Ordering number:ENN3097

~~PNP~~/NPN Epitaxial Planar Silicon Transistors

~~2SA1710~~/2SC4490

High-Definition CRT Display Video Output Applications

Features

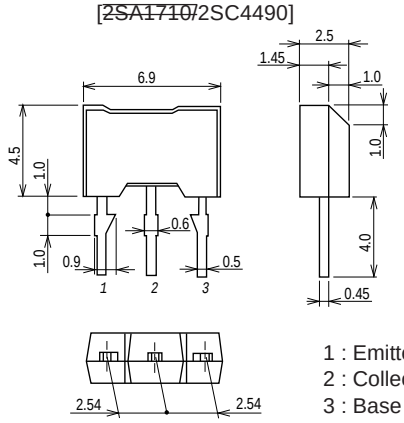
- High breakdown voltage (V_{CEO}≥300V).
- Excellent high frequency characteristic.
- Adoption of MBIT process.

Package Dimensions

unit:mm

2064A

[~~2SA1710~~/2SC4490]



1 : Emitter
2 : Collector
3 : Base
SANYO : NMP

~~( )~~ : ~~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

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

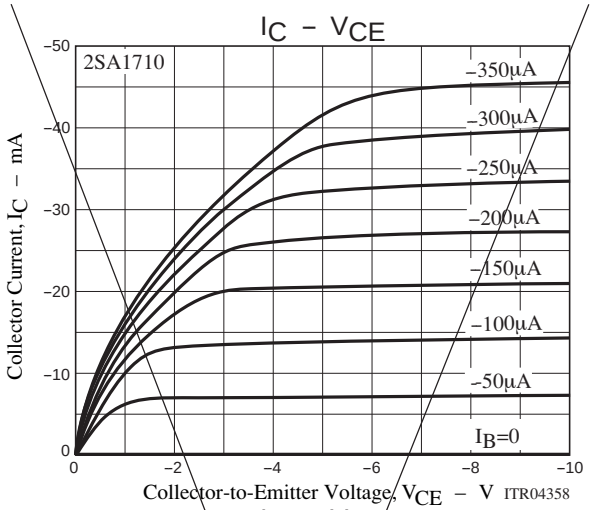
Rank	Q	R	S
h_{FE}	70 to 140	100 to 200	140 to 280

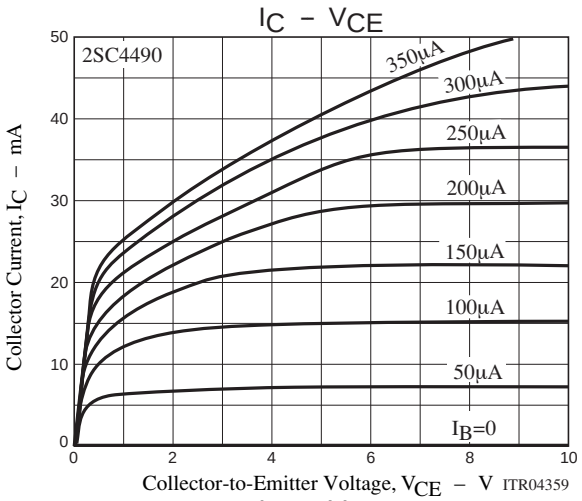
Continued on next page.

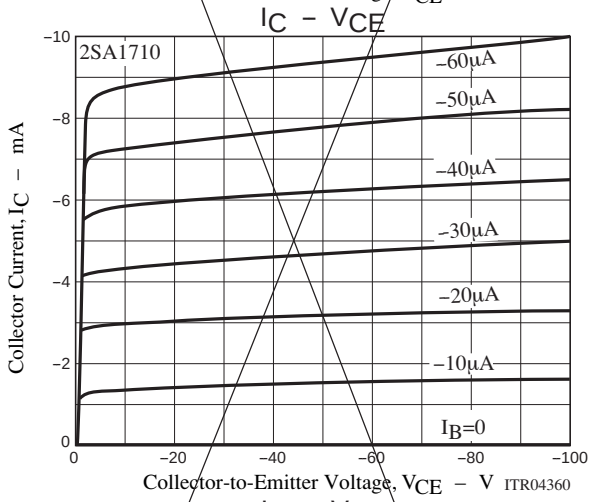
SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

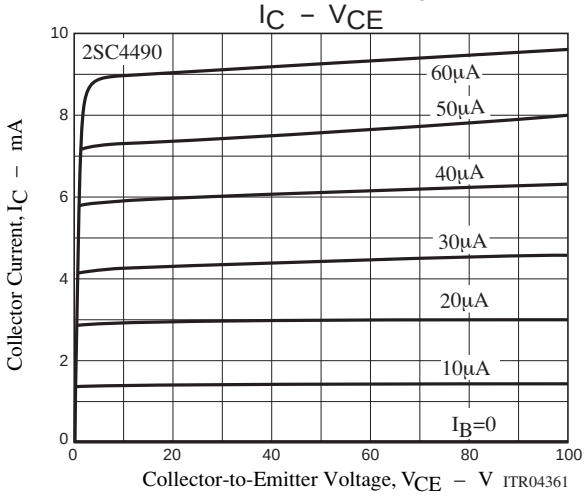
Continued from preceding page.

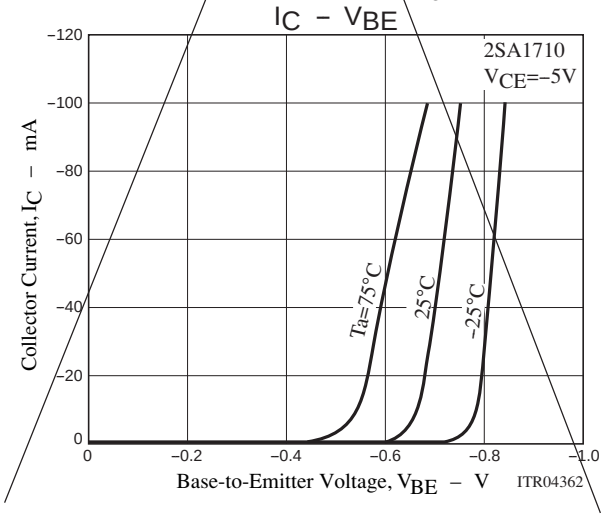
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=~~(–)~~20mA, I_B=~~(–)~~2mA			~~(=)~~0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=~~(=)~~20mA, I_B=~~(=)~~2mA			~~(=)~~1.0	V
Output Capacitance	C_{ob}	V_{CB}=~~(=)~~30V, f=1MHz		~~(3.1)~~		pF
				2.6		pF
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

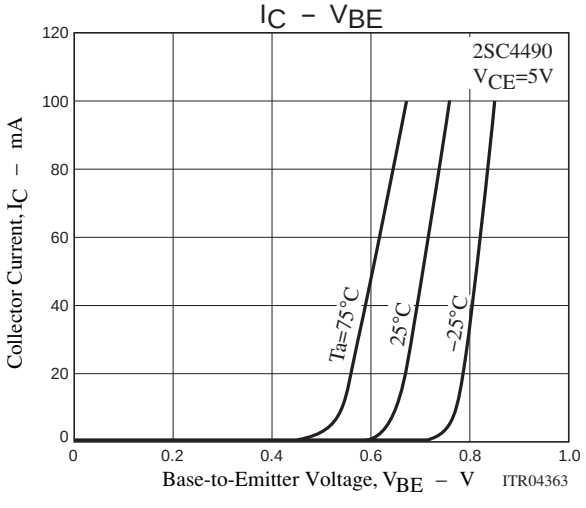


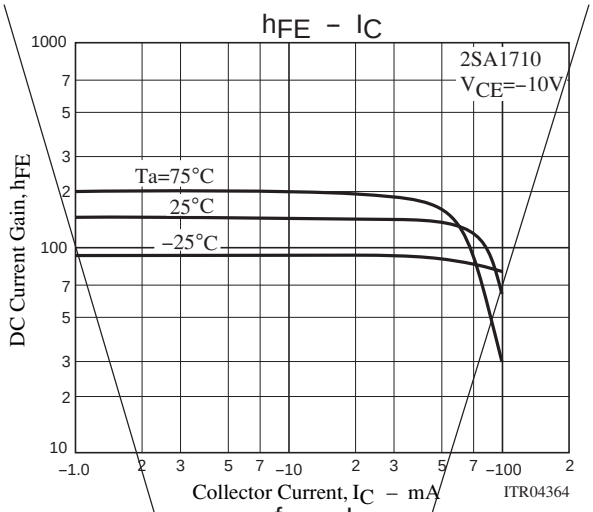


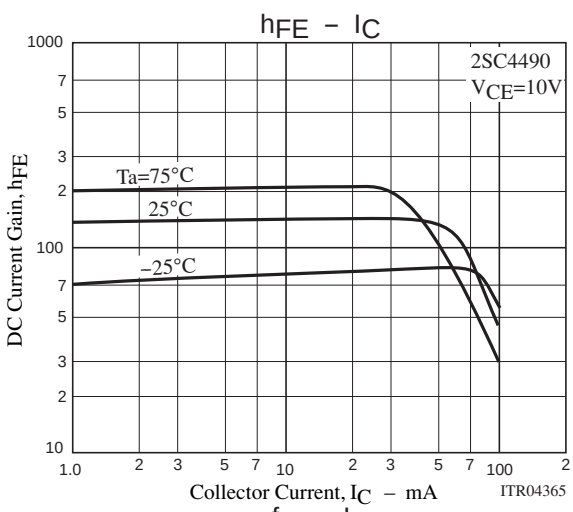


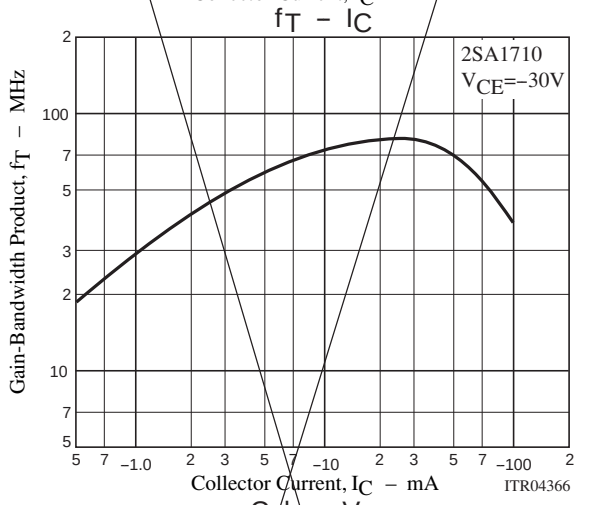


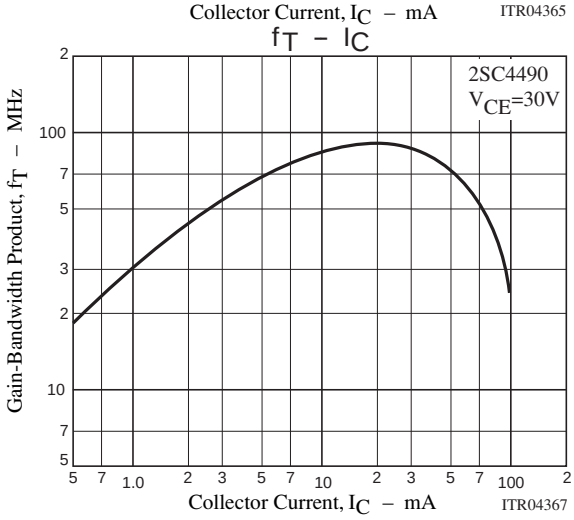


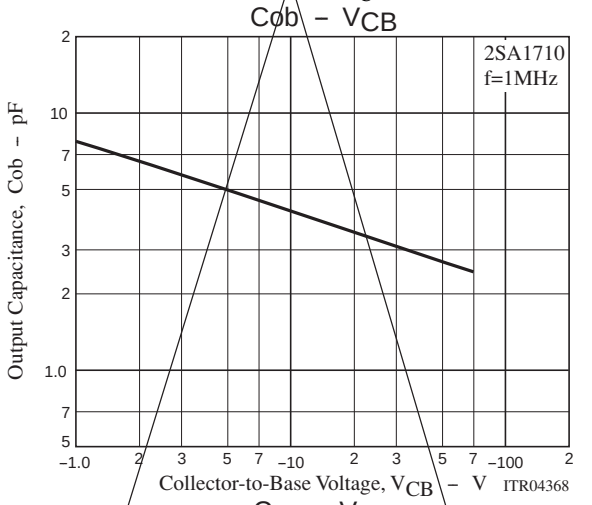


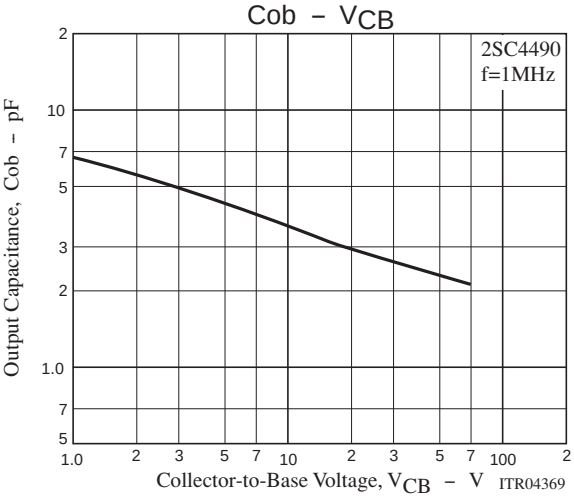

hFE – IC
2SA1710
VCE=–10V
Ta=75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – mA
ITR04364

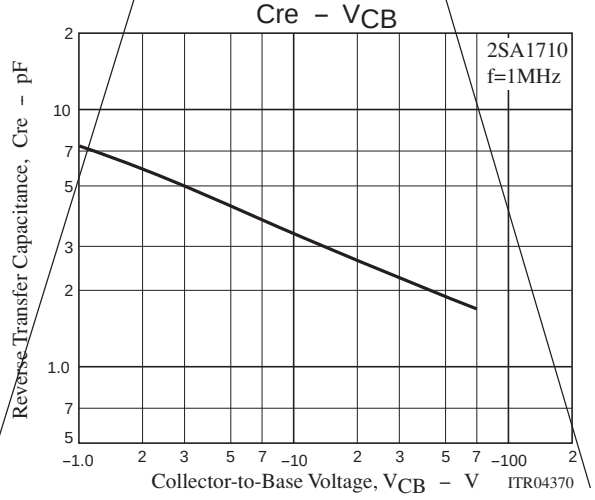

hFE – IC
2SC4490
VCE=10V
Ta=75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – mA
ITR04365

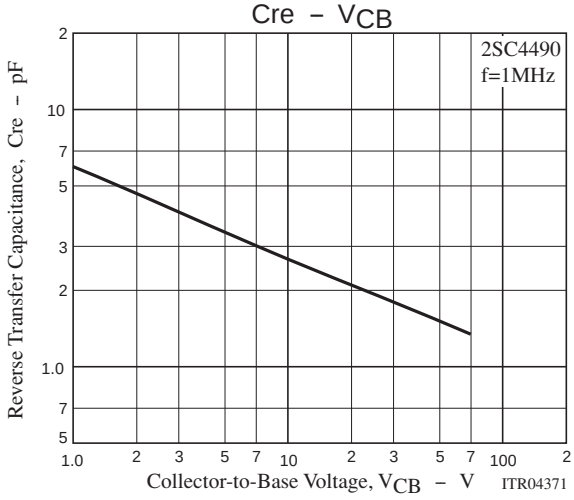

fT – IC
2SA1710
VCE=–30V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR04366

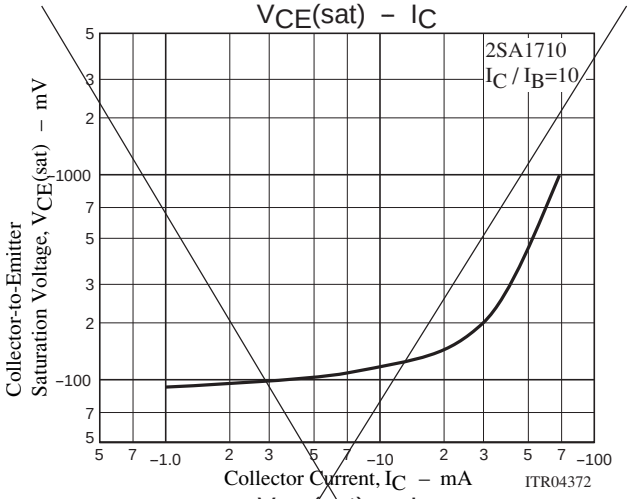

fT – IC
2SC4490
VCE=30V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR04367

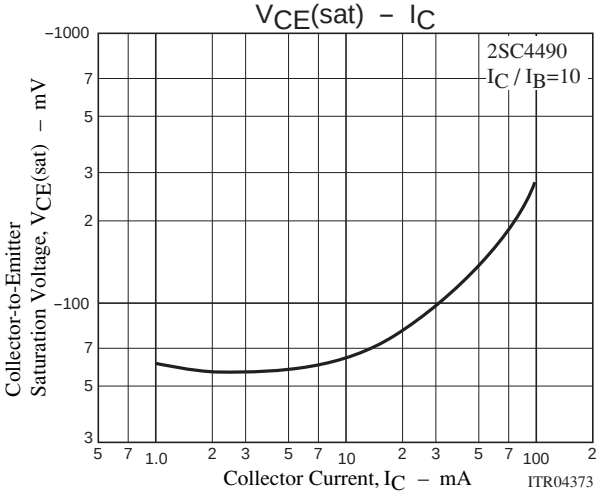

Cob – VCB
2SA1710
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
ITR04368

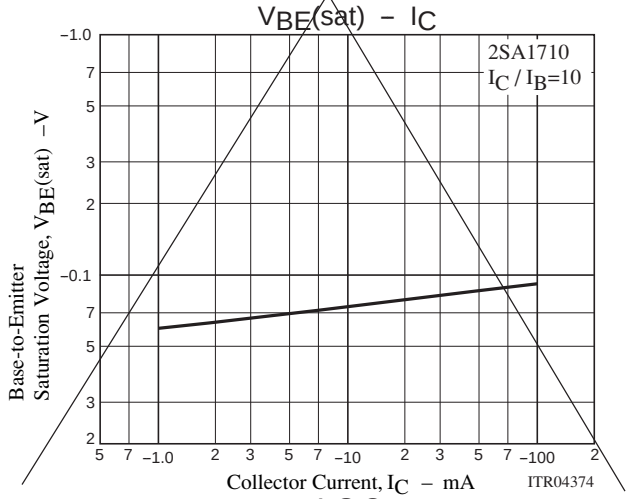

Cob – VCB
2SC4490
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
ITR04369

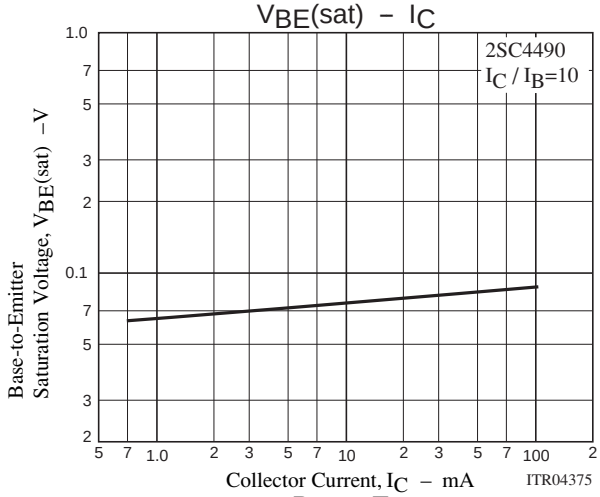

Cre – VCB
2SA1710
f=1MHz
Reverse Transfer Capacitance, Cre – pF
Collector-to-Base Voltage, VCB – V
ITR04370

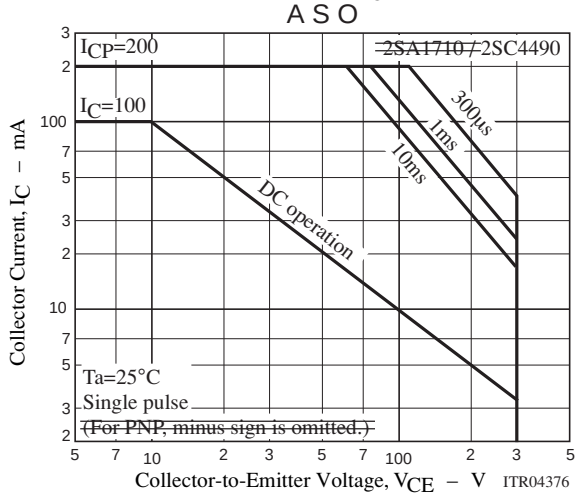

Cre – VCB
2SC4490
f=1MHz
Reverse Transfer Capacitance, Cre – pF
Collector-to-Base Voltage, VCB – V
ITR04371

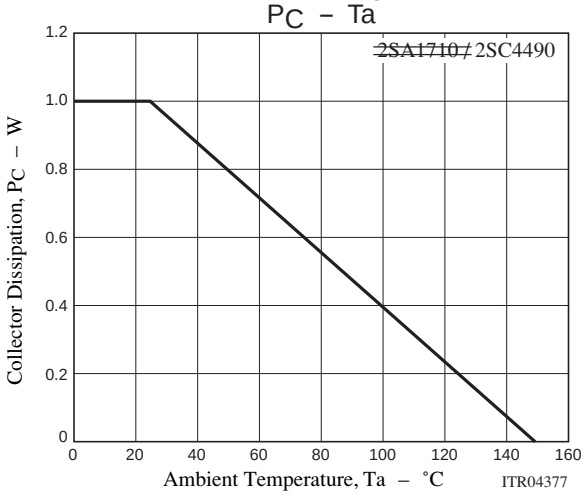

VCE(sat) – IC
2SA1710
IC / IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
ITR04372


VCE(sat) – IC
2SC4490
IC / IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) – mV
Collector Current, IC – mA
ITR04373


VBE(sat) – IC
2SA1710
IC / IB=10
Base-to-Emitter Saturation Voltage, VBE(sat) –V
Collector Current, IC – mA
ITR04374


VBE(sat) – IC
2SC4490
IC / IB=10
Base-to-Emitter Saturation Voltage, VBE(sat) –V
Collector Current, IC – mA
ITR04375


A S O
ICP=200
IC=100
~~2SA1710~~/2SC4490
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
ITR04376


PC – Ta
~~2SA1710~~/2SC4490
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
ITR04377