Ordering number:EN4717

PNP/NPN Epitaxial Planar Silicon Transistor

2SA1853/2SC4827

High Definition CRT Display Video Output Applications

Applications

· High-definition CRT display video output. Wide-band amplifier.

Features

· Adoption of FBET process.
· High f_T : f_T=300MHz.
· High breakdown voltage : V_{CEO}=200V.
· Small reverse transfer capacitance and excellent high-frequency characteristic : C_{re}=2.2pF/NPN, 2.7pF/PNP.
· Possible to offer the 2SA1853/2SC4827 devices in a tepa reel packaging, which facilitates automatic incertion.

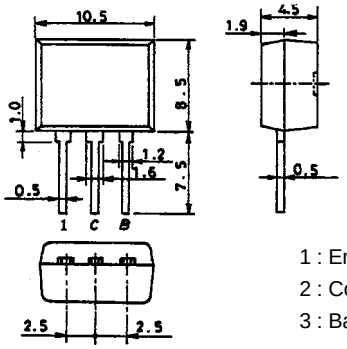
( ) : 2SA1853

Package Dimensions

unit:mm

2084B

[2SA1853/2SC4827]



1 : Emitter
2 : Collector
3 : Base

SANYO : FLP

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)200	V
Collector-to-Emitter Voltage	V_{CEO}		(–)200	V
Emitter-to-Base Voltage	V_{EBO}		(–)3	V
Collector Current	I_C		(–)200	mA
Colletor Current (Pulse)	I_{CP}		(–)300	mA
Collector Dissipation	P_C		1.3	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=(–)10mA	60*		320*	
	$h_{FE}2$	V_{CE}=(–)10V, I_C=(–)100mA	20			
Gain Bandwidth Product	f_T	V_{CE}=(–)30V, I_C=(–)50mA		300		MHz
Output Capacitance	C_{ob}	V_{CB}=(–)30V, f=1MHz		2.7		pF
				(3.2)		pF
Reverse Transfer Capacitance	C_{re}	V_{CB}=(–)30V, f=1MHz		2.2		pF
				(2.7)		pF

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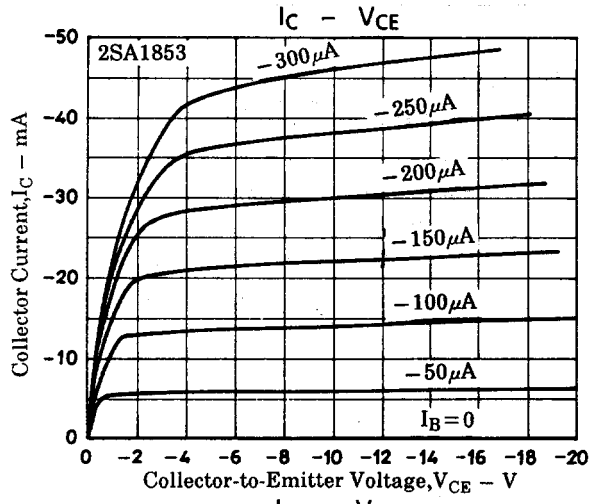
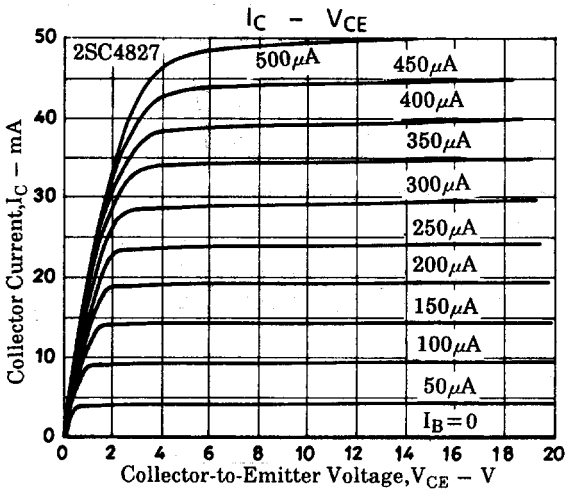
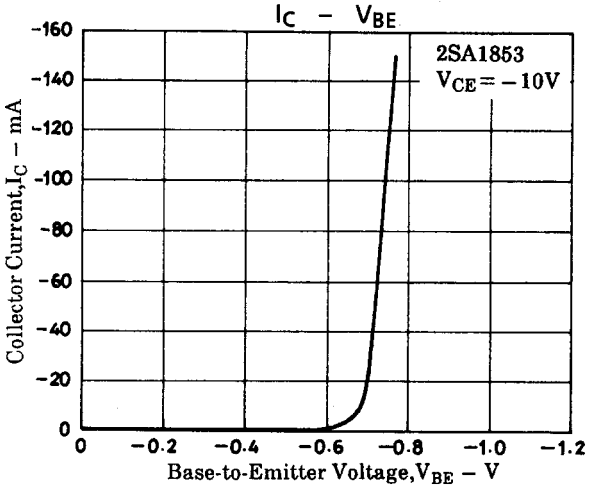
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)30mA, I_B=(–)3mA			(–)1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)30mA, I_B=(–)3mA			(–)1.0	V

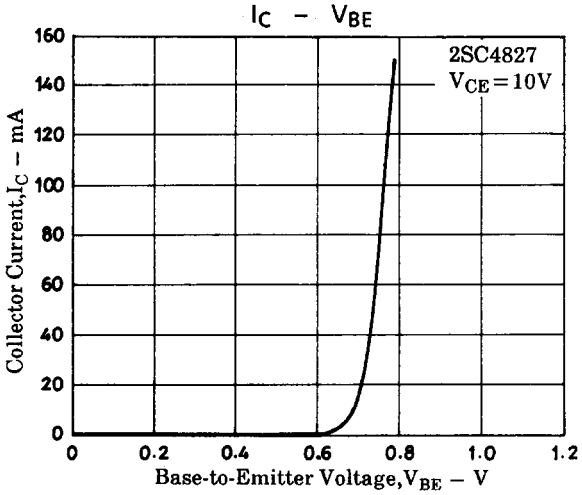
* : The 2SA1853/2SC4827 are classified by 10mA h_{FE} as follows :

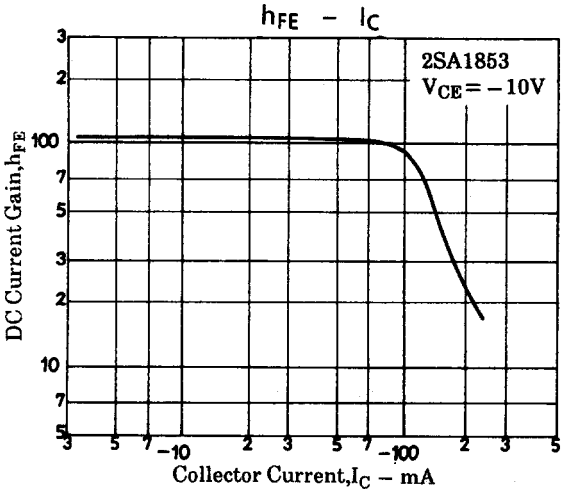
60 D 120	100 E 200	160 F 320

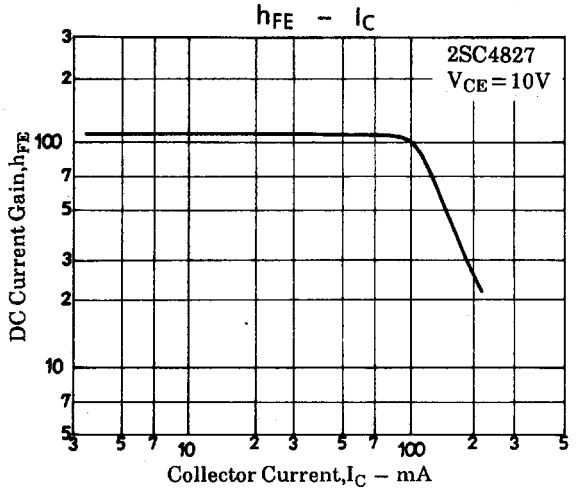


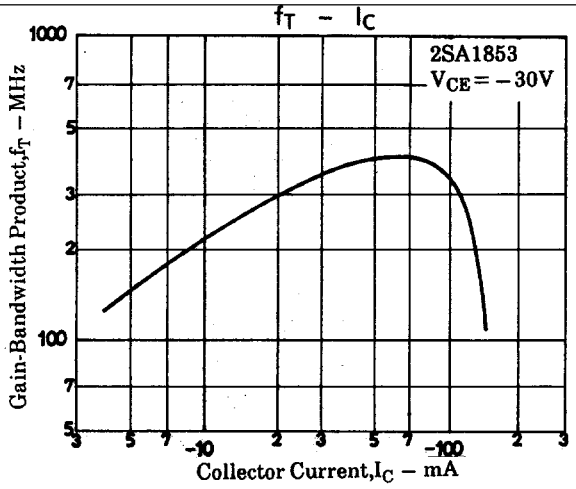


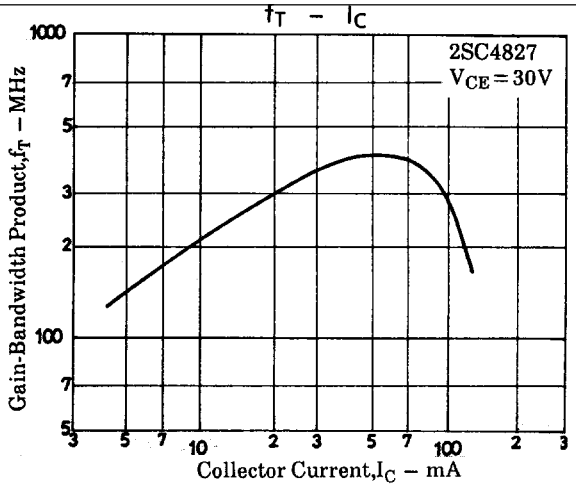


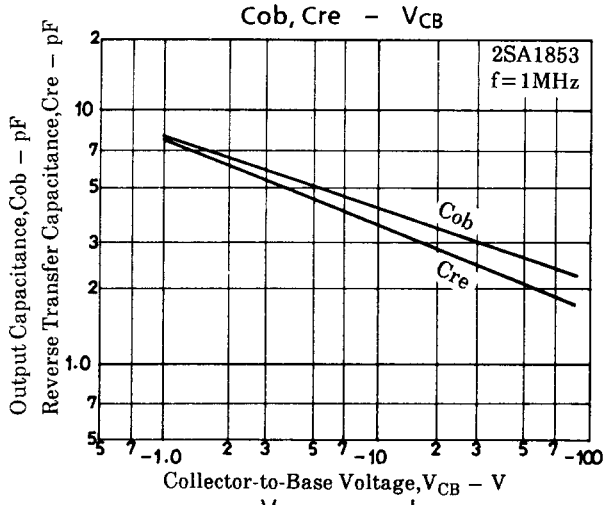


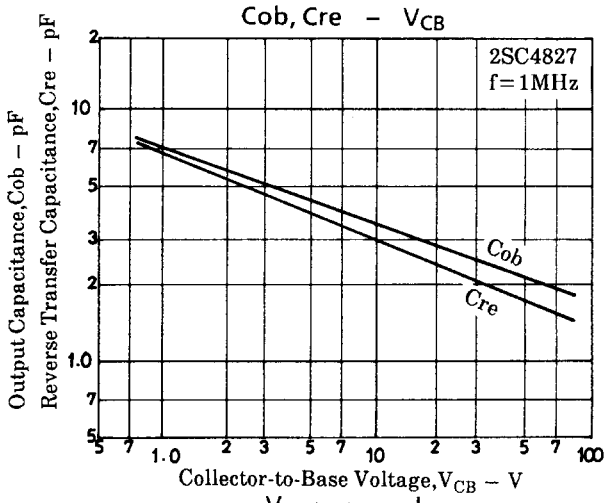


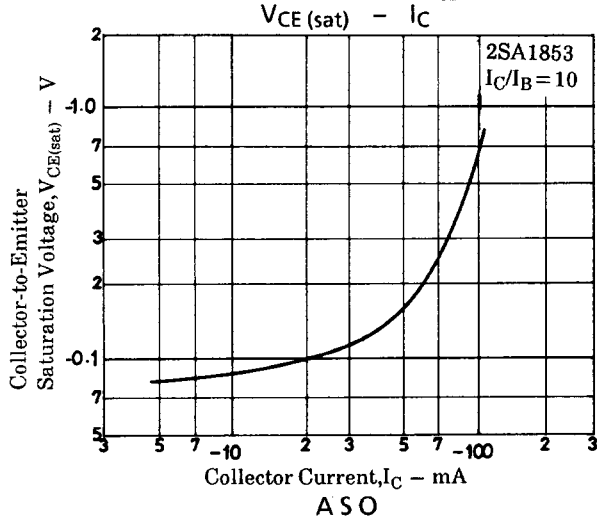


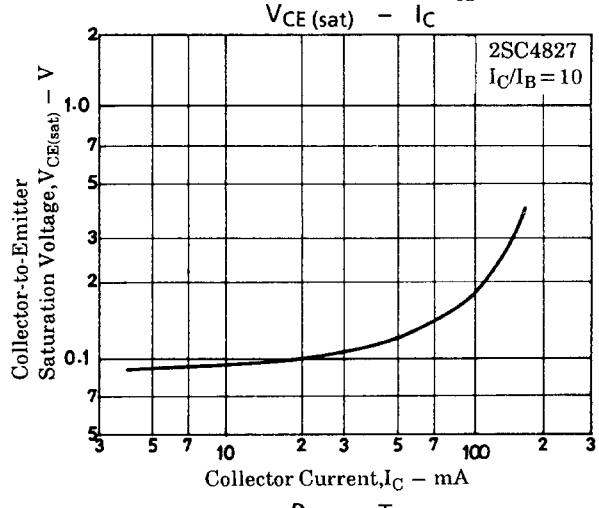

fT – IC
2SA1853
VCE = –30V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA

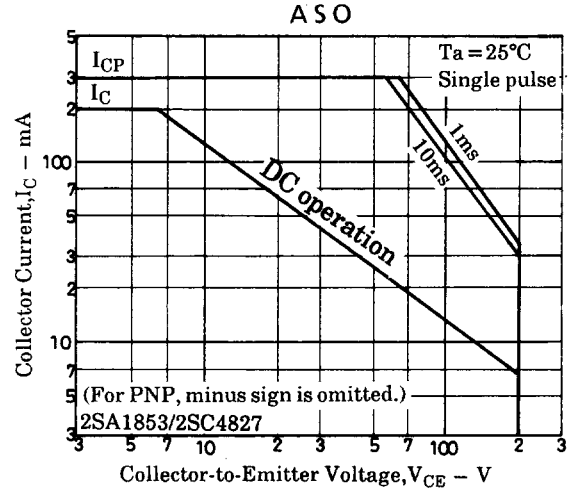

fT – IC
2SC4827
VCE = 30V
Gain-Bandwidth Product,fT – MHz
Collector Current,IC – mA

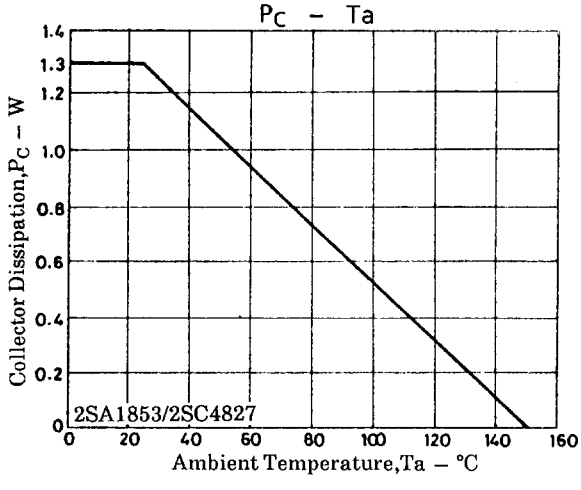

Cob, Cre – VCB
2SA1853
f = 1MHz
Cob
Cre
Output Capacitance,Cob – pF
Reverse Transfer Capacitance,Cre – pF
Collector-to-Base Voltage,VCB – V


Cob, Cre – VCB
2SC4827
f = 1MHz
Cob
Cre
Output Capacitance,Cob – pF
Reverse Transfer Capacitance,Cre – pF
Collector-to-Base Voltage,VCB – V


VCE (sat) – IC
2SA1853
IC/IB = 10
Collector-to-Emitter Saturation Voltage,VCE(sat) – V
Collector Current,IC – mA


VCE (sat) – IC
2SC4827
IC/IB = 10
Collector-to-Emitter Saturation Voltage,VCE(sat) – V
Collector Current,IC – mA


ASO
ICP
IC
Ta = 25°C
Single pulse
1ms
10ms
DC operation
(For PNP, minus sign is omitted.)
2SA1853/2SC4827
Collector Current,IC – mA
Collector-to-Emitter Voltage,VCE – V


PC – Ta
2SA1853/2SC4827
Collector Dissipation,PC – W
Ambient Temperature,Ta – °C