Ordering number:EN2437A

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1538/2SC3953

High-Definition CRT Display Video Output Applications

Applications

· High-definition CRT display video output, wide-band amplifier.

Features

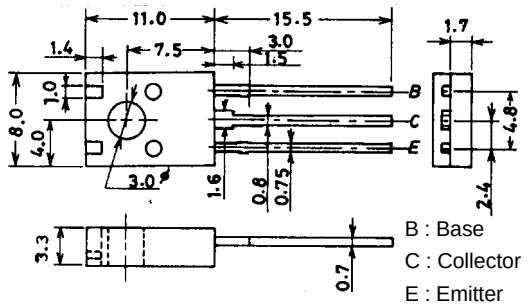
· High f_T : f_T=400MHz.
· High breakdown voltage : V_{CEO}=120Vmin.
· Small reverse transfer capacitance and excellent HF response : Cre=1.7pF/NPN, 2.2pF/PNP.
· Complementary PNP and NPN types.
· Adoption of FBET process.
· Micaless type : TO-126 plastic package.

Package Dimensions

unit:mm

2042A

[2SA1538/2SC3953]



B : Base
C : Collector
E : Emitter

SANYO : TO-126ML

( ) : 2SA1538

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)120	V
Collector-to-Emitter Voltage	V_{CEO}		(–)120	V
Emitter-to-Base Voltage	V_{EBO}		(–)3	V
Collector Current	I_C		(–)200	mA
Peak Collector Current	I_{CP}		(–)400	mA
Collector Dissipation	P_C		1.3	W
		Tc=25˚C	8	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

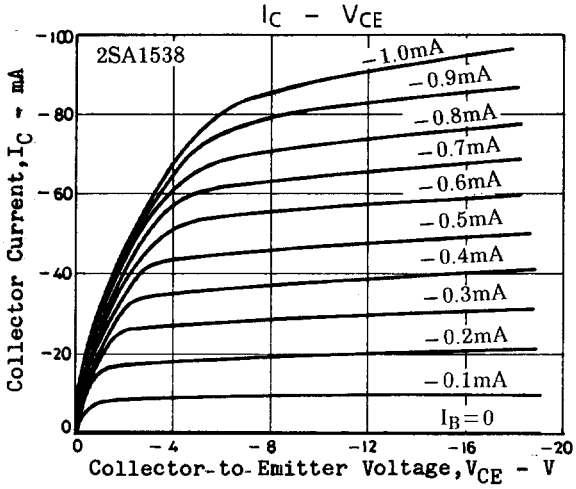
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(–)80V, I_E=0			(–)0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)2V, I_C=0			(–)1.0	μA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)10V, I_C=(–)10mA	40*		320*	
	$h_{FE}2$	V_{CE}=(–)10V, I_C=(–)100mA	20			
Gain-Bandwidth Product	f_T	V_{CE}=(–)10V, I_C=(–)50mA		400		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)30V, f=1MHz		2.1		pF
				(2.8)		pF
Reverse Transfer Capacitance	C_{re}	V_{CB}=(–)30V, f=1MHz		1.7		pF
				(2.2)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)30mA, I_B=(–)3mA			(–)1.0	V
Emitter-to-Base Saturation Voltage	$V_{BE(sat)}$	I_C=(–)30mA, I_B=(–)3mA			(–)1.0	V

* $h_{FE}1$: The 2SA1538/2SC3953 are classified by 50mA h_{FE} as follows :

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

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

I_C – V_{CE}



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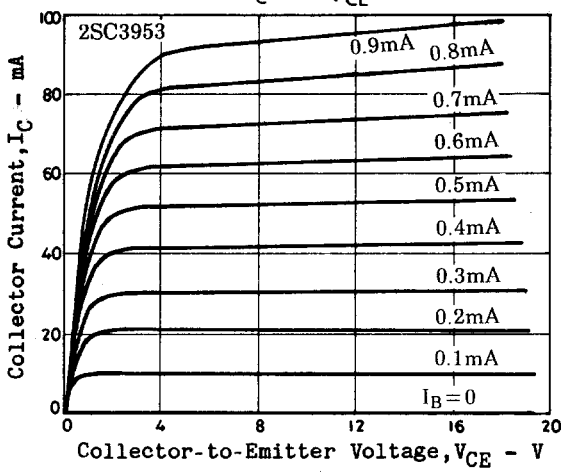
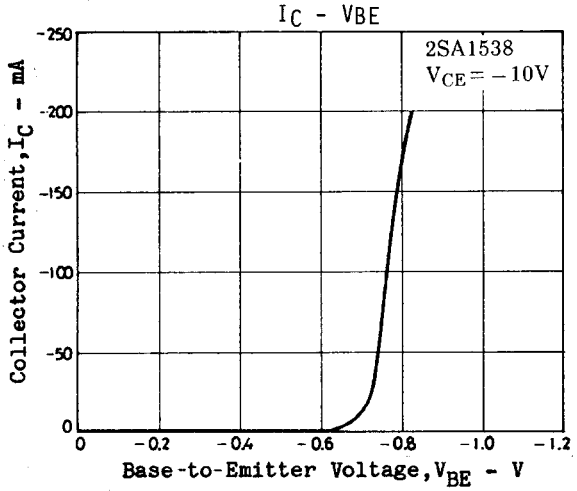
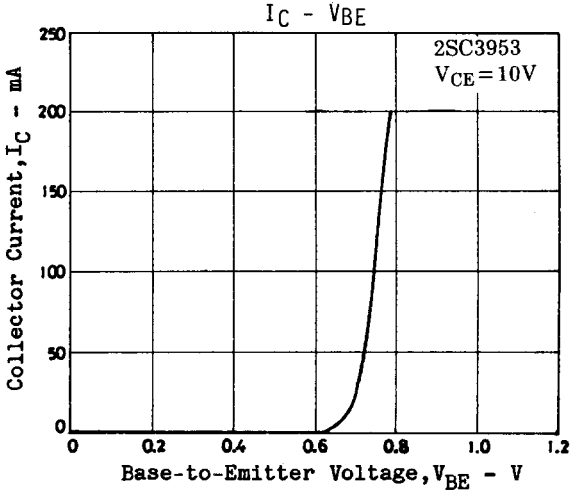


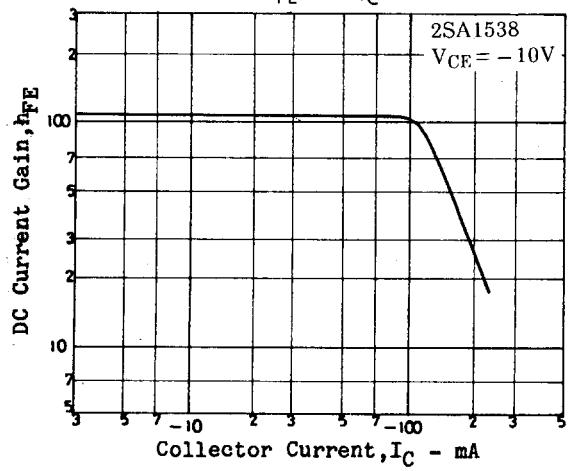
I_C – V_{BE}



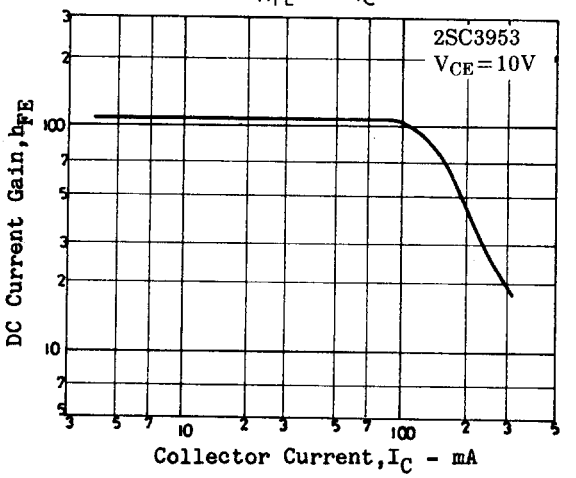
I_C – V_{BE}



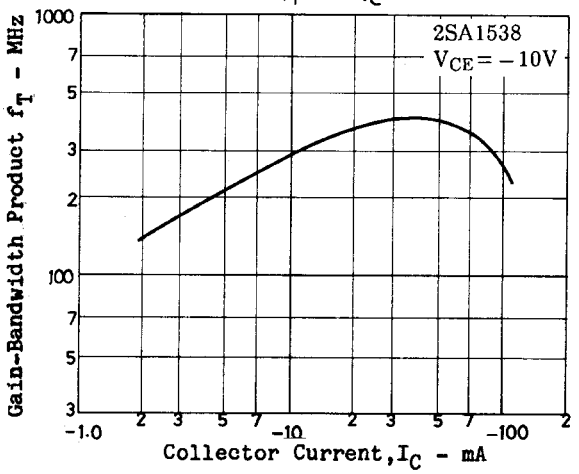
h_{FE} – I_C



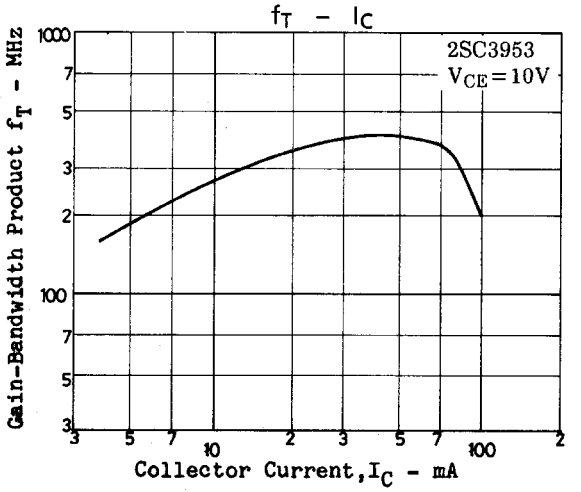
h_{FE} – I_C



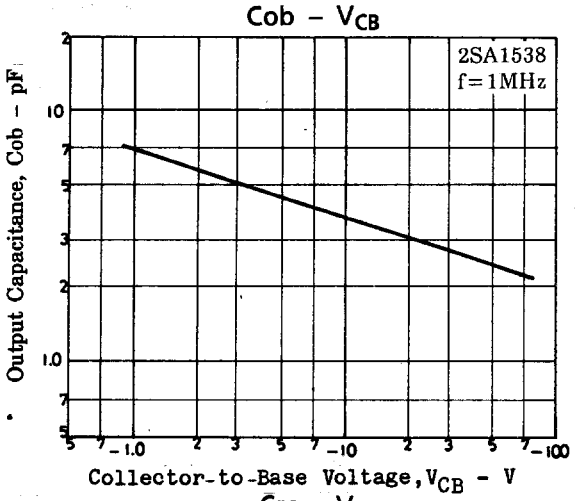
f_T – I_C



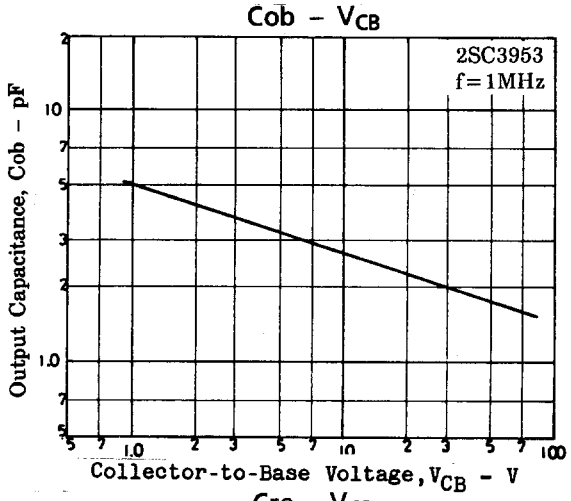
f_T – I_C



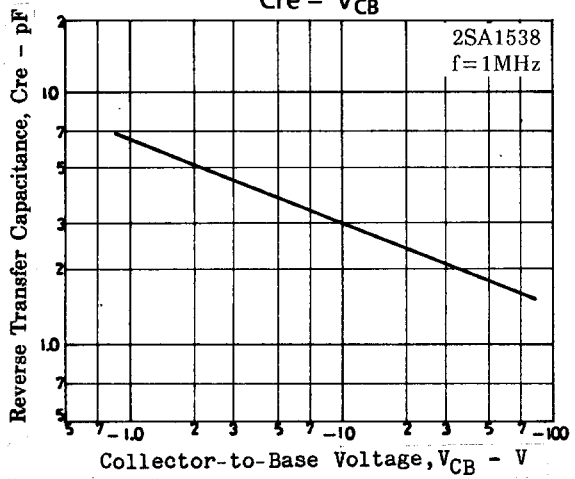
Cob – V_{CB}



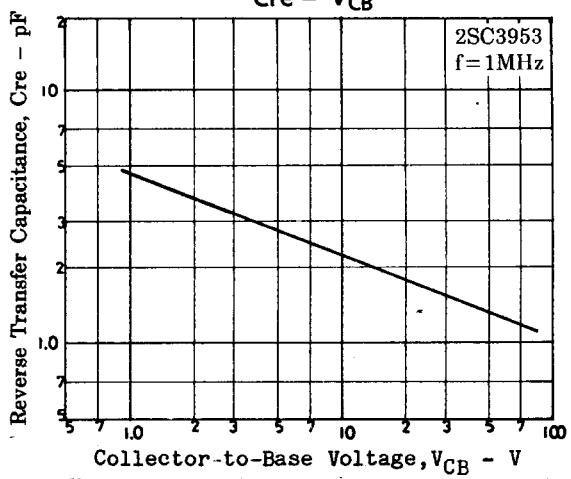
Cob – V_{CB}



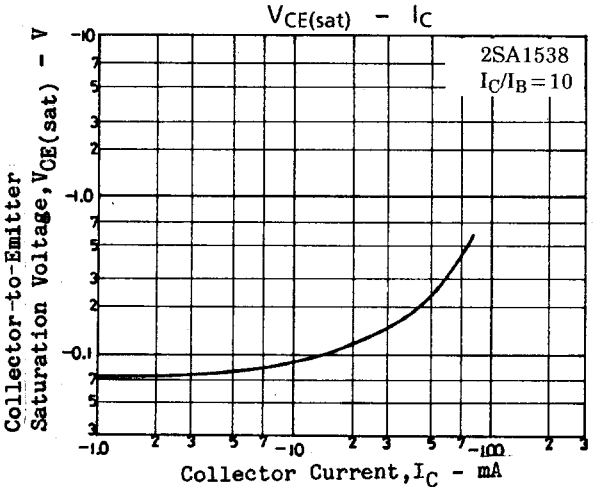
Cre – V_{CB}



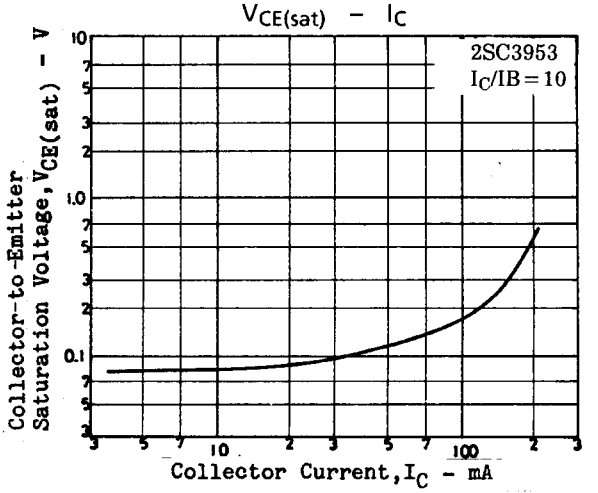
Cre – V_{CB}



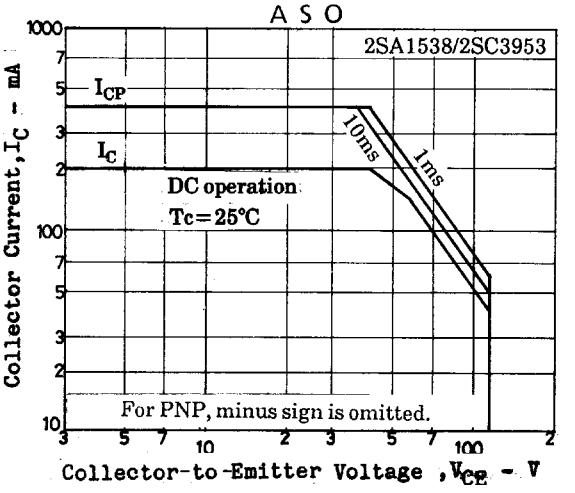
$V_{CE(sat)}$ – I_C



$V_{CE(sat)}$ – I_C



A S O



P_C – T_a