



2SA1403/2SC3597

Ultrahigh-Definition CRT Display Video Output Applications

Applications

- Ultrahigh-definition CRT display.
- Video output.
- Color TV chroma output.
- Wide-band amp.

Features

- High f_T : f_T typ=800MHz.
- Small reverse transfer capacitance and excellent high-frequency characteristic
: C_{re} =2.9pF (NPN), 4.6pF (PNP).
- Complementary pair with the 2SA1403/2SC3597.
- Adoption of FBET process.

() : 2SA1403

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)80	V
Collector-to-Emitter Voltage	V_{CEO}		(-)60	V
Emitter-to-Base Voltage	V_{EBO}		(-)4	V
Collector Current	I_C		(-)500	mA
Collector Current (Pulse)	I_{CP}		(-)1	A
Collector Dissipation	P_C		1.2	W
		$T_c=25^\circ\text{C}$	10	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)60\text{V}, I_E=0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)2\text{V}, I_C=0$			(-)0.1	μA
DC Current Gain	h_{FE1}	$V_{CE}=(-)10\text{V}, I_C=(-)50\text{mA}$	40*		320*	
	h_{FE2}	$V_{CE}=(-)10\text{V}, I_C=(-)400\text{mA}$	20			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}, I_C=(-)100\text{mA}$		800		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)100\text{mA}, I_B=(-)10\text{mA}$			0.6	V
					(-0.8)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)100\text{mA}, I_B=(-)10\text{mA}$			(-)1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}, I_E=0$	(-)80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}, R_{BE}=\infty$	(-)60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)100\mu\text{A}, I_C=0$	(-)4			V
Output Capacitance	C_{ob}	$V_{CB}=(-)30\text{V}, f=1\text{MHz}$		3.4		pF
				(5.2)		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB}=(-)30\text{V}, f=1\text{MHz}$		2.9		pF
				(4.6)		pF

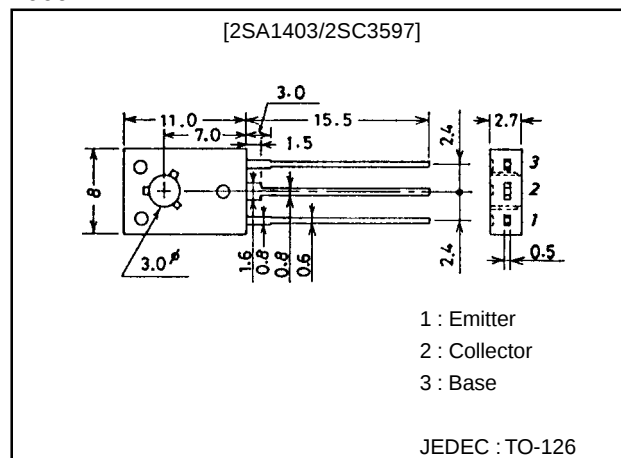
* : The 2SA1403/2SC3597 are classified by 50mA h_{FE} as follows :

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

unit:mm

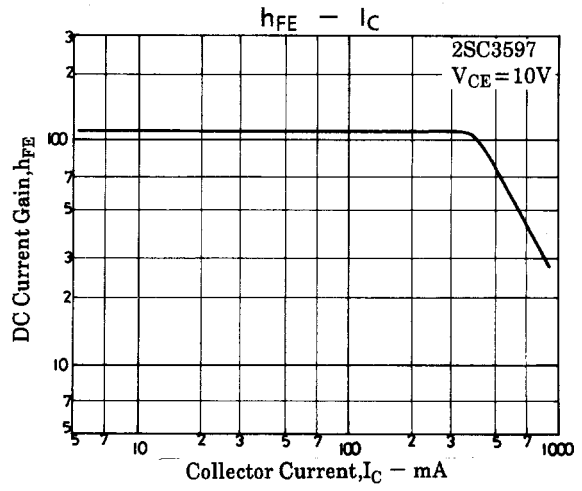
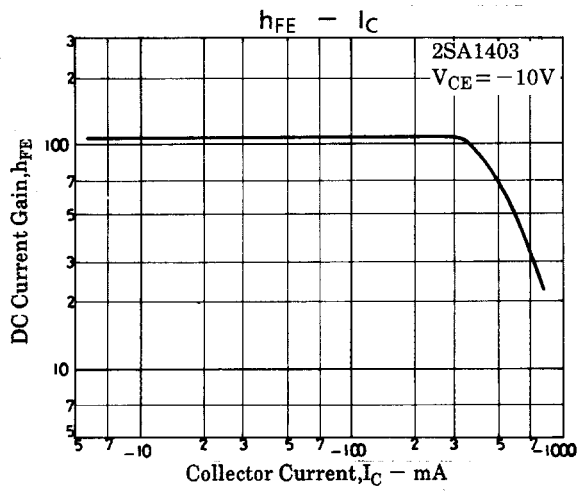
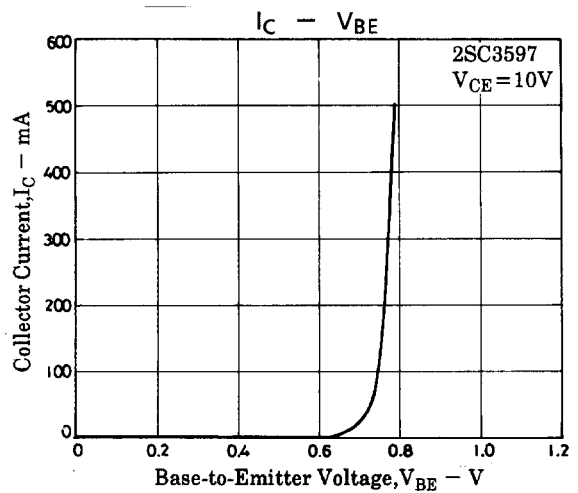
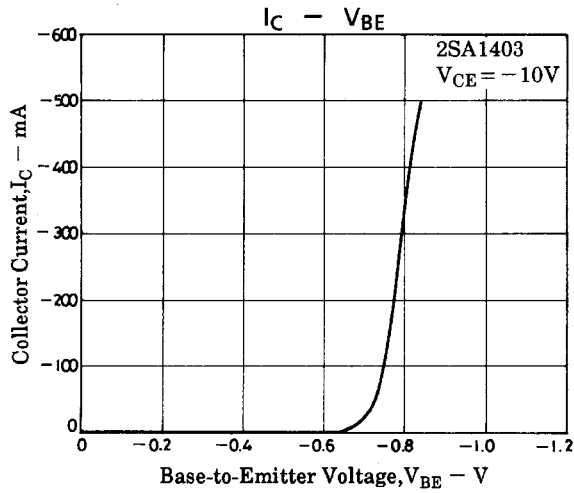
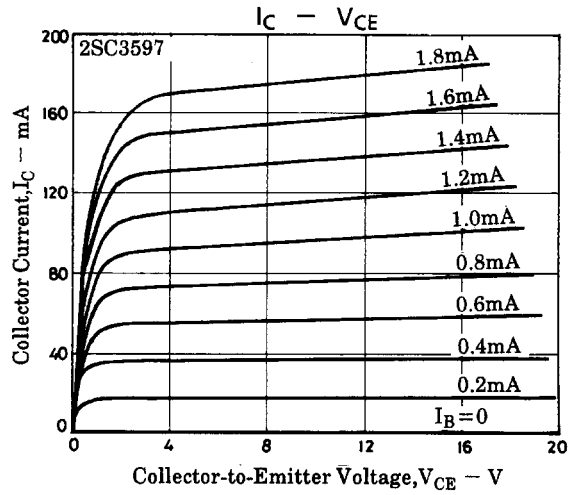
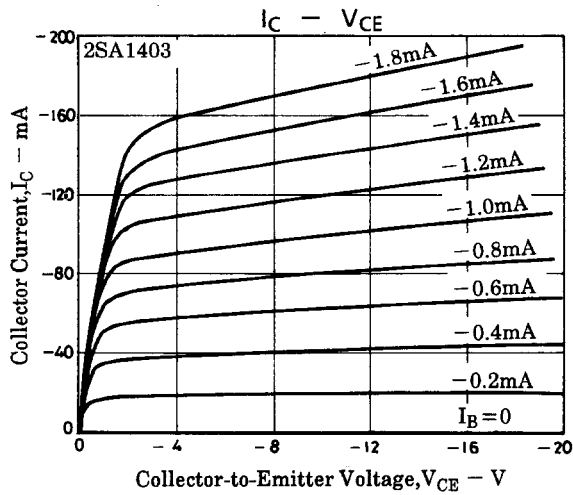
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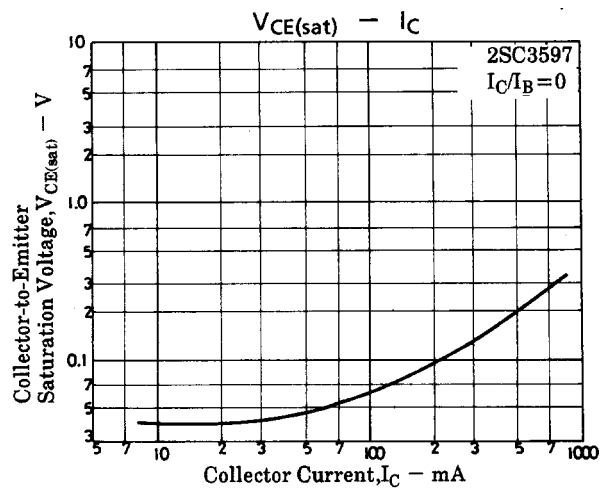
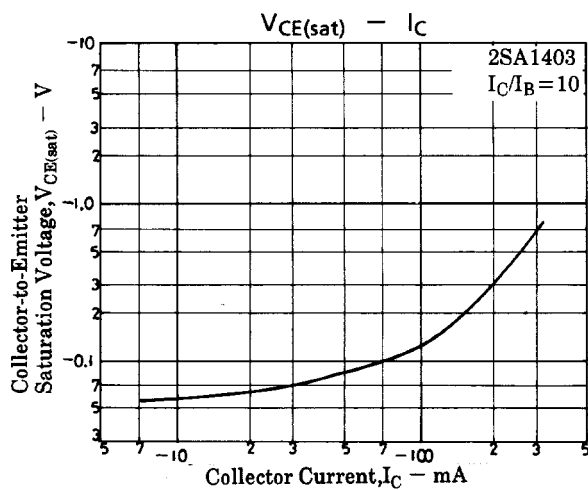
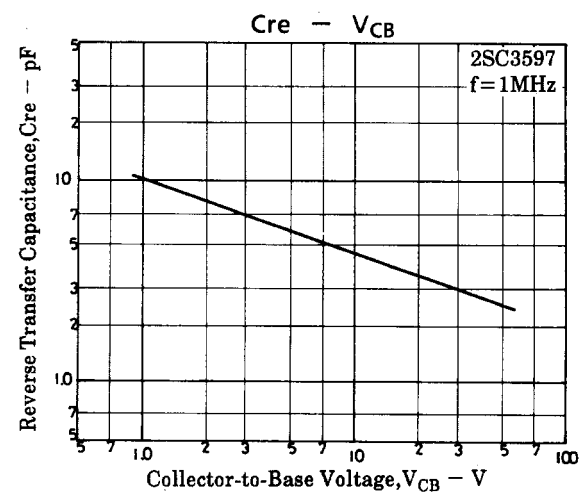
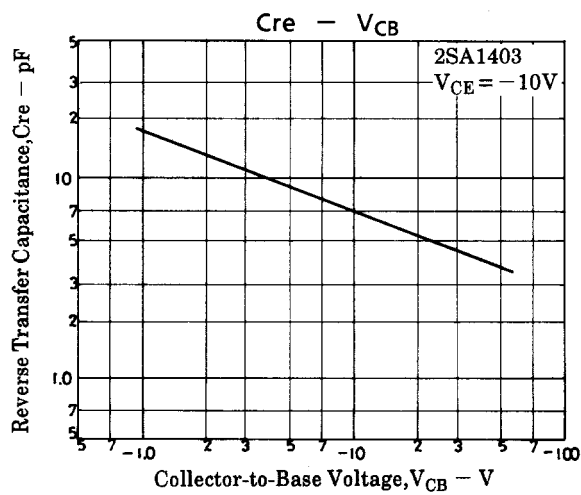
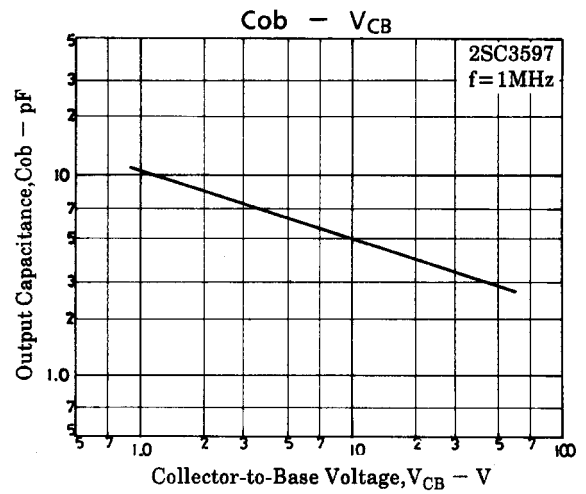
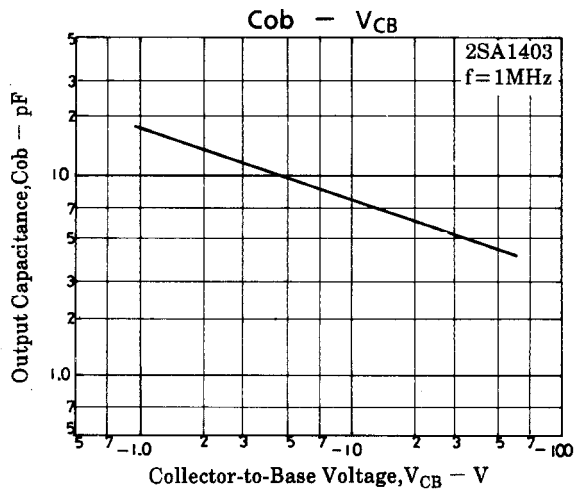
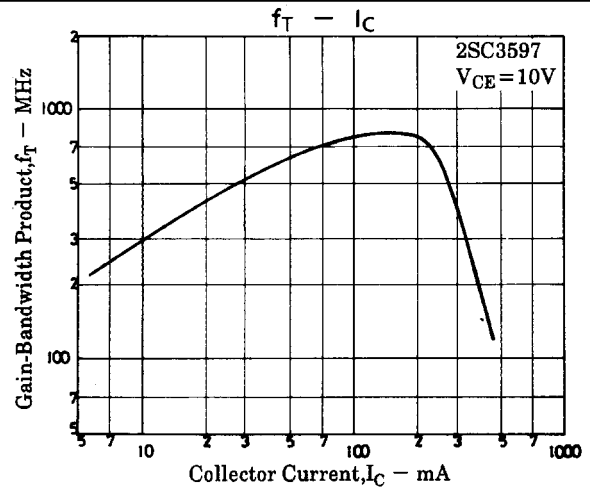
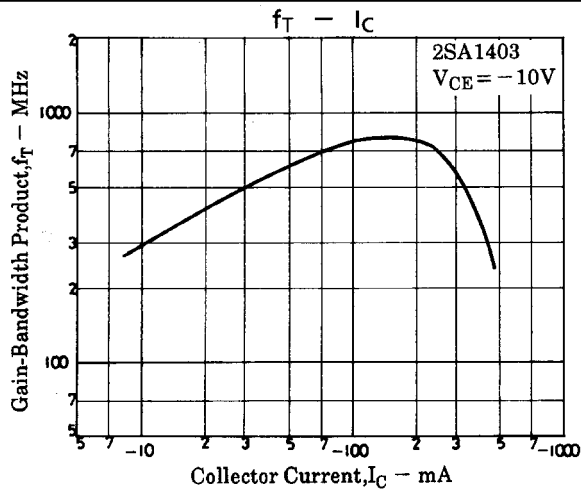
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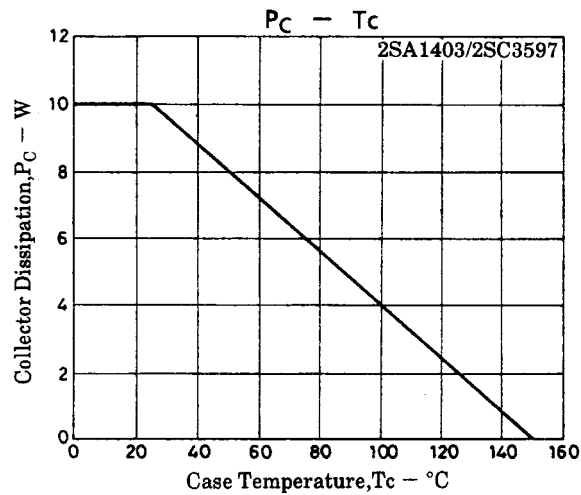
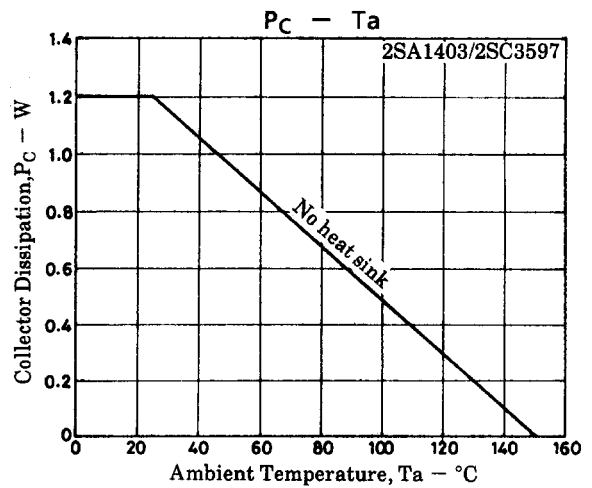
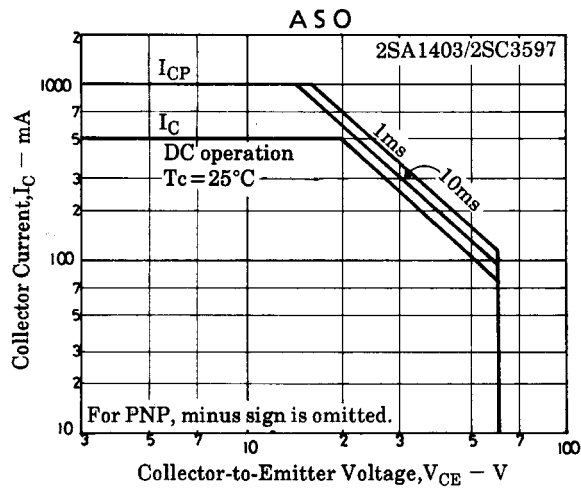
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