Ordering number:EN3097

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1710/2SC4490

High-Definition CRT Display Video Output Applications

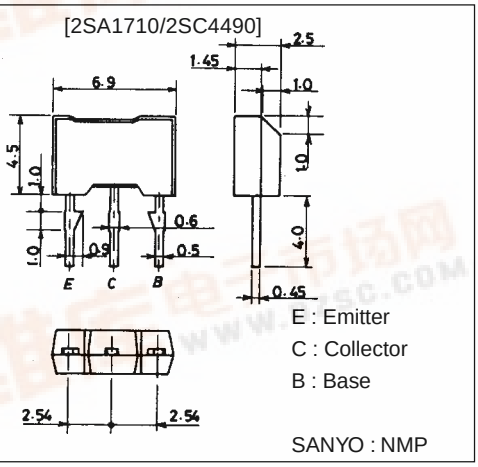
Features

- High breakdown voltage (V_{CEO}≥300V).
- Excellent high frequency characteristic.
- Adoption of MBIT process.

Package Dimensions

unit:mm

2064



( ) : 2SA1710

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
Collector Current (Pulse)	I_{CP}		(–)200	mA
Collector Dissipation	P_C		1	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			(–)100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0			(–)100	nA
DC Current Gain	h_{FE}	V_{CE}=(–)10V, I_C=(–)10mA	70*		280*	
Gain-Bandwidth Product	f_T	V_{CE}=(–)30V, I_C=(–)10mA		70		MHz
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
Output Capacitance	C_{ob}	V_{CB}=(–)30V, f=1MHz		(3.1)		pF
				2.6		pF

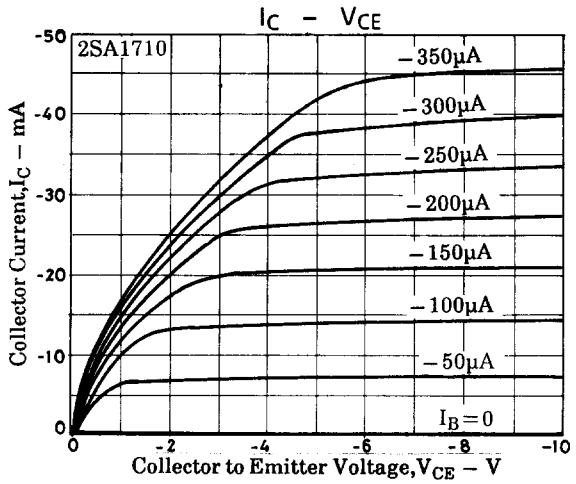
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

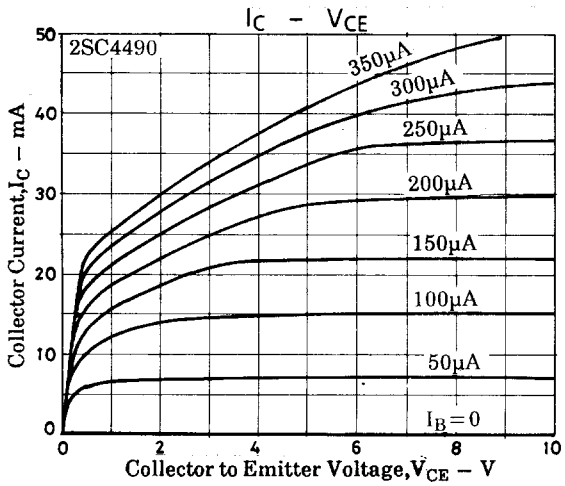
2SA1710/2SC4490

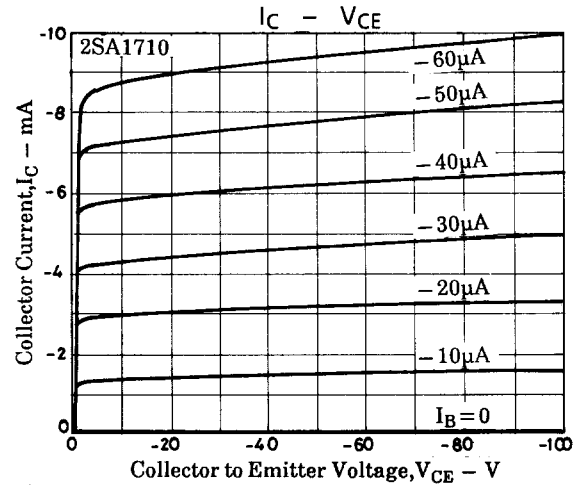
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Reverse Transfer Capacitance	C_{re}	V_{CB}=(–)30V, f=1MHz		(2.3)		pF
				1.8		pF
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)300			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)300			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)10μA, I_C=0	(–)5			V

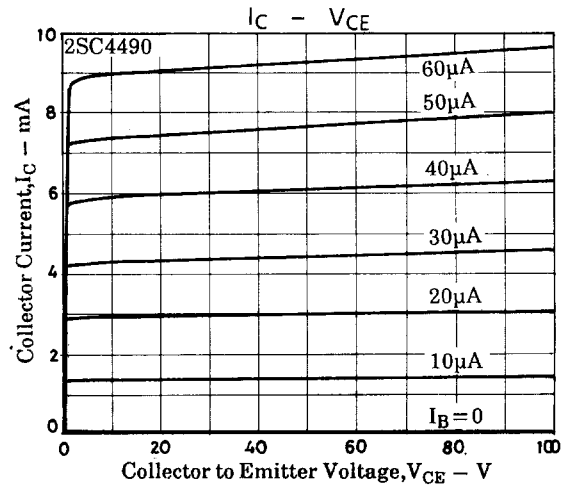
* : The 2SA1710/2SC4490 are classified by 100mA h_{FE} as follows :

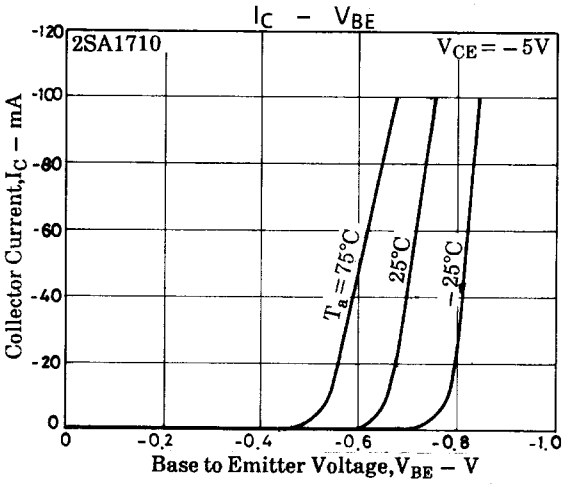
70 Q 140	100 R 200	140 S 280

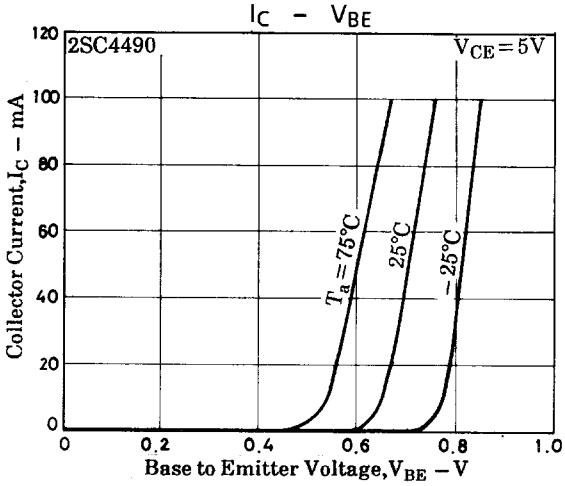


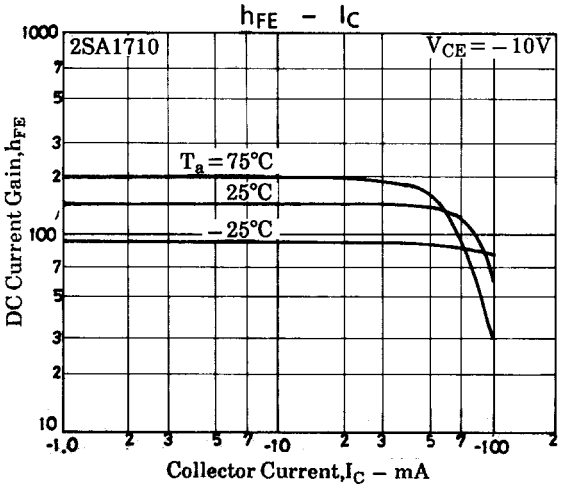


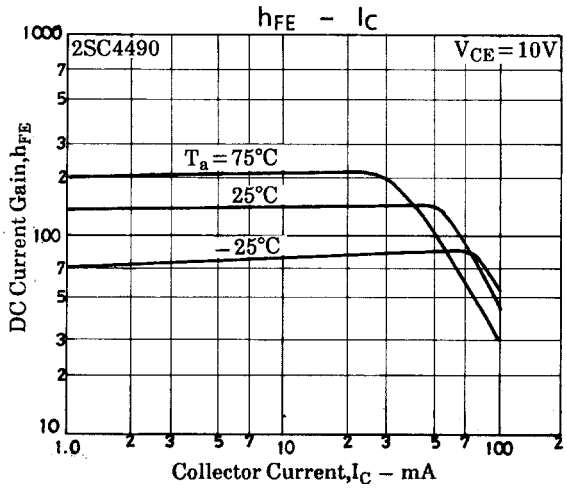


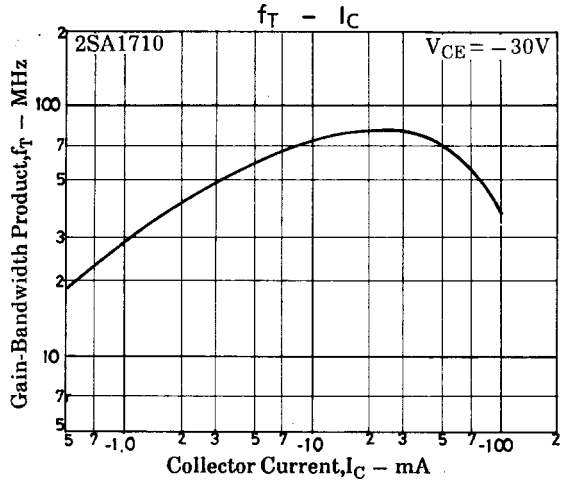


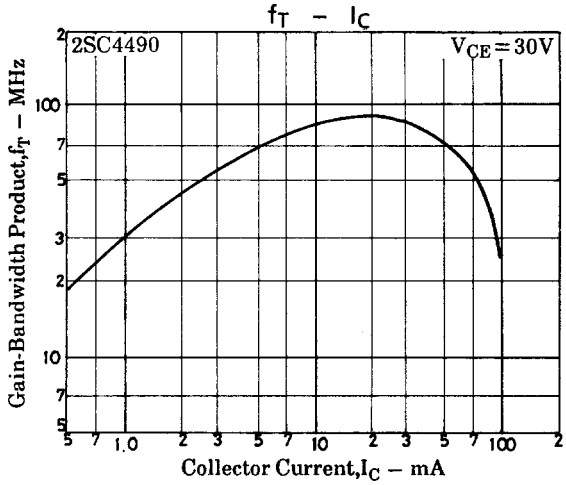


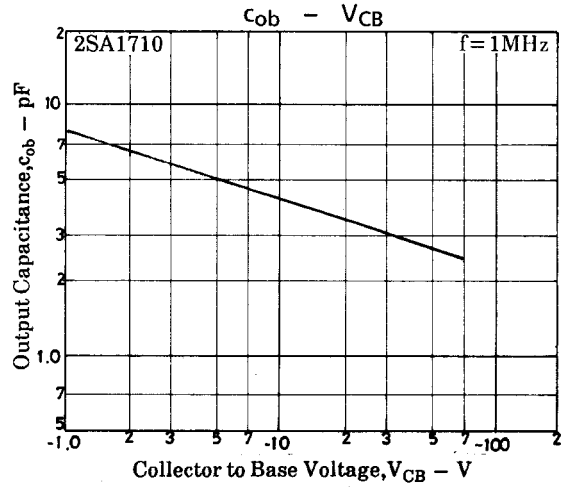


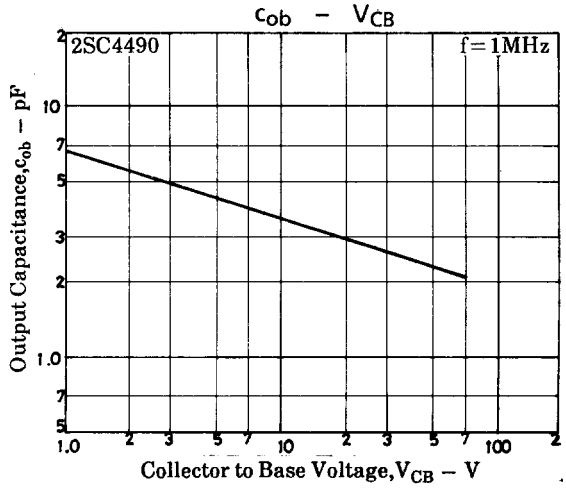

hFE – IC
2SA1710
VCE = –10V
Ta = 75°C
25°C
–25°C
DC Current Gain,hFE
Collector Current,IC – mA

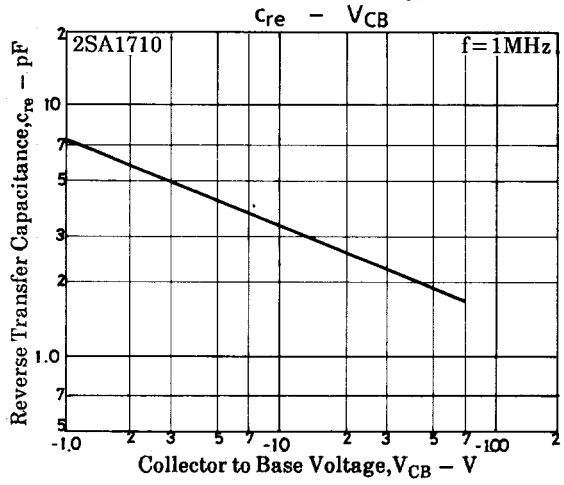

hFE – IC
2SC4490
VCE = 10V
Ta = 75°C
25°C
–25°C
DC Current Gain,hFE
Collector Current,IC – mA

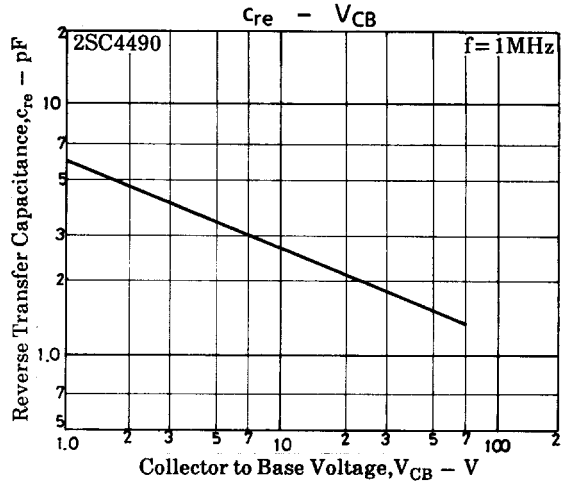

fT – IC
2SA1710
VCE = –30V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA

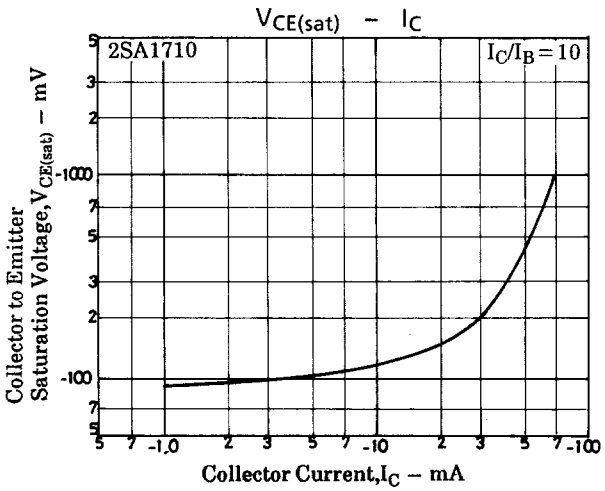

fT – IC
2SC4490
VCE = 30V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA

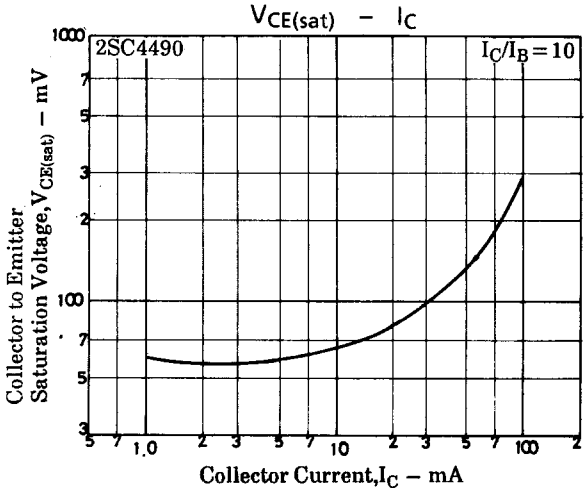

Cob – VCB
2SA1710
f = 1MHz
Output Capacitance,Cob – pF
Collector to Base Voltage,VCB – V

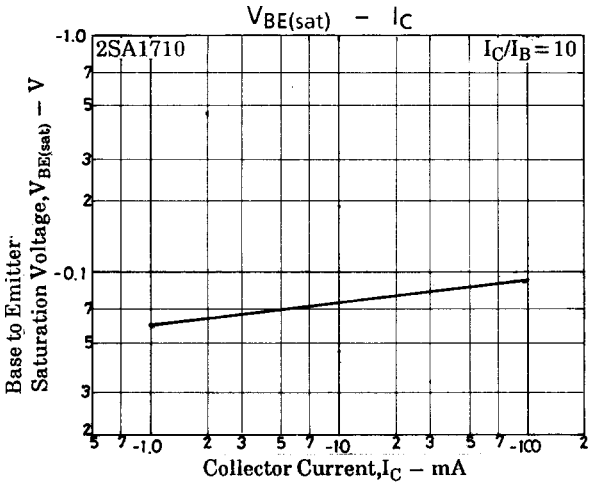

Cob – VCB
2SC4490
f = 1MHz
Output Capacitance,Cob – pF
Collector to Base Voltage,VCB – V

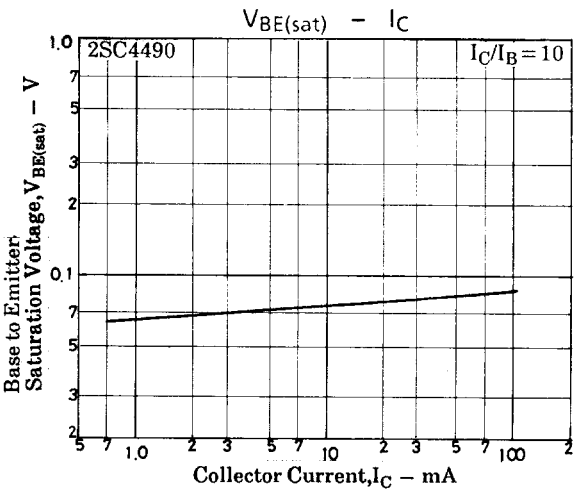

Cre – VCB
2SA1710
f = 1MHz
Reverse Transfer Capacitance,Cre – pF
Collector to Base Voltage,VCB – V

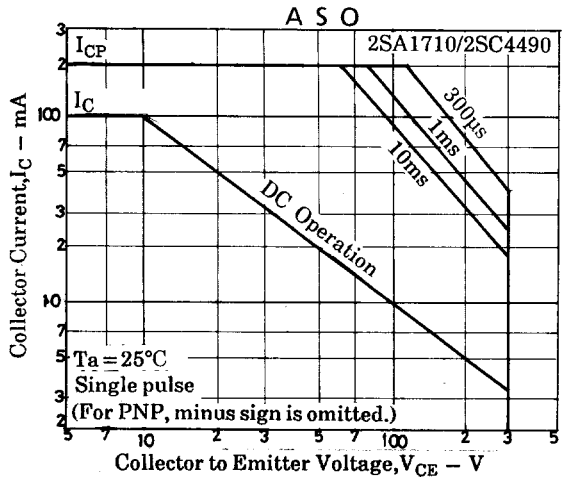

Cre – VCB
2SC4490
f = 1MHz
Reverse Transfer Capacitance,Cre – pF
Collector to Base Voltage,VCB – V

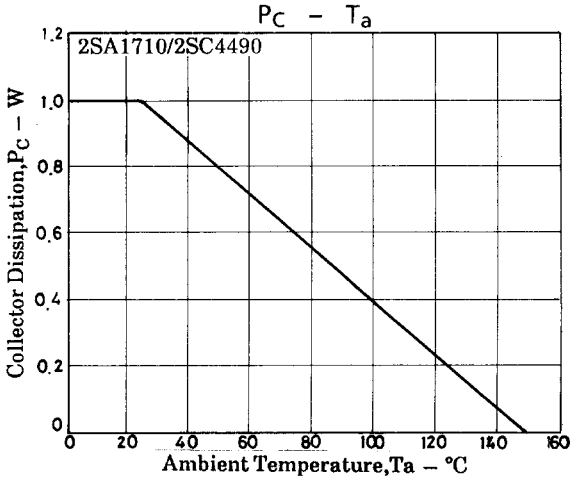

VCE(sat) – IC
2SA1710
IC/IB=10
Collector to Emitter Saturation Voltage,VCE(sat) – mV
Collector Current,IC – mA


VCE(sat) – IC
2SC4490
IC/IB=10
Collector to Emitter Saturation Voltage,VCE(sat) – mV
Collector Current,IC – mA


VBE(sat) – IC
2SA1710
IC/IB=10
Base to Emitter Saturation Voltage,VBE(sat) – V
Collector Current,IC – mA


VBE(sat) – IC
2SC4490
IC/IB=10
Base to Emitter Saturation Voltage,VBE(sat) – V
Collector Current,IC – mA


A S O
2SA1710/2SC4490
ICP
IC
300μs
1ms
10ms
DC Operation
Ta=25°C
Single pulse
(For PNP, minus sign is omitted.)
Collector Current,IC – mA
Collector to Emitter Voltage,VCE – V


PC – Ta
2SA1710/2SC4490
Collector Dissipation,PC – W
Ambient Temperature,Ta – °C