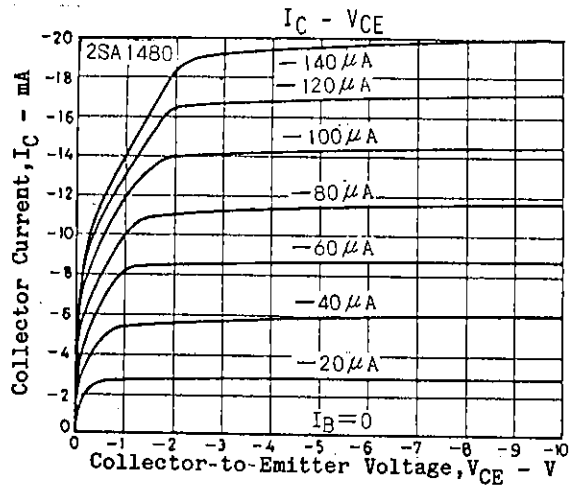
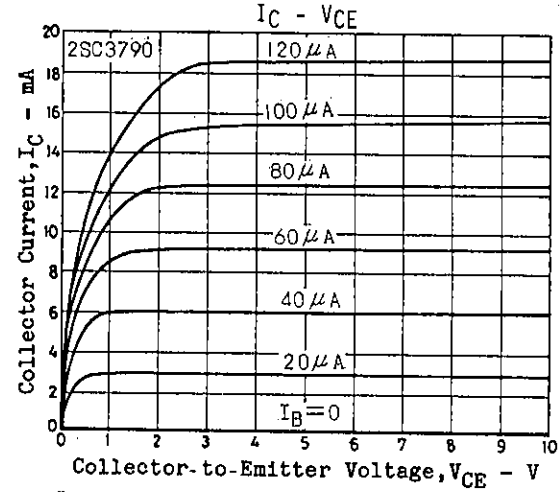
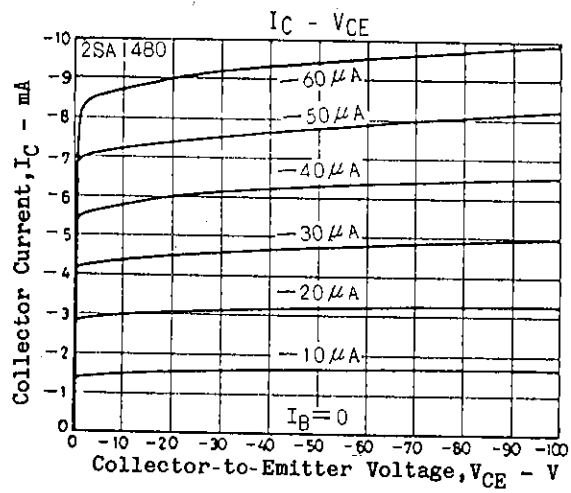
| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| C-B Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$=(-)10μA, $I_E$=0 | (-)300 | | | V |
| C-E Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$=(-)1mA, $R_{BE}$=∞ | (-)300 | | | V |
| E-B Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$=(-)10μA, $I_C$=0 | (-)5 | | | V |

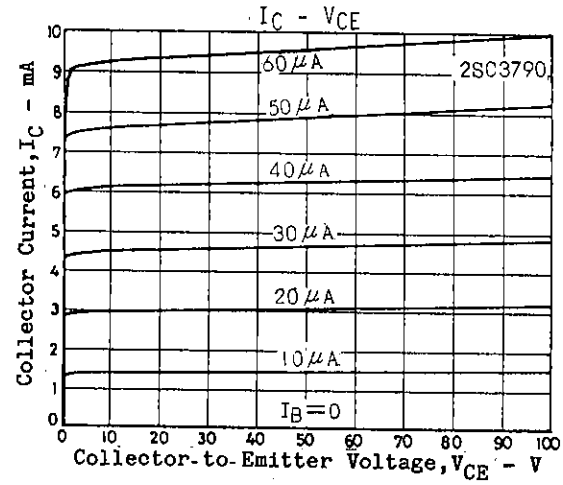
*: The 2SA1480/2SC3790 are classified by 10mA $h_{FE}$ as follows:

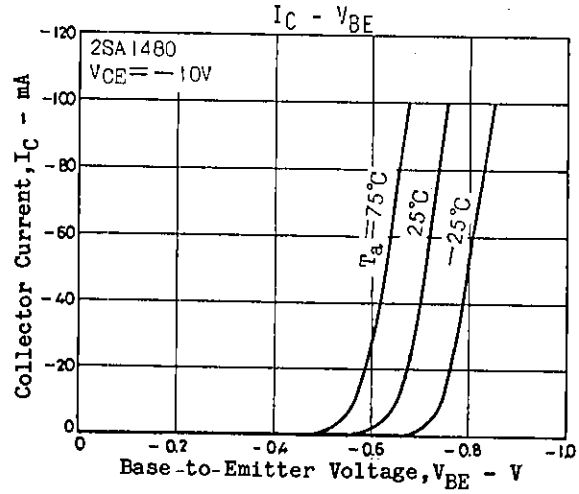
| | | | |
|---|---|---|---|
| 40 C 80 | 60 D 120 | 100 E 200 | 160 F 320 |

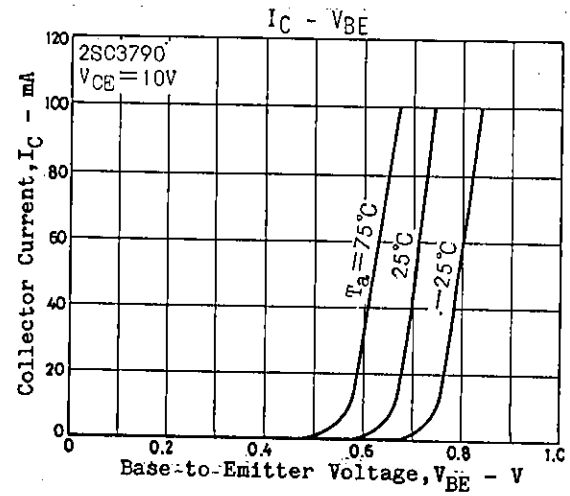


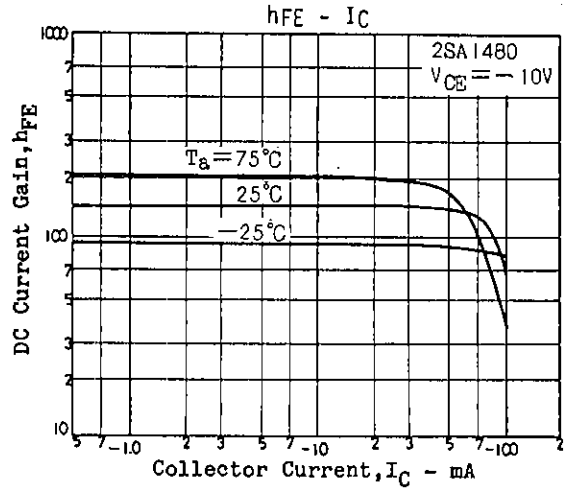



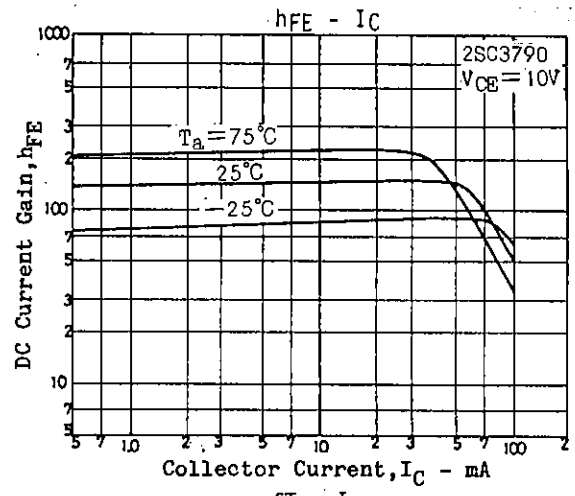



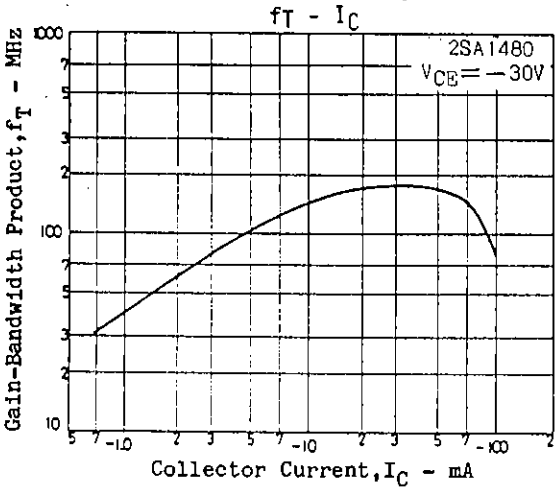



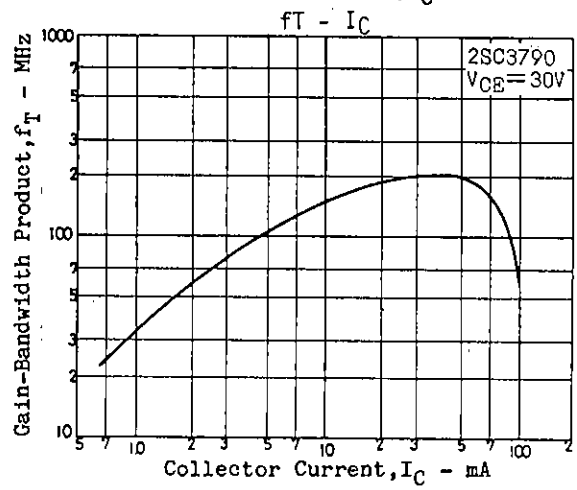



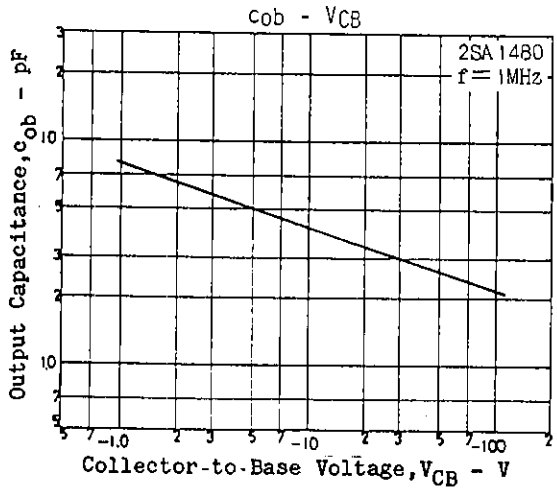



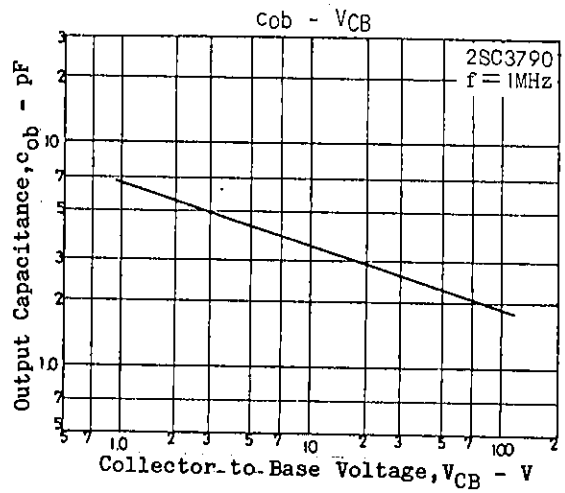

hFE - IC
2SA1480
VCE=−10V
Ta=75°C
25°C
−25°C
DC Current Gain, hFE
Collector Current, IC - mA

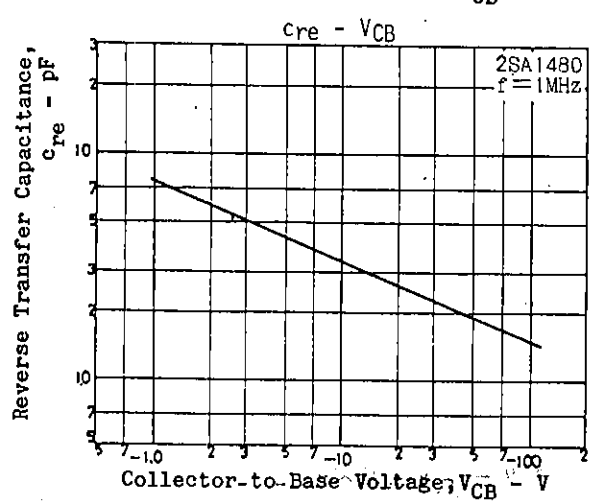

hFE - IC
2SC3790
VCE=10V
Ta=75°C
25°C
−25°C
DC Current Gain, hFE
Collector Current, IC - mA

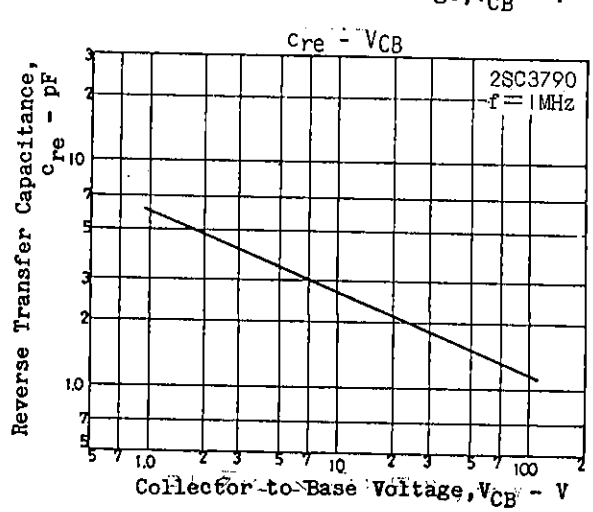

fT - IC
2SA1480
VCE=−30V
Gain-Bandwidth Product, fT - MHz
Collector Current, IC - mA

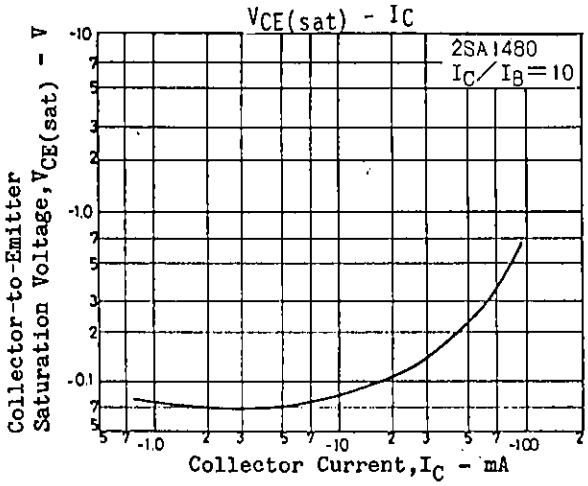

fT - IC
2SC3790
VCE=30V
Gain-Bandwidth Product, fT - MHz
Collector Current, IC - mA

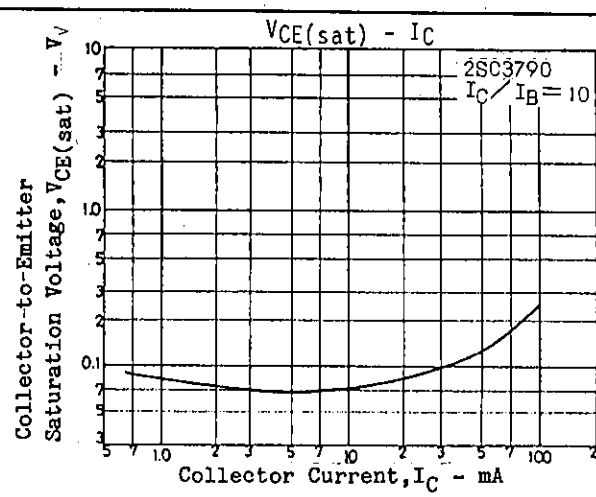

Cob - VCB
2SA1480
f=1MHz
Output Capacitance, Cob - pF
Collector-to-Base Voltage, VCB - V

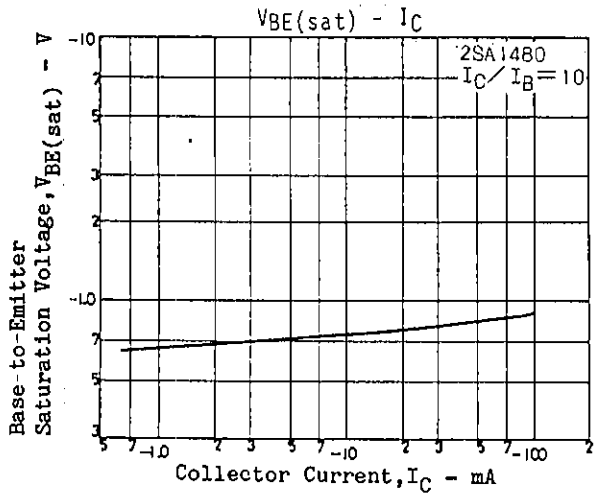

Cob - VCB
2SC3790
f=1MHz
Output Capacitance, Cob - pF
Collector-to-Base Voltage, VCB - V

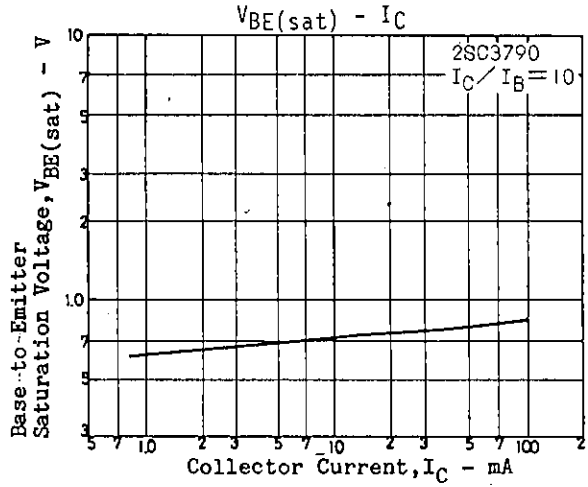

Cre - VCB
2SA1480
f=1MHz
Reverse Transfer Capacitance, Cre - pF
Collector-to-Base Voltage, VCB - V

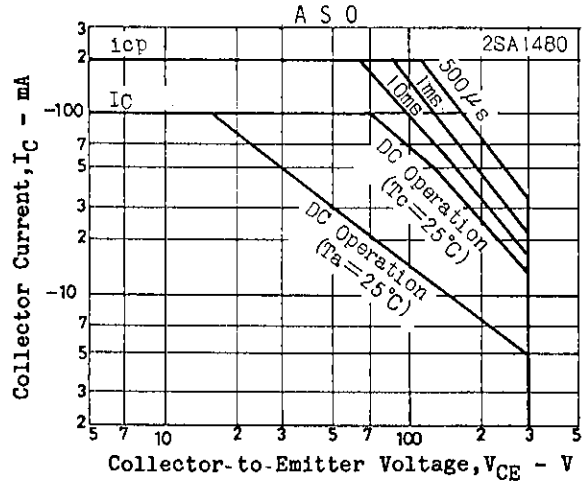

Cre - VCB
2SC3790
f=1MHz
Reverse Transfer Capacitance, Cre - pF
Collector-to-Base Voltage, VCB - V

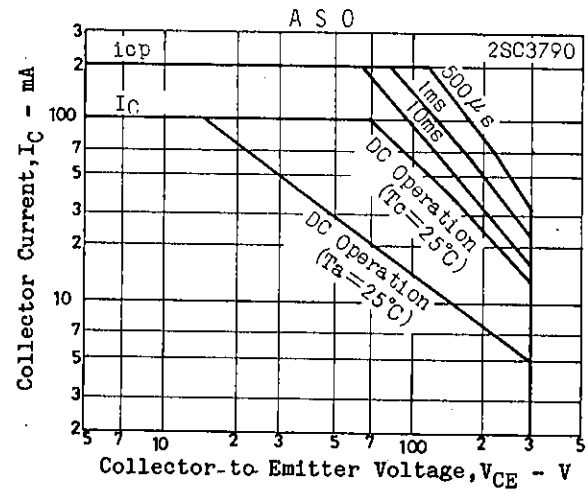

VCE(sat) - IC
2SA1480
IC/IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) - V
Collector Current, IC - mA

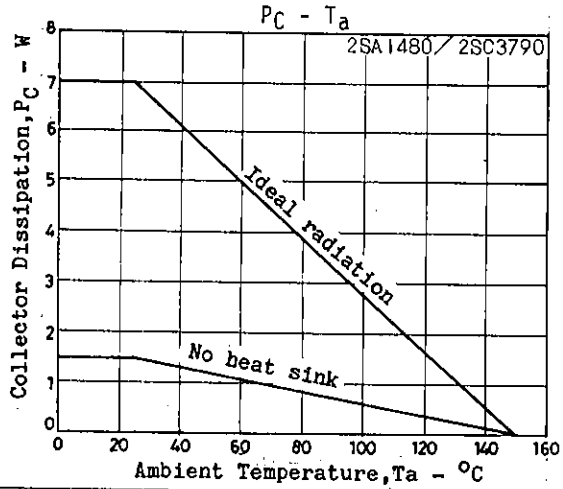

VCE(sat) - IC
2SC3790
IC/IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) - V
Collector Current, IC - mA


VBE(sat) - IC
2SA1480
IC/IB=10
Base-to-Emitter Saturation Voltage, VBE(sat) - V
Collector Current, IC - mA


VBE(sat) - IC
2SC3790
IC/IB=10
Base-to-Emitter Saturation Voltage, VBE(sat) - V
Collector Current, IC - mA


A S O
2SA1480
icp
IC
500μs
1ms
10ms
DC Operation (Tc=25°C)
DC Operation (Ta=25°C)
Collector Current, IC - mA
Collector-to-Emitter Voltage, VCE - V


A S O
2SC3790
icp
IC
500μs
1ms
10ms
DC Operation (Tc=25°C)
DC Operation (Ta=25°C)
Collector Current, IC - mA
Collector-to-Emitter Voltage, VCE - V


PC - Ta
2SA1480/2SC3790
Ideal radiation
No heat sink
Collector Dissipation, PC - W
Ambient Temperature, Ta - °C