



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_{CB0}		(-)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_{CB0}	$V_{CB}=-60\text{V}, I_E=0$			(-)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

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

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Rank	C	D	E	F
h_{FE}	40 to 80	60 to 120	100 to 200	160 to 320

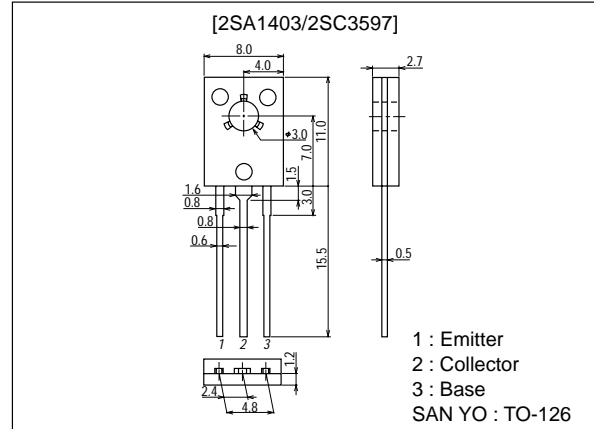
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Package Dimensions

unit:mm

2009B



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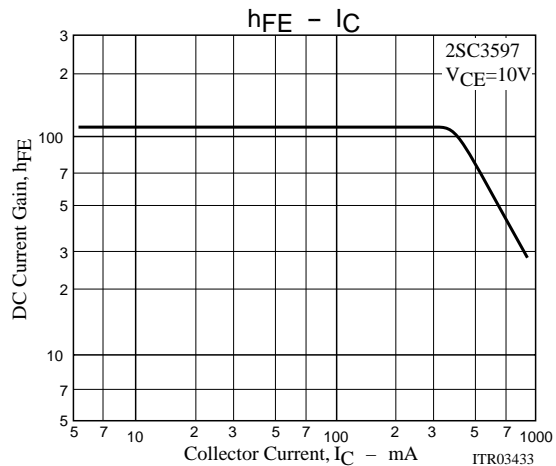
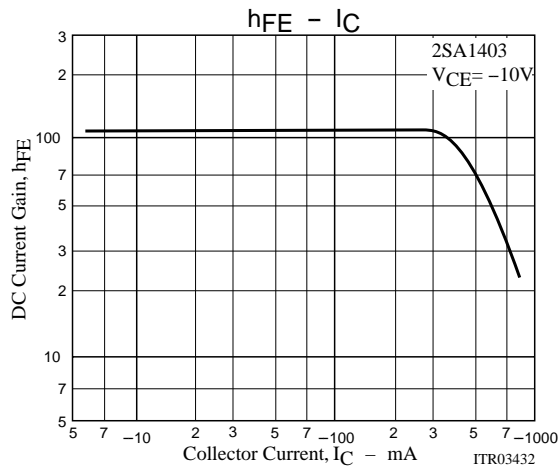
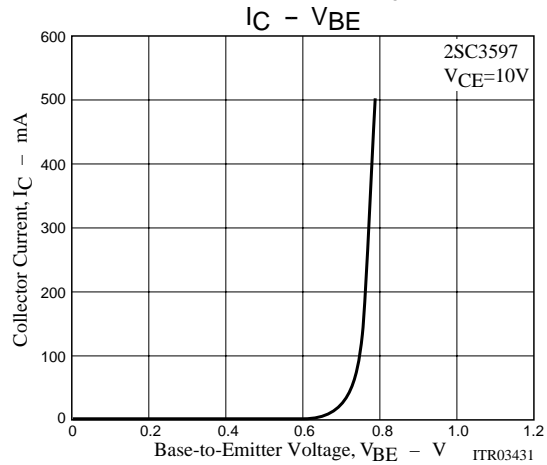
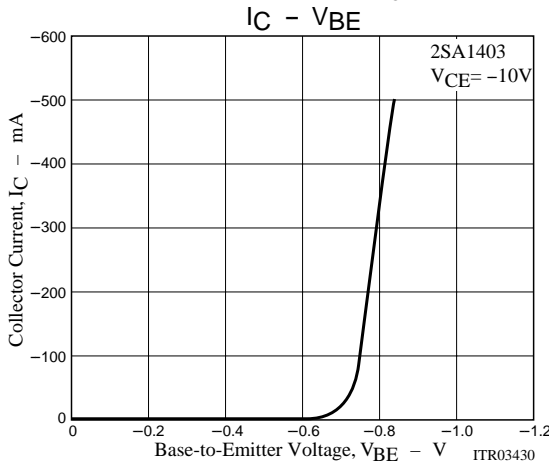
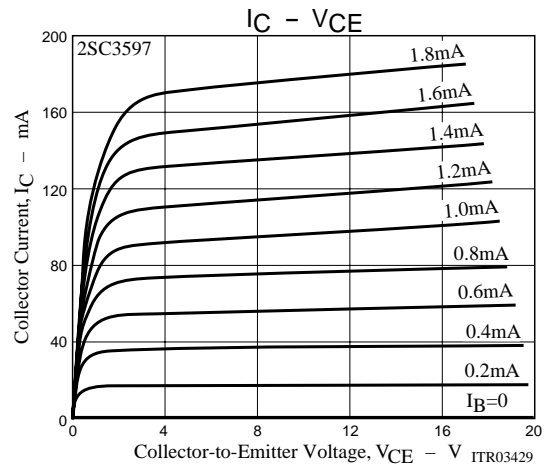
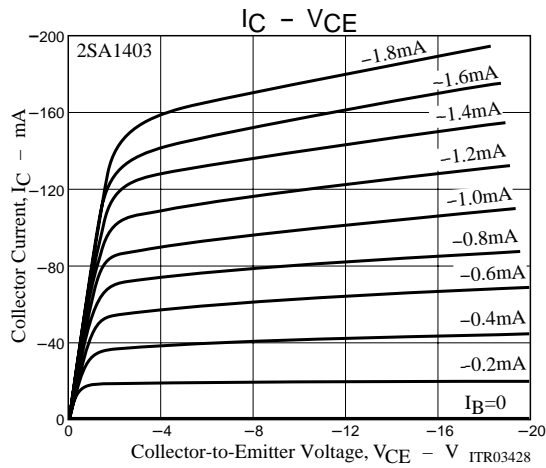
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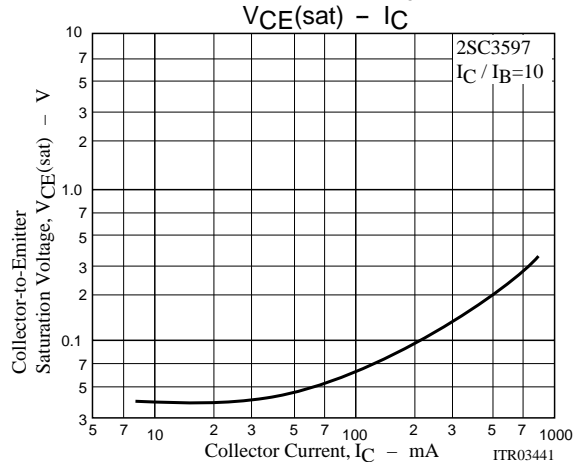
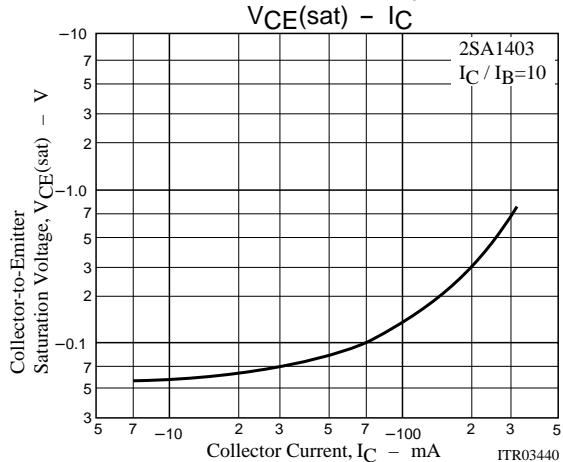
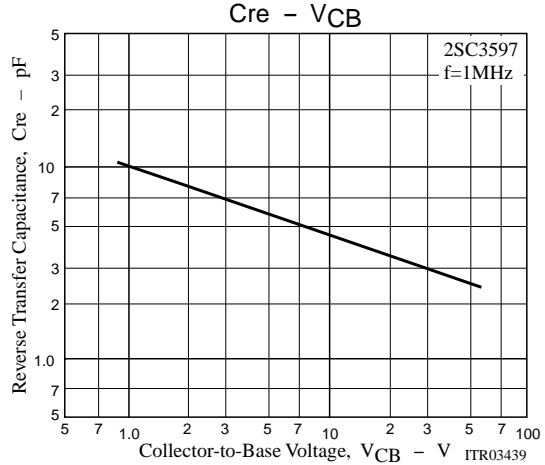
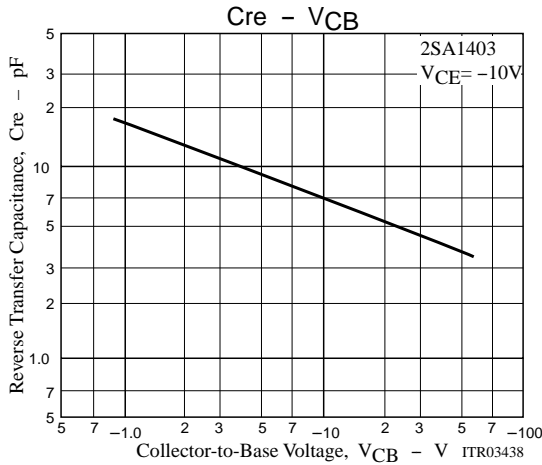
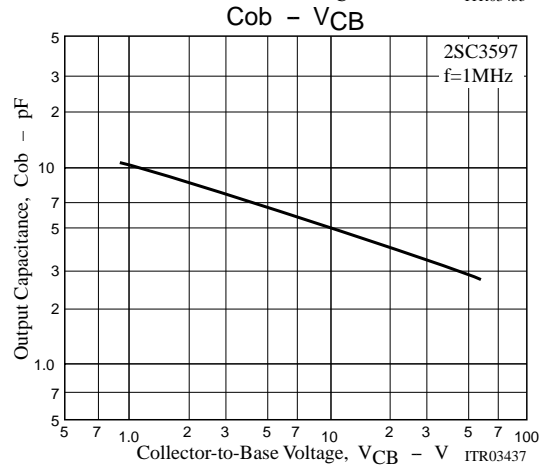
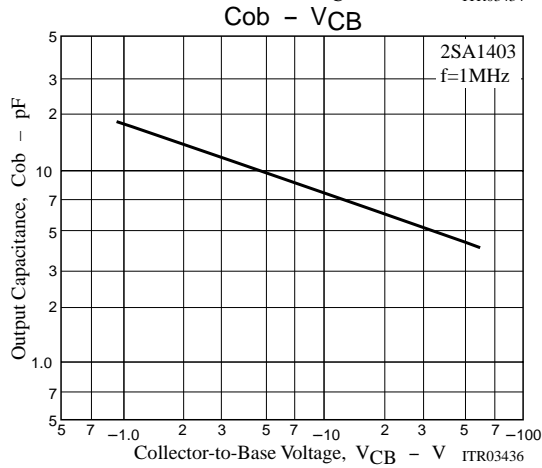
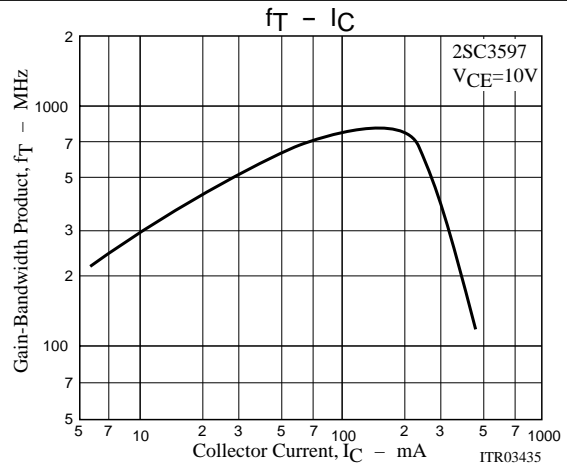
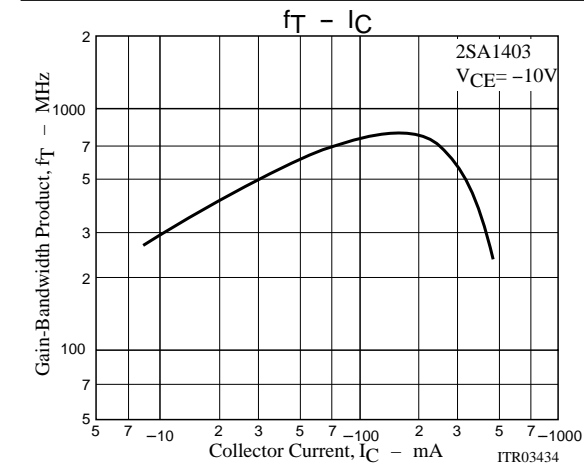
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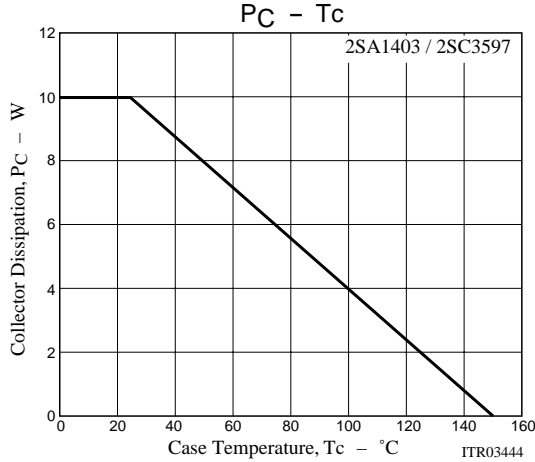
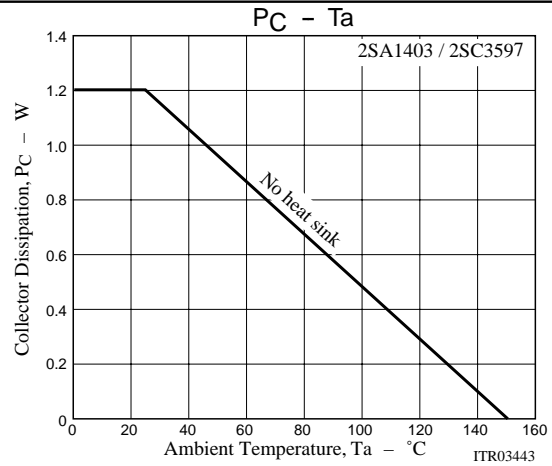
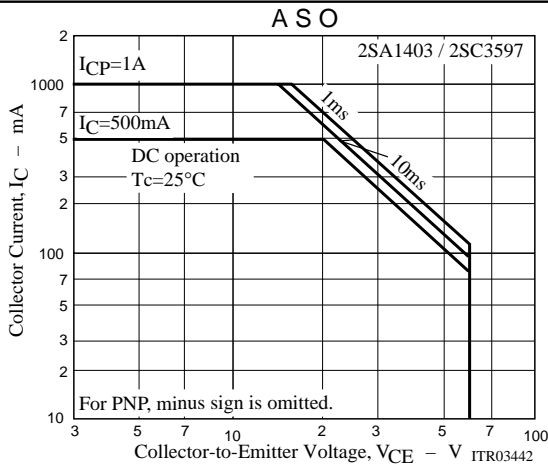
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)100mA, I_B=(-)10mA$			0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)100mA, I_B=(-)10mA$			(-0.8)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)	80		V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)	60		V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)100\mu A, I_C=0$	(-)	4		V
Output Capacitance	C_{ob}	$V_{CB}(-)30V, f=1MHz$		3.4		pF
				(5.2)		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB}(-)30V, f=1MHz$		2.9		pF
				(4.6)		pF



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