Ordering number:EN3197

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1753/2SC4577

Low-Frequency General-Purpose Amplifier Applications

Features

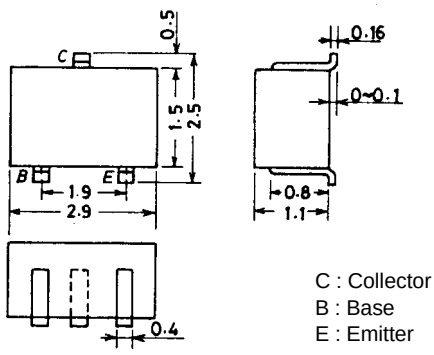
- Small-sized package permitting the 2SA1753/ 2SC4577-applied sets to be made small and slim.
- Low collector-to-emitter saturation voltage.

Package Dimensions

unit:mm

2018A

[2SA1753/2SC4577]



C : Collector
B : Base
E : Emitter

SANYO : CP

( ) : 2SA1753

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)20	V
Collector-to-Emitter Voltage	V_{CEO}		(–)15	V
Emitter-to-Base Voltage	V_{EBO}		(–)5	V
Collector Current	I_C		(–)500	mA
Collector Current (Pulse)	I_{CP}		(–)1	A
Collector Dissipation	P_C		200	mW
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}=(–)15V, I_E=0			(–)0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0			(–)0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)2V, I_C=(–)10mA	135*		600*	
	$h_{FE}2$	V_{CE}=(–)2V, I_C=(–)400mA	(70)80			
Gain-Bandwidth Product	f_T	V_{CE}=(–)2V, I_C=(–)50mA		300		MHz
				(400)		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)10V, f=1MHz		(6.5)		pF
				4.0		pF

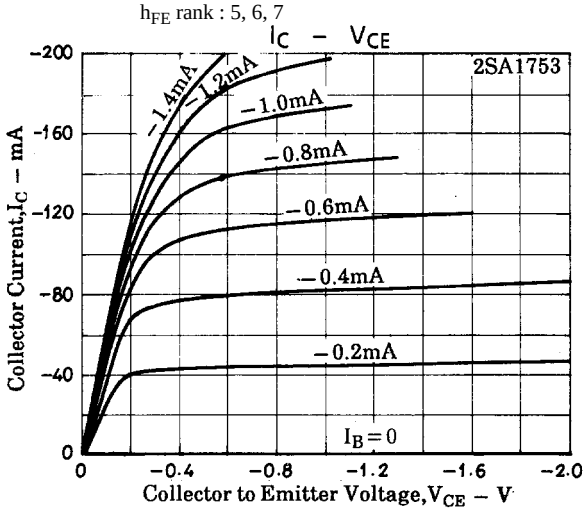
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

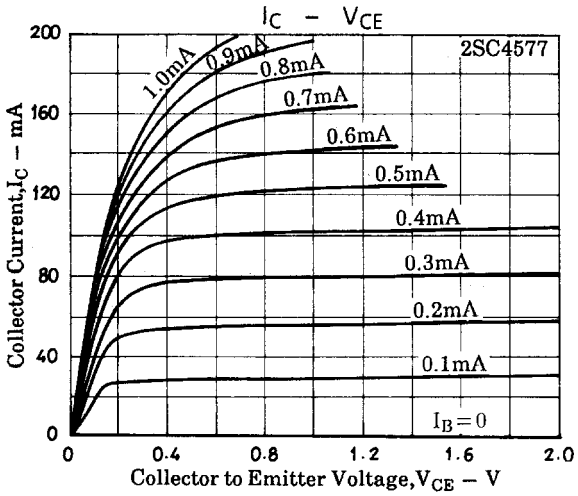
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}1$	I_C=(–)5mA, I_B=(–)0.5mA		(–)15	(–35)	mV
					30	mV
	$V_{CE(sat)}2$	I_C=(–)200mA, I_B=(–)10mA		160	300	mV
				(–200)	(–360)	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)200mA, I_B=(–)10mA		(–)0.95	(–)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0	(–)20			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(–)10μA, I_C=0	(–)5			V

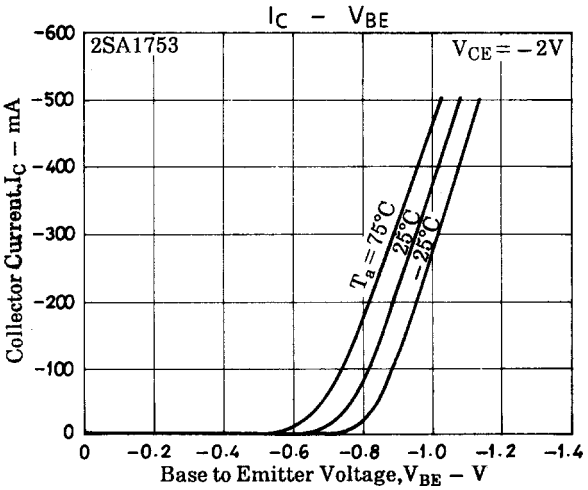
* : The 2SA1753/2SC4577 are classified by 10mA h_{FE} as follows :

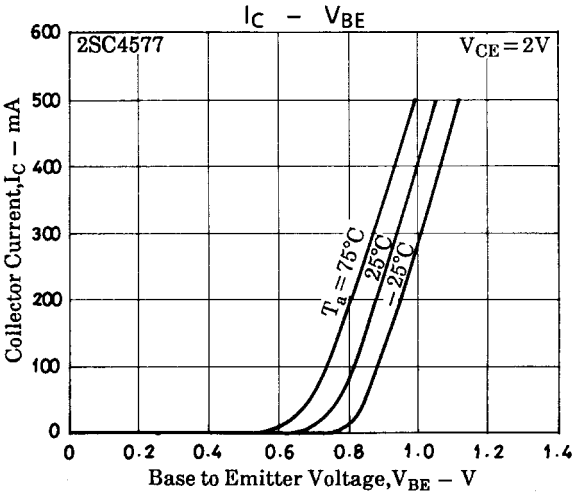
135	5	270	200	6	400	300	7	600

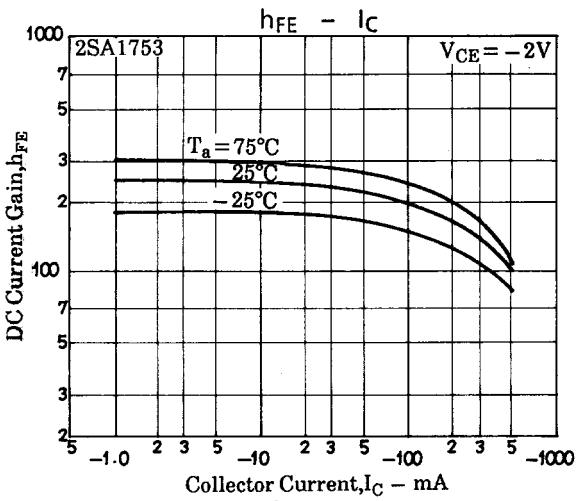
Marking 2SA1753 : ES
2SC4577 : UT
h_{FE} rank : 5, 6, 7

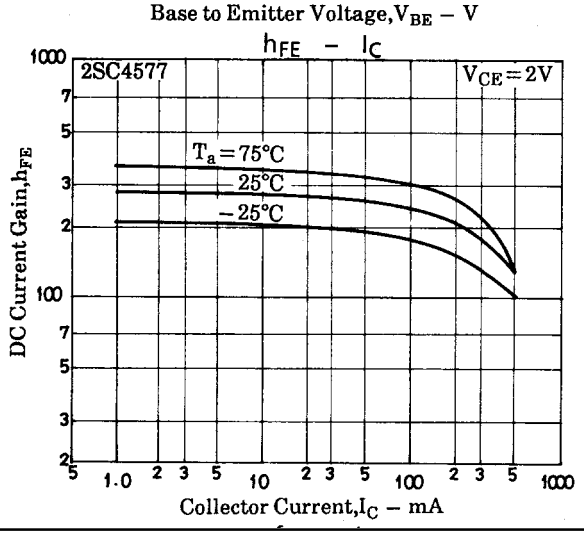


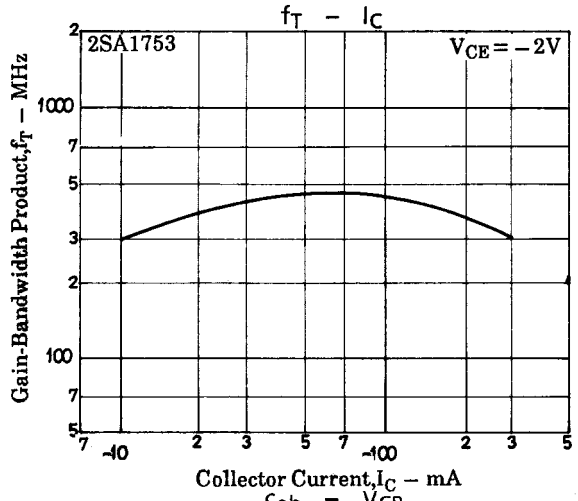


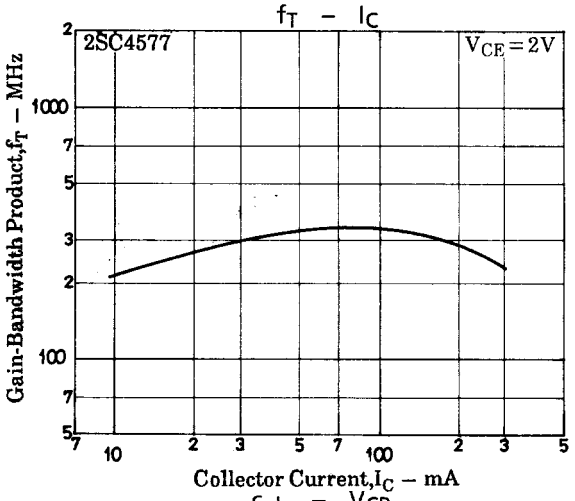


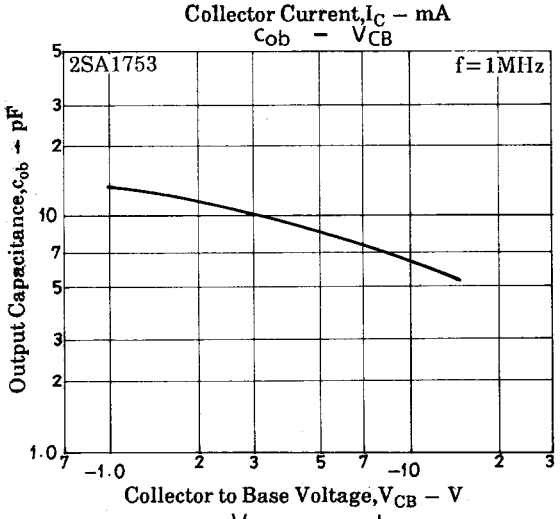


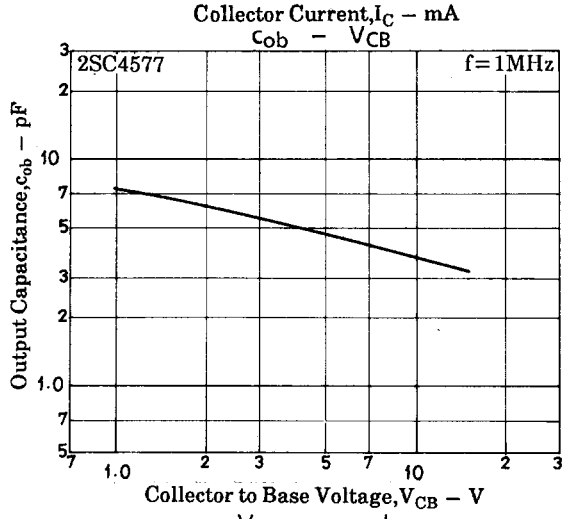


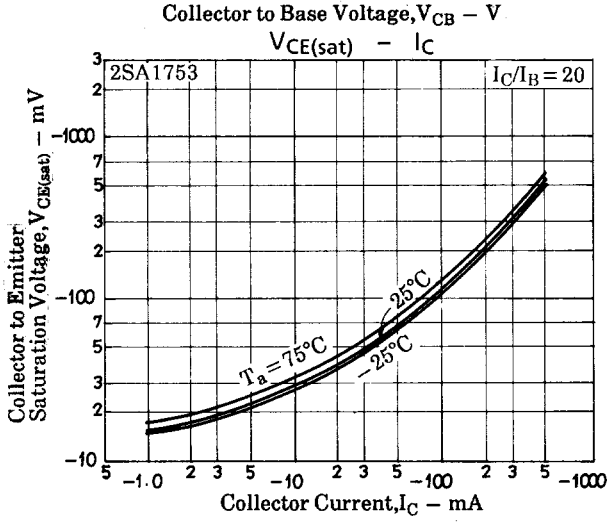


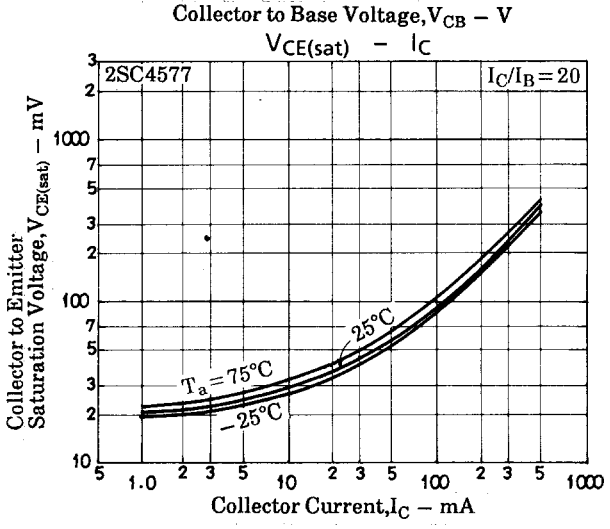

fT – IC
2SA1753
VCE = –2V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA

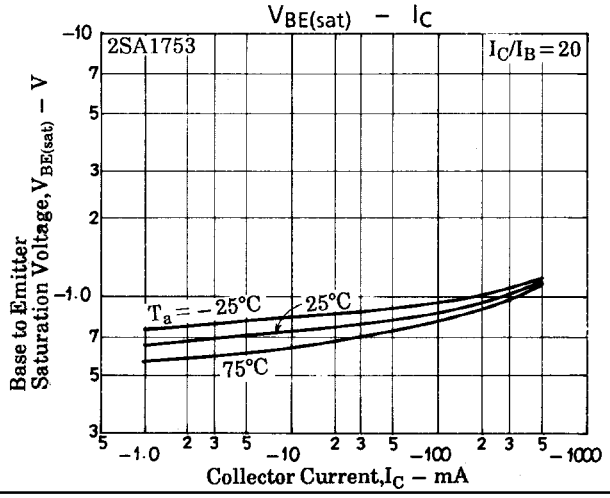

fT – IC
2SC4577
VCE = 2V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA

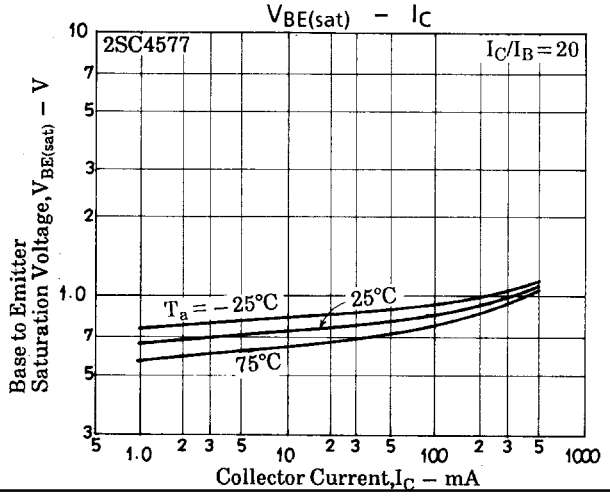

Cob – VCB
2SA1753
f = 1MHz
Output Capacitance, Cob – pF
Collector to Base Voltage, VCB – V


Cob – VCB
2SC4577
f = 1MHz
Output Capacitance, Cob – pF
Collector to Base Voltage, VCB – V


VCE(sat) – IC
2SA1753
IC/IB = 20
Collector to Emitter Saturation Voltage, VCE(sat) – mV
Ta = 75°C
25°C
–25°C
Collector Current, IC – mA


VCE(sat) – IC
2SC4577
IC/IB = 20
Collector to Emitter Saturation Voltage, VCE(sat) – mV
Ta = 75°C
25°C
–25°C
Collector Current, IC – mA


VBE(sat) – IC
2SA1753
IC/IB = 20
Base to Emitter Saturation Voltage, VBE(sat) – V
Ta = –25°C
25°C
75°C
Collector Current, IC – mA


VBE(sat) – IC
2SC4577
IC/IB = 20
Base to Emitter Saturation Voltage, VBE(sat) – V
Ta = –25°C
25°C
75°C
Collector Current, IC – mA