Ordering number:EN2254

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1480/2SC3790

High-Definiton CRT Display Video Output Applications

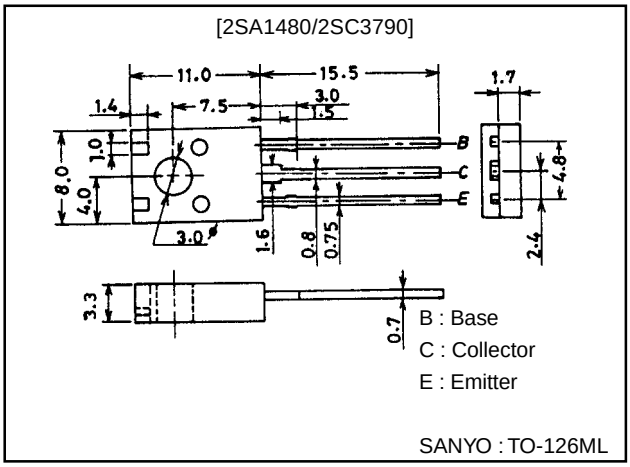
Features

- High breakdown voltage (V_{CEO}≥300V).
- Small reverse transfer capacitance and excellent high frequency characteristic
  : C_{re}=1.8pF (NPN), 2.3pF (PNP).
- Adoption of MBIT process.

Package Dimensions

unit:mm

2042A



( ) : 2SA1480

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
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)		pF
Reverse Transfer Capacitance	C_{re}	V_{CB}=(–)30V, f=1MHz		1.8		pF
				(2.3)		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=(–)10μA, I_E=0	(–)300			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)300			V
Emitter-to-Base Breakdown Votage	$V_{(BR)EBO}$	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

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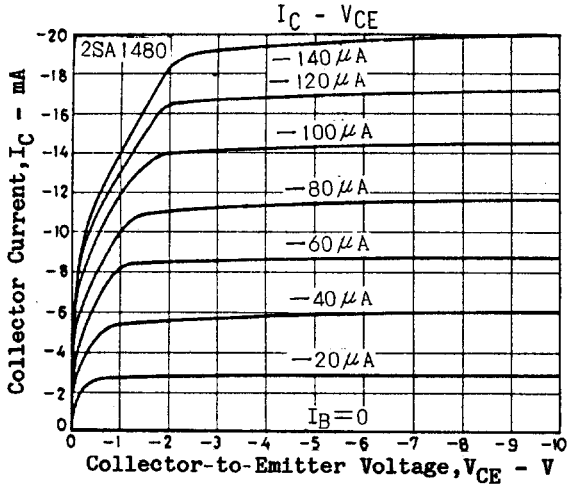
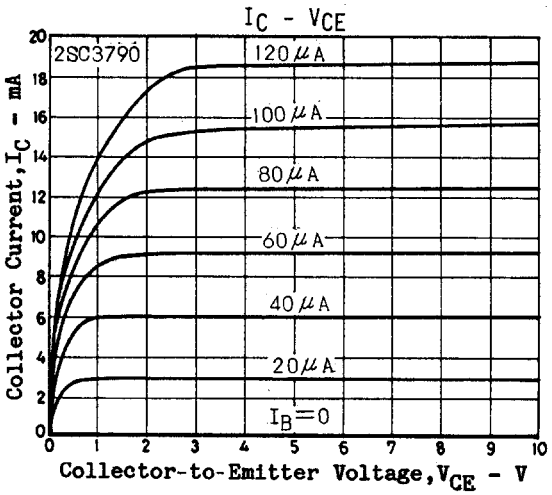
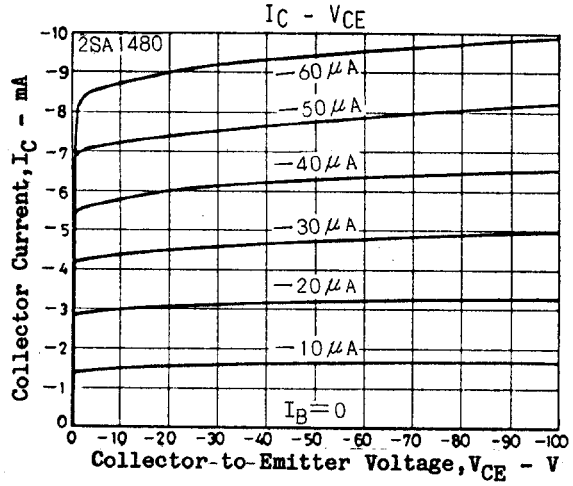
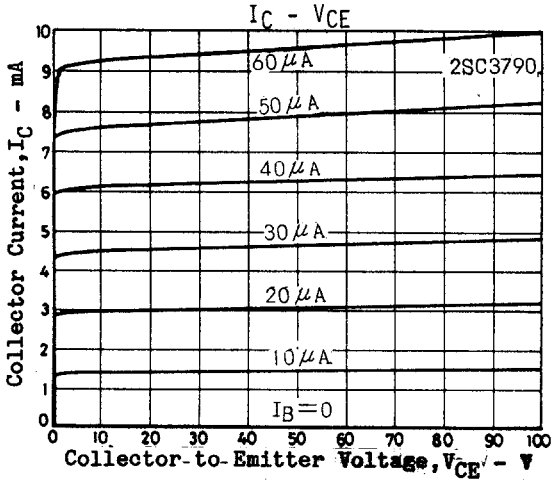
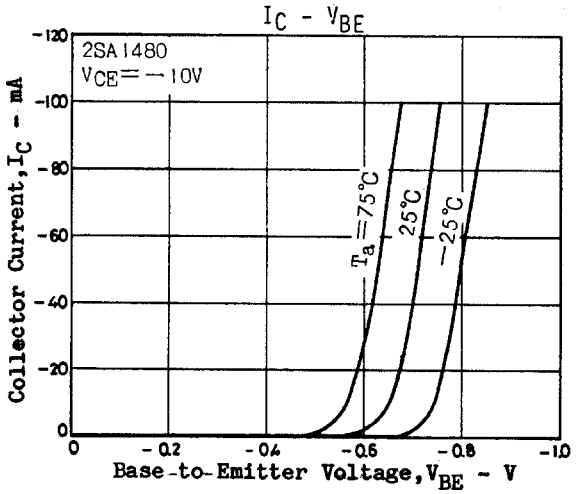
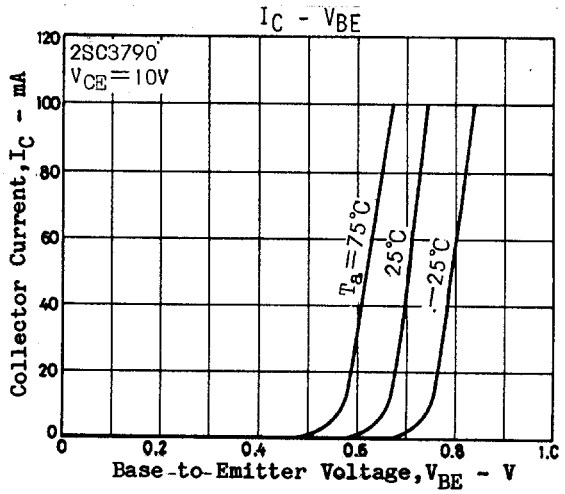

I_C - V_{CE}
2SA1480
−140μA
−120μA
−100μA
−80μA
−60μA
−40μA
−20μA
I_B=0
Collector Current, I_C - mA
Collector-to-Emitter Voltage, V_{CE} - V

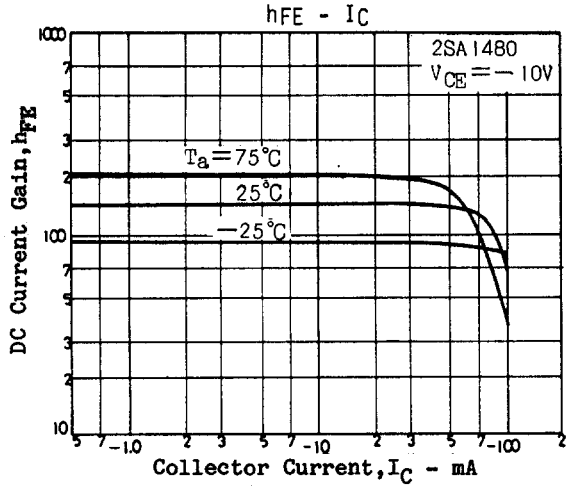

I_C - V_{CE}
2SC3790
120μA
100μA
80μA
60μA
40μA
20μA
I_B=0
Collector Current, I_C - mA
Collector-to-Emitter Voltage, V_{CE} - V

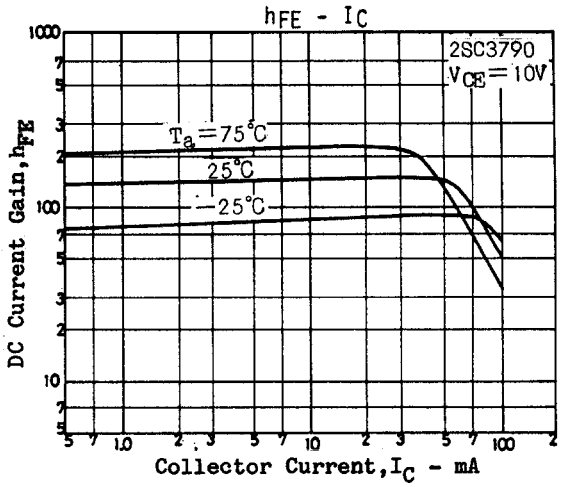

I_C - V_{CE}
2SA1480
−60μA
−50μA
−40μA
−30μA
−20μA
−10μA
I_B=0
Collector Current, I_C - mA
Collector-to-Emitter Voltage, V_{CE} - V

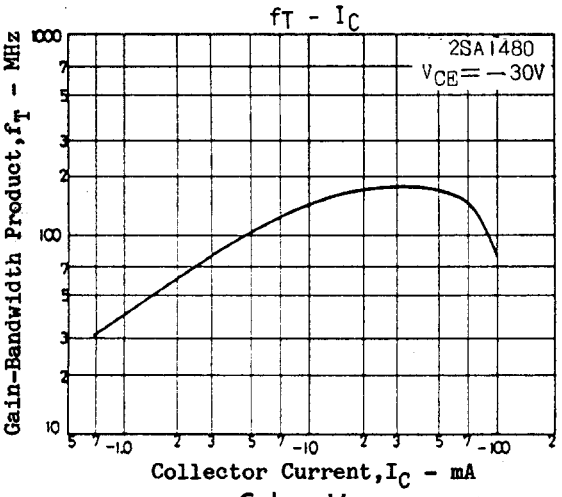

I_C - V_{CE}
2SC3790
60μA
50μA
40μA
30μA
20μA
10μA
I_B=0
Collector Current, I_C - mA
Collector-to-Emitter Voltage, V_{CE} - V

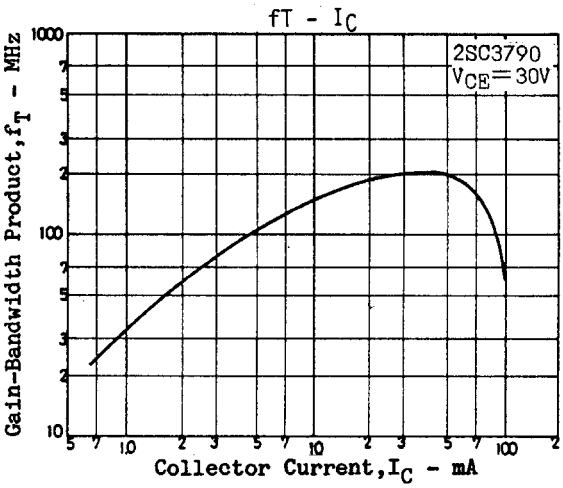

I_C - V_{BE}
2SA1480
V_{CE}=−10V
T_a=75°C
25°C
−25°C
Collector Current, I_C - mA
Base-to-Emitter Voltage, V_{BE} - V

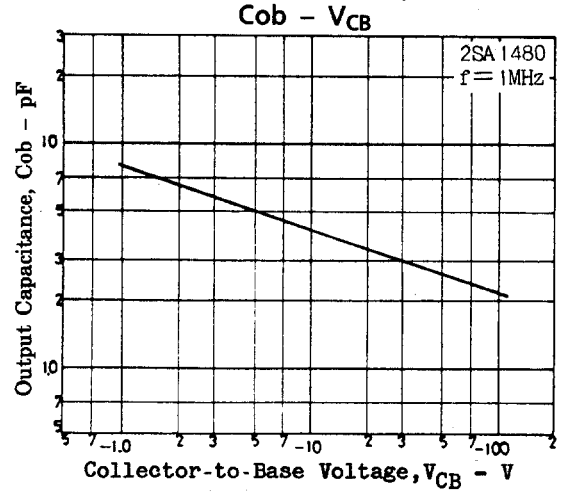

I_C - V_{BE}
2SC3790
V_{CE}=10V
T_a=75°C
25°C
−25°C
Collector Current, I_C - mA
Base-to-Emitter Voltage, V_{BE} - V

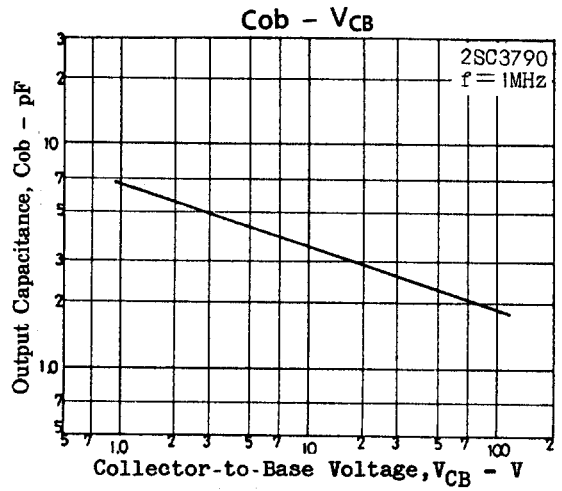

h_{FE} - I_C
2SA1480
V_{CE}=−10V
T_a=75°C
25°C
−25°C
DC Current Gain, h_{FE}
Collector Current, I_C - mA

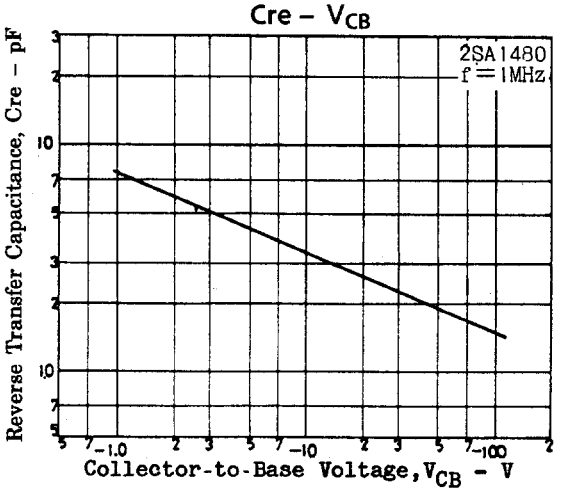

h_{FE} - I_C
2SC3790
V_{CE}=10V
T_a=75°C
25°C
−25°C
DC Current Gain, h_{FE}
Collector Current, I_C - mA

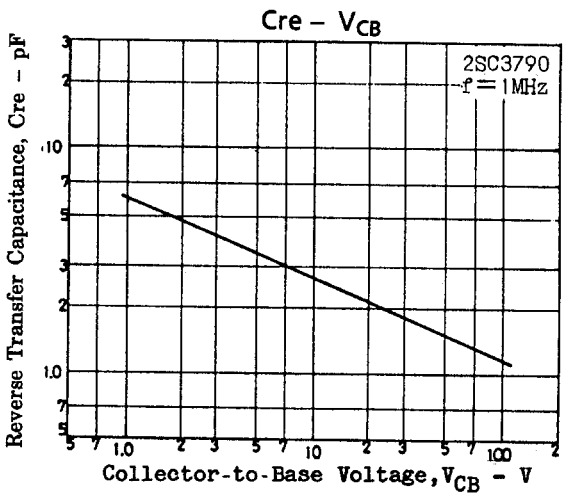

fT - IC
2SA1480
VCE=−30V
Gain-Bandwidth Product, fT - MHz
Collector Current, IC - mA

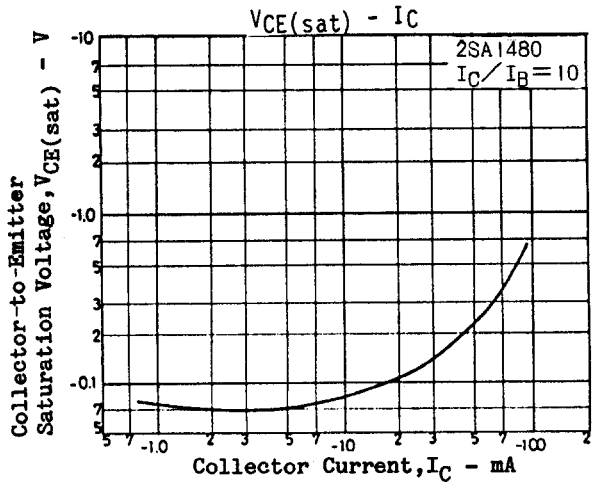

fT - IC
2SC3790
VCE=30V
Gain-Bandwidth Product, fT - MHz
Collector Current, IC - mA

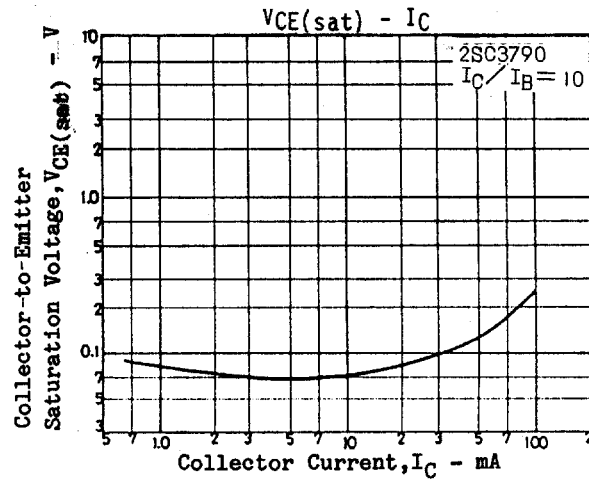

Cob - VCB
2SA1480
f=1MHz
Output Capacitance, Cob - pF
Collector-to-Base Voltage, VCB - V

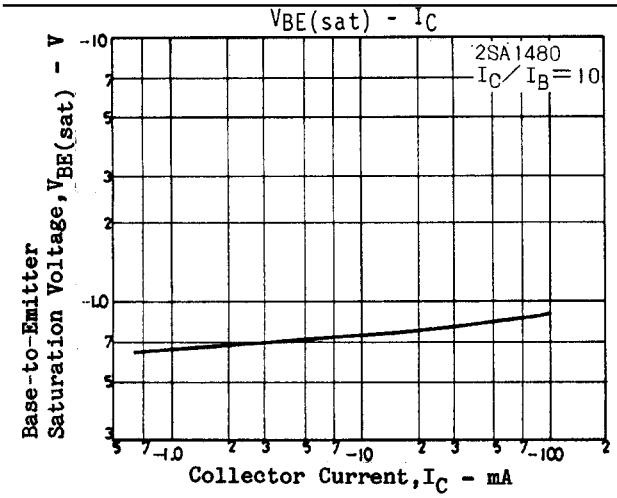

Cob - VCB
2SC3790
f=1MHz
Output Capacitance, Cob - pF
Collector-to-Base Voltage, VCB - V

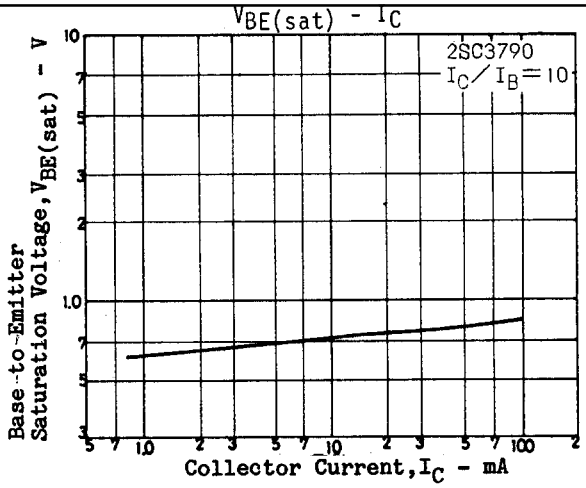

Cre - VCB
2SA1480
f=1MHz
Reverse Transfer Capacitance, Cre - pF
Collector-to-Base Voltage, VCB - V

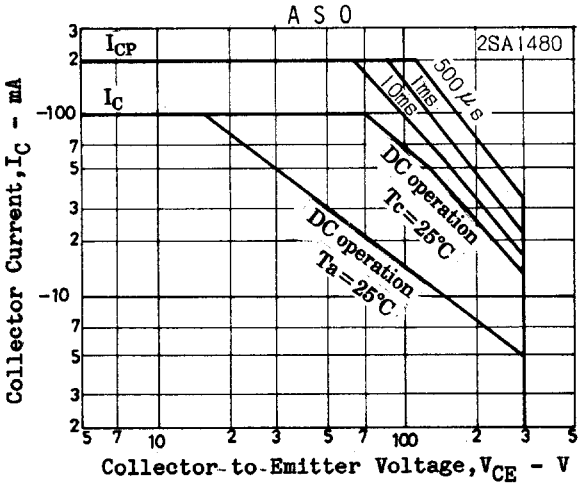

Cre - VCB
2SC3790
f=1MHz
Reverse Transfer Capacitance, Cre - pF
Collector-to-Base Voltage, VCB - V

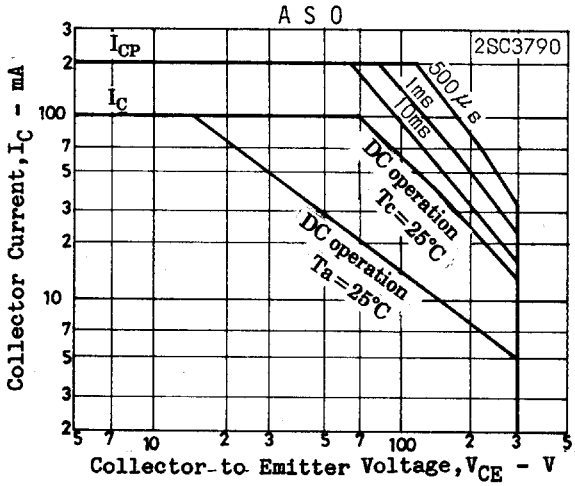

VCE(sat) - IC
2SA1480
IC/IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) - V
Collector Current, IC - mA

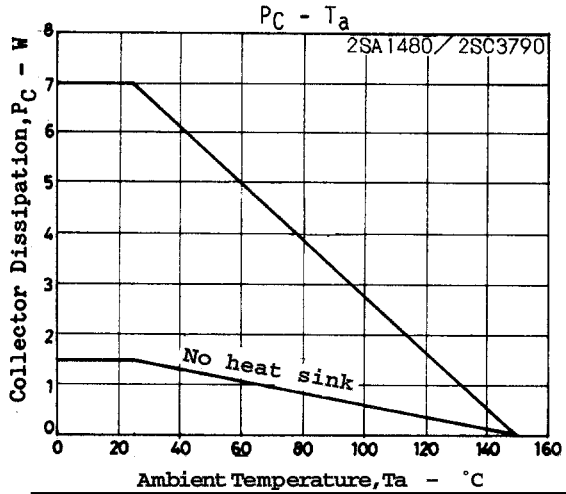

VCE(sat) - IC
2SC3790
IC/IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) - V
Collector Current, IC - mA











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