Ordering number:EN3644

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1777/2SC4623

Very High-Definition CRT Display Video Output Applications

Features

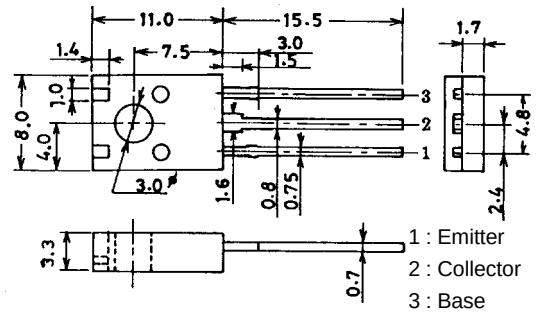
- High f_T : f_T=400MHz (typ).
- High breakdown voltage : V_{CEO}≥250V(min).
- High current.
- Small reverse transfer capacitance and excellent high-frequnecy characteristic : C_{re}=3.4pF (NPN), 4.2pF (PNP).
- Complementary pair with the 2SA1777/2SC4623.
- Adoption of FBET process.

Package Dimensions

unit:mm

2042B

[2SA1777/2SC4623]



SANYO : TO-126ML

( ) : 2SA1777

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)250	V
Collector-to-Emitter Voltage	V_{CEO}		(–)250	V
Emitter-to-Base Voltage	V_{EBO}		(–)3	V
Collector Current	I_C		(–)300	mA
Colletor Current (Pulse)	I_{CP}		(–)600	mA
Collector Dissipation	P_C		1.3	W
		Tc=25˚C	10	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}=(–)150V, 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=(–)50mA	40*		200*	
	$h_{FE}2$	V_{CE}=(–)10V, I_C=(–)250mA	20			
Gain-Bandwidth Product	f_T	V_{CE}=(–)30V, I_C=(–)100mA		400		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)30V, f=1MHz		(5.0)		pF
				4.2		pF
Reverse Transfer Capacitance	C_{re}	V_{CB}=(–)30V, f=1MHz		(4.2)		pF
				3.4		pF

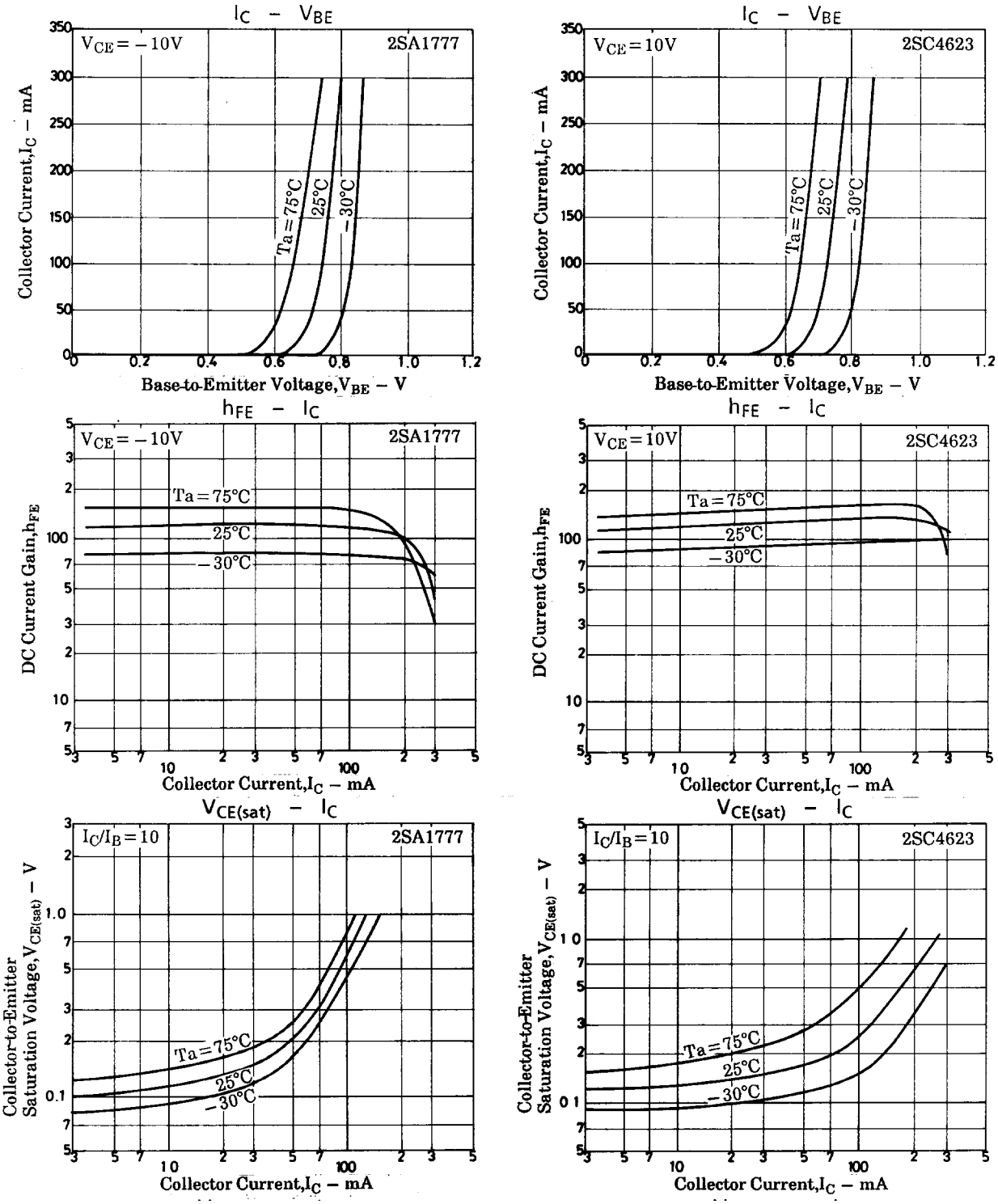
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters

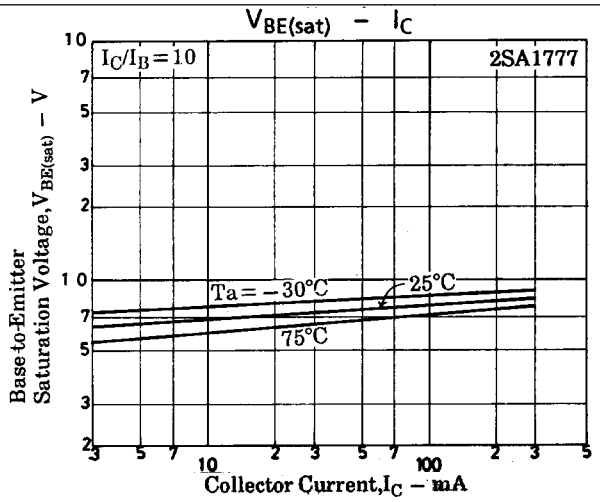
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

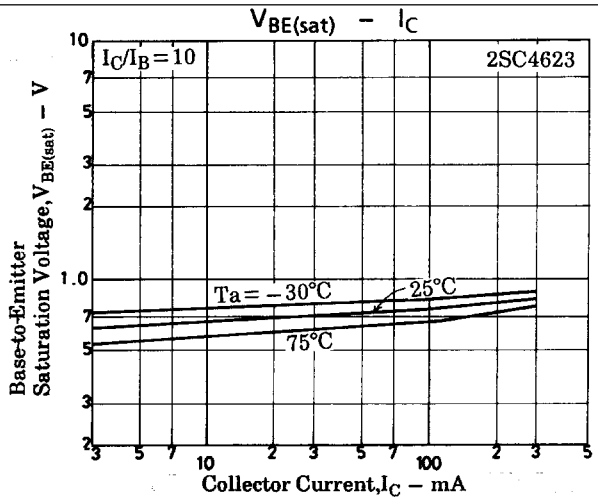
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)50mA, I_B=(–)5mA			(–)1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)50mA, I_B=(–)5mA			(–)1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)250			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)250			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)10μA, I_C=0	(–)3			V

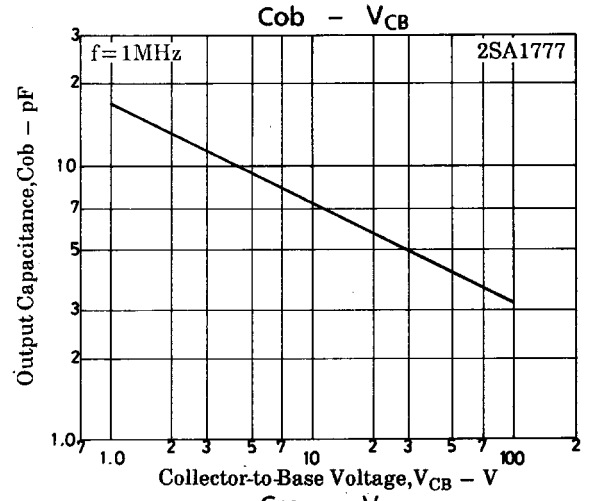
* : The 2SA1777/2SC4623 are classified by 50mA h_{FE} as follows :

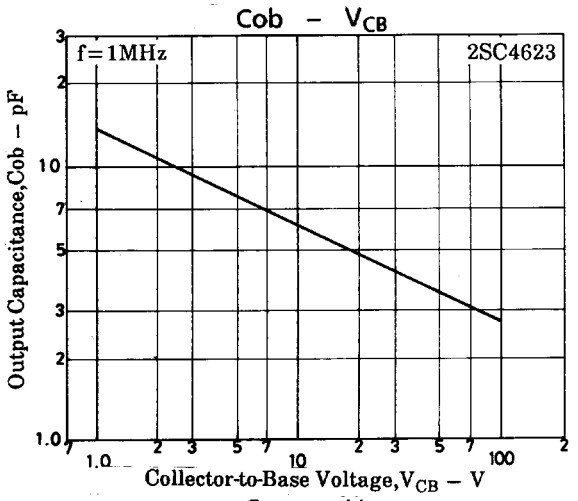
40 C 80	60 D 120	100 E 200

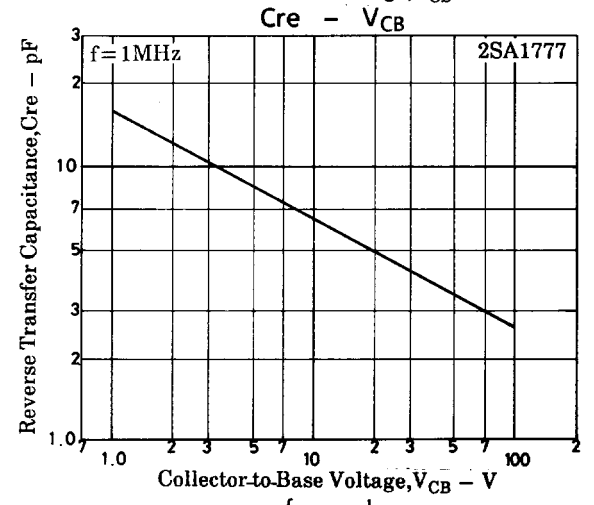


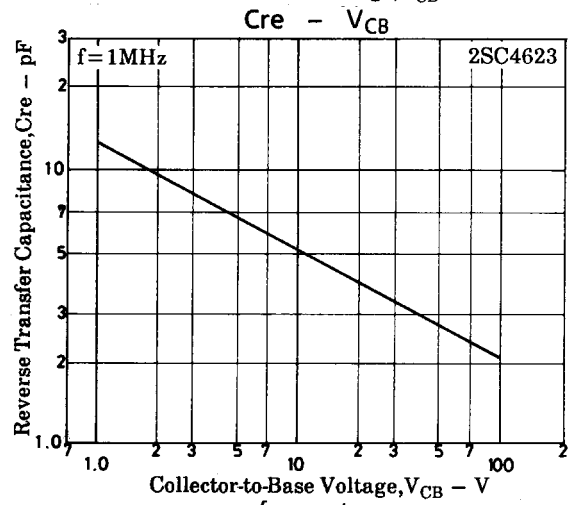

$V_{BE(sat)}$ – I_C
$I_C/I_B=10$
2SA1777
Ta=–30°C
25°C
75°C
Base-to-Emitter Saturation Voltage, $V_{BE(sat)}$ – V
Collector Current, I_C – mA

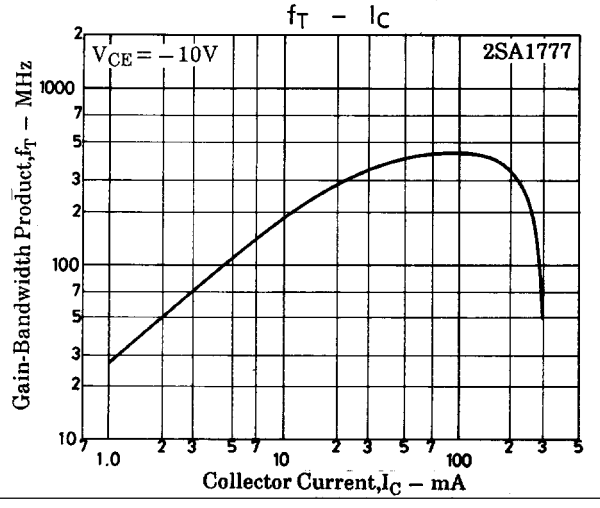

$V_{BE(sat)}$ – I_C
$I_C/I_B=10$
2SC4623
Ta=–30°C
25°C
75°C
Base-to-Emitter Saturation Voltage, $V_{BE(sat)}$ – V
Collector Current, I_C – mA

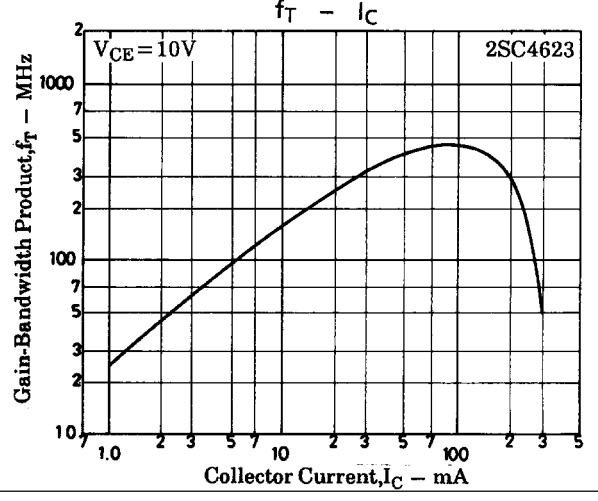

Cob – V_{CB}
f=1MHz
2SA1777
Output Capacitance, Cob – pF
Collector-to-Base Voltage, V_{CB} – V


Cob – V_{CB}
f=1MHz
2SC4623
Output Capacitance, Cob – pF
Collector-to-Base Voltage, V_{CB} – V


Cre – V_{CB}
f=1MHz
2SA1777
Reverse Transfer Capacitance, Cre – pF
Collector-to-Base Voltage, V_{CB} – V


Cre – V_{CB}
f=1MHz
2SC4623
Reverse Transfer Capacitance, Cre – pF
Collector-to-Base Voltage, V_{CB} – V


f_T – I_C
$V_{CE}=-10V$
2SA1777
Gain-Bandwidth Product, f_T – MHz
Collector Current, I_C – mA


f_T – I_C
$V_{CE}=10V$
2SC4623
Gain-Bandwidth Product, f_T – MHz
Collector Current, I_C – mA