Ordering number:EN4132

PNP/NPN Epitaxial Planar Silicon Transistor

2SA1850/2SC4824

High Definition CRT Display Video Output Applications

Applications

· High Definition CRT Display Video Output Applications, Wide-Band Amplifier.

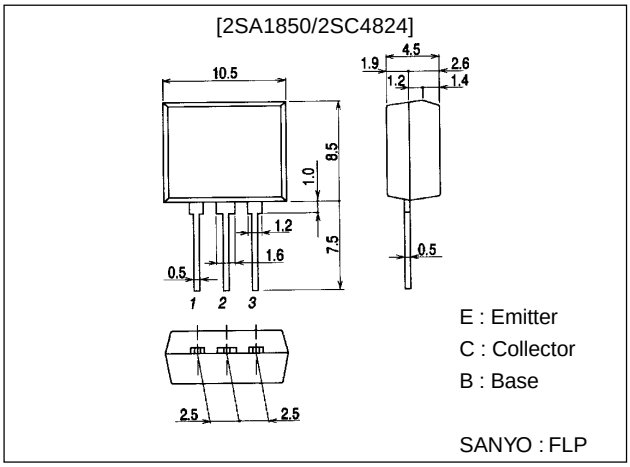
Features

· Adoption of FBET process.
· High Gain Bandwidth product (f_T=400MHz).
· High breakdown voltage (V_{CEO}=120V).
· Small reverse transfer capacitance and excellent high-frequency characteristic : C_{re}=1.7pF/NPN, 2.2pF/PNP.
· Usage of radial taping to meet automatic mounting.

Package Dimensions

unit:mm

2084



( ) : 2SA1850

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
Colletor Current (Pulse)	I_{CP}		(–)400	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}=(–)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	60*		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		(2.8)		pF
				2.1		pF
Reverse Transfer Capacitance	C_{re}	V_{CB}=(–)30V, f=1MHz		(2.2)		pF
				1.7		pF

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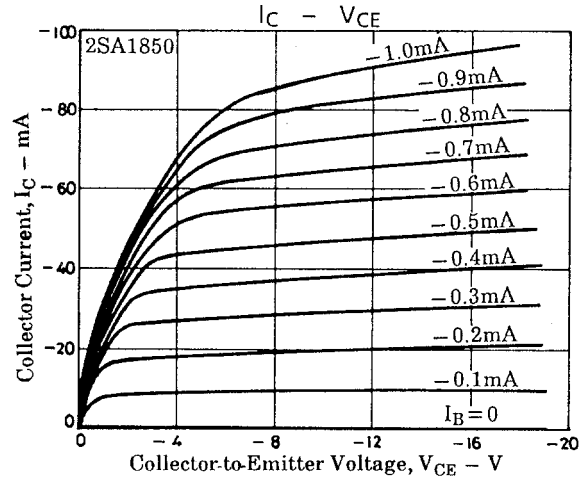
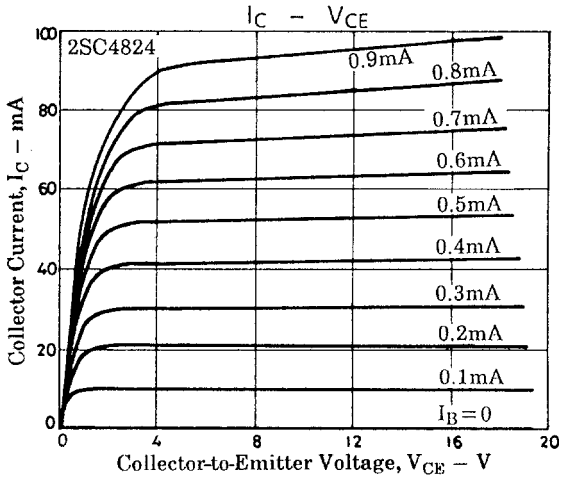
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

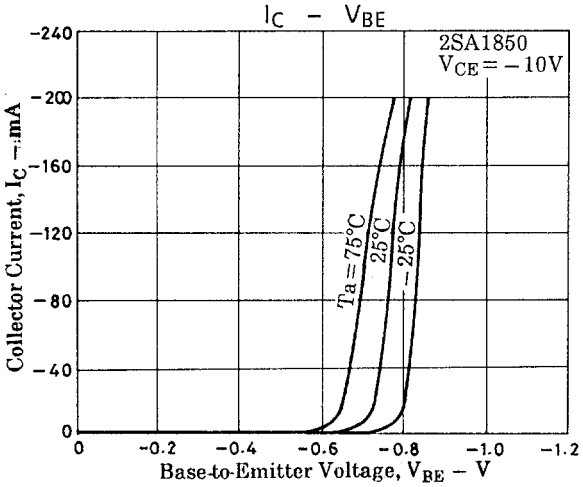
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)30mA, I_B=(–)3mA			(–)1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)30mA, I_B=(–)3mA			(–)1.0	V

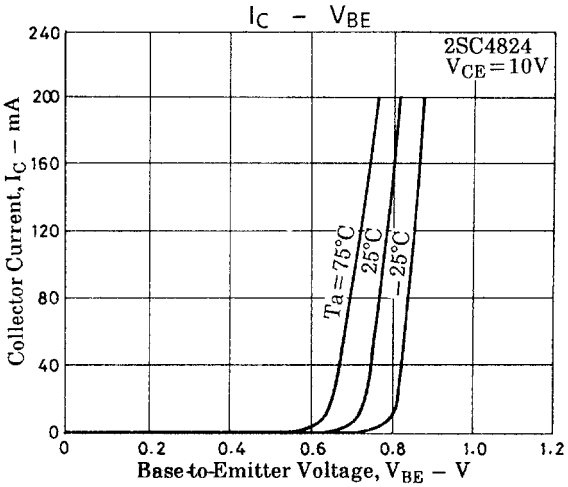
* : The 2SA1850/2SC4824 are classified by 10mA hFE as follows :

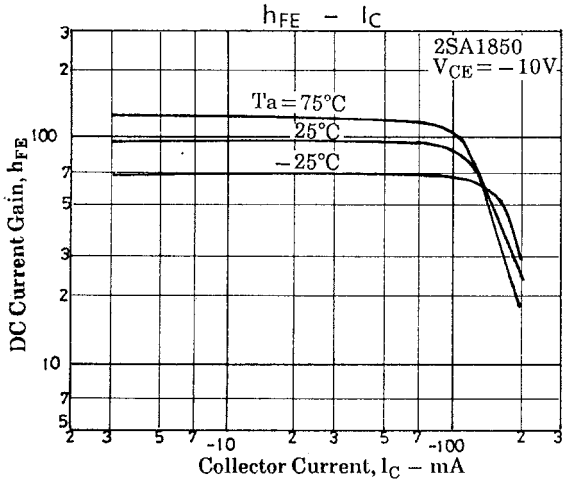
60 D 120	100 E 200	160 F 320

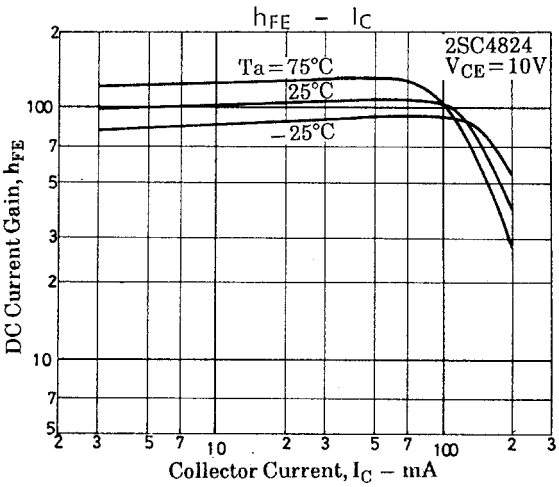


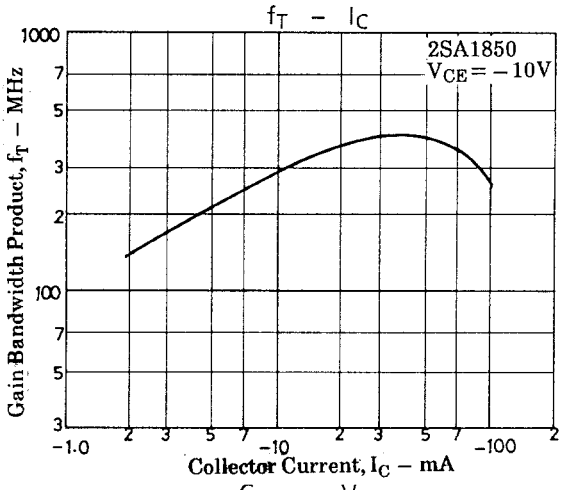


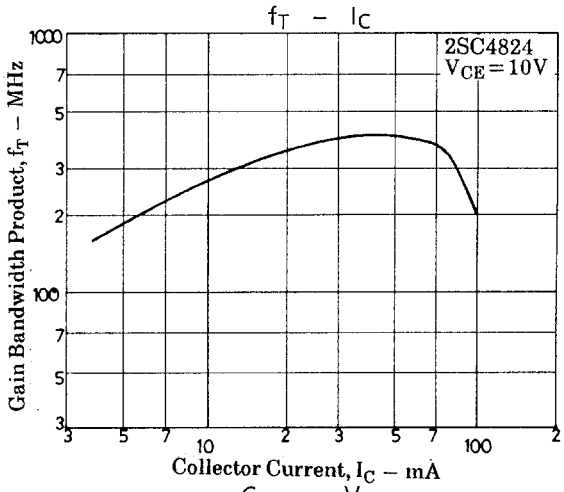


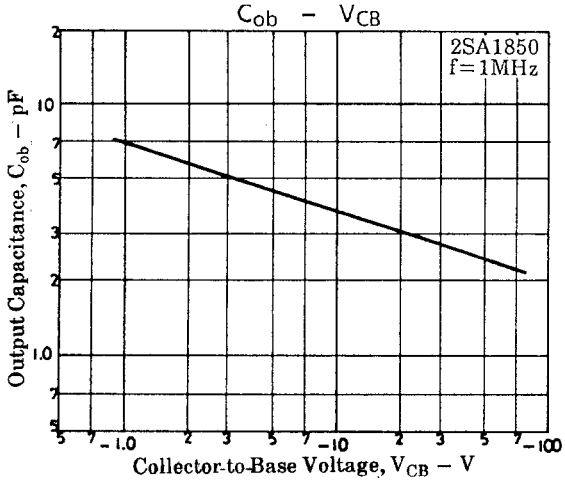


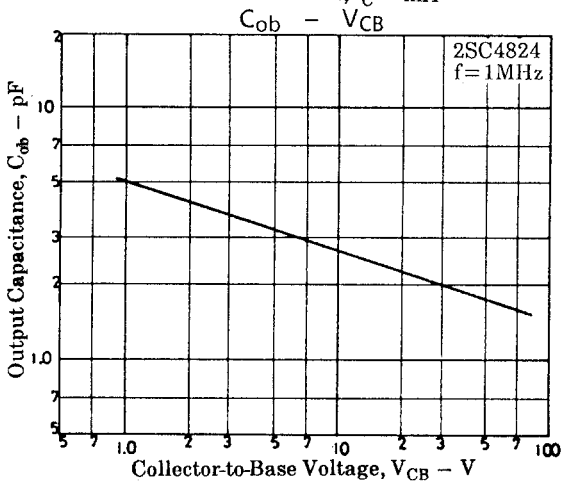


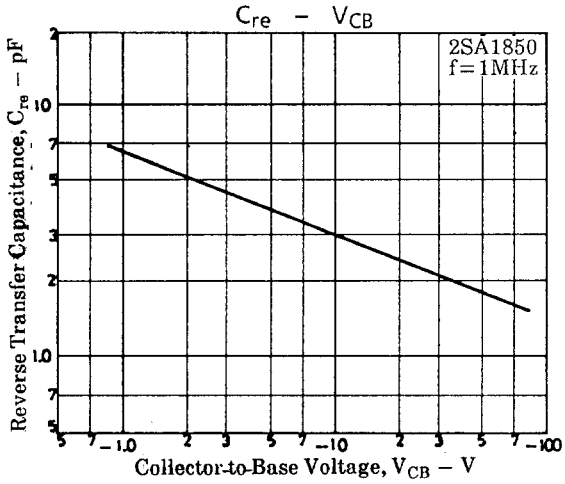


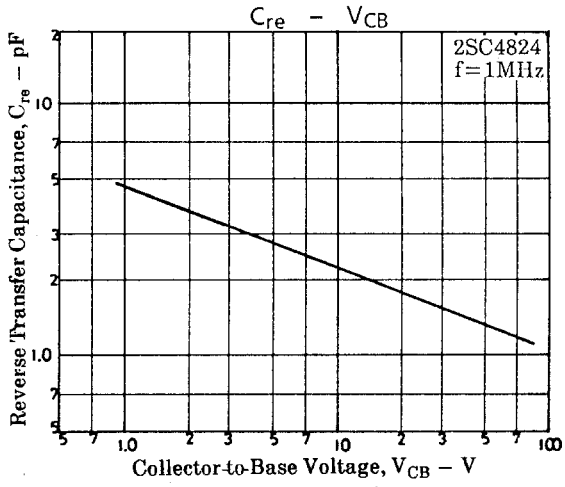

f_T – I_C
2SA1850
V_{CE} = –10V
Gain Bandwidth Product, f_T – MHz
Collector Current, I_C – mA

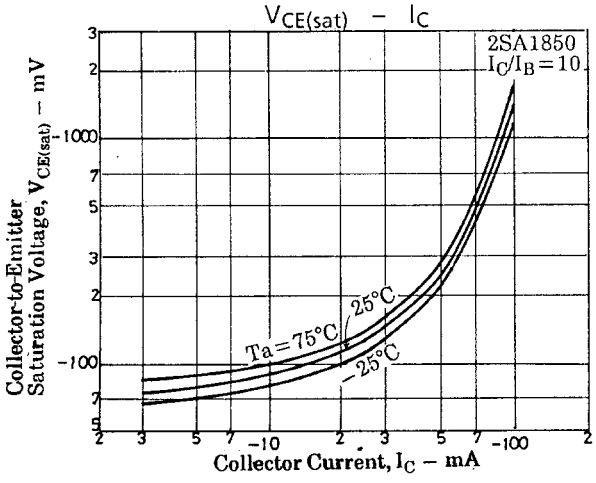

f_T – I_C
2SC4824
V_{CE} = 10V
Gain Bandwidth Product, f_T – MHz
Collector Current, I_C – mA

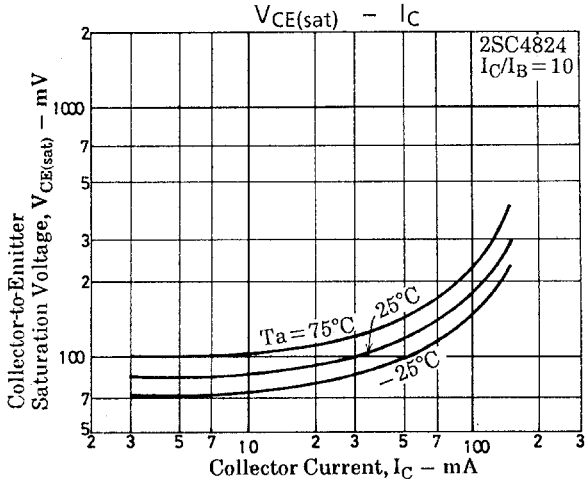

C_{ob} – V_{CB}
2SA1850
f=1MHz
Output Capacitance, C_{ob} – pF
Collector-to-Base Voltage, V_{CB} – V


C_{ob} – V_{CB}
2SC4824
f=1MHz
Output Capacitance, C_{ob} – pF
Collector-to-Base Voltage, V_{CB} – V


C_{re} – V_{CB}
2SA1850
f=1MHz
Reverse Transfer Capacitance, C_{re} – pF
Collector-to-Base Voltage, V_{CB} – V


C_{re} – V_{CB}
2SC4824
f=1MHz
Reverse Transfer Capacitance, C_{re} – pF
Collector-to-Base Voltage, V_{CB} – V


$V_{CE(sat)}$ – I_C
2SA1850
I_C/I_B = 10
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ – mV
Ta=75°C
25°C
–25°C
Collector Current, I_C – mA


$V_{CE(sat)}$ – I_C
2SC4824
I_C/I_B = 10
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ – mV
Ta=75°C
25°C
–25°C
Collector Current, I_C – mA