

<b>SANYO</b>	No.1764B	<b>2SA1405/2SC3599</b>
		PNP/NPN Epitaxial Planar Silicon Transistors <b>Ultrahigh-Definition CRT Display Video Output Applications</b>

**Applications**

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

**Features**

- High  $f_T$  :  $f_T$  typ = 500MHz.
- High breakdown voltage :  $V_{CEO} \geq 120V$ .
- Small reverse transfer capacitance and excellent high-frequency characteristic :  
Cre = 2.5pF(NPN), 3.8pF(PNP)
- Complementary pair with the 2SA1405/2SC3599.
- Adoption of FBET process.

( ) : 2SA1405

**Absolute Maximum Ratings at Ta = 25°C**

			unit
Collector-to-Base Voltage	$V_{CBO}$	(-)120	V
Collector-to-Emitter Voltage	$V_{CEO}$	(-)120	V
Emitter-to-Base Voltage	$V_{EBO}$	(-)4	V
Collector Current	$I_C$	(-)300	mA
Collector Current (Pulse)	$I_{CP}$	(-)600	mA
Collector Dissipation	$P_C$	1.2	W
		8	W
Junction Temperature	$T_j$	150	°C
Storage Temperature	$T_{stg}$	-55 to +150	°C

**Electrical Characteristics at Ta = 25°C**

			min	typ	max	unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)80V, I_E = 0$			(-)0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)2V, I_C = 0$			(-)1.0	$\mu A$
DC Current Gain	$h_{FE}(1)$	$V_{CE} = (-)10V, I_C = (-)50mA$	40*		320*	
	$h_{FE}(2)$	$V_{CE} = (-)10V, I_C = (-)250mA$	20			
Gain Bandwidth Product	$f_T$	$V_{CE} = (-)10V, I_C = (-)50mA$		500		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)70mA, I_B = (-)7mA$			0.6	V
					(-0.8)	

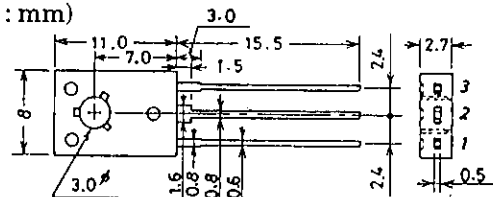
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\* : The 2SA1405/2SC3599 are classified by 50mA  $h_{FE}$  as follows :

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

**Package Dimensions 2009B**

(unit : mm)



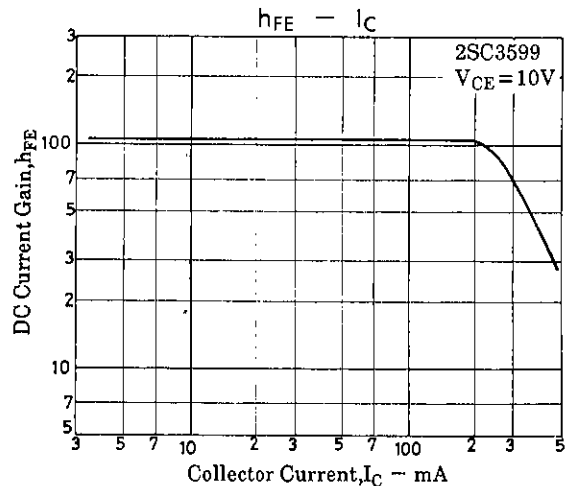
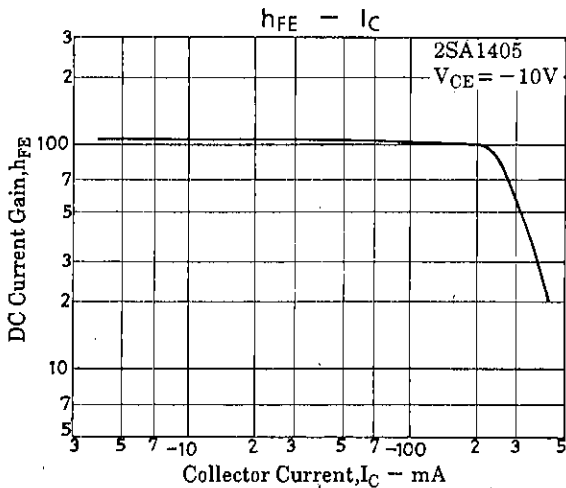
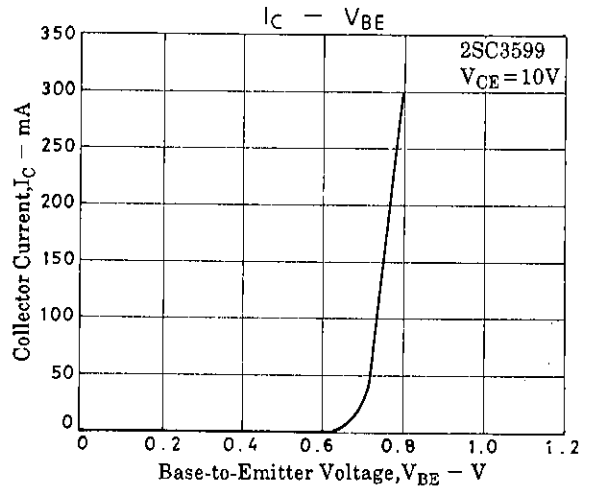
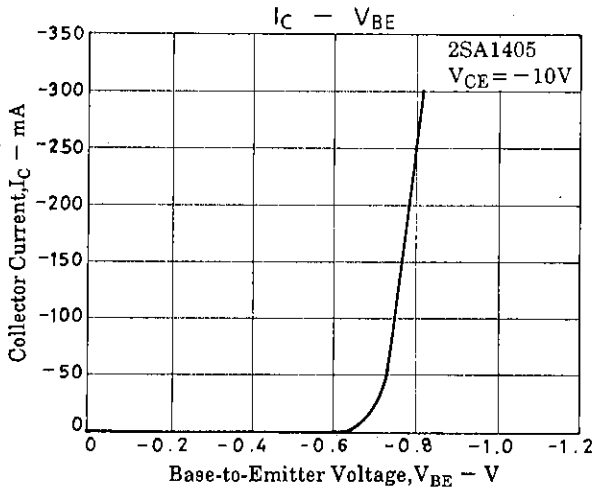
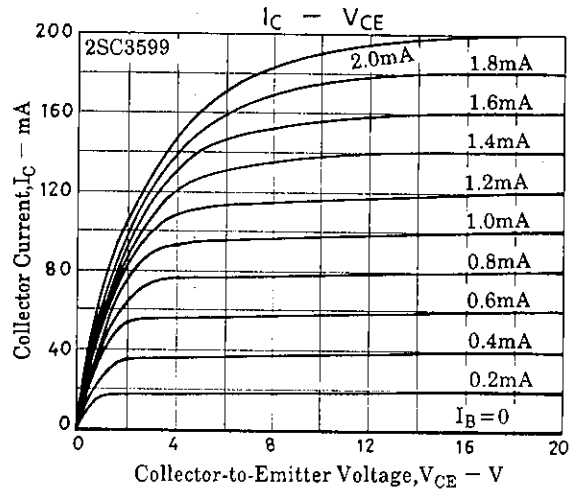
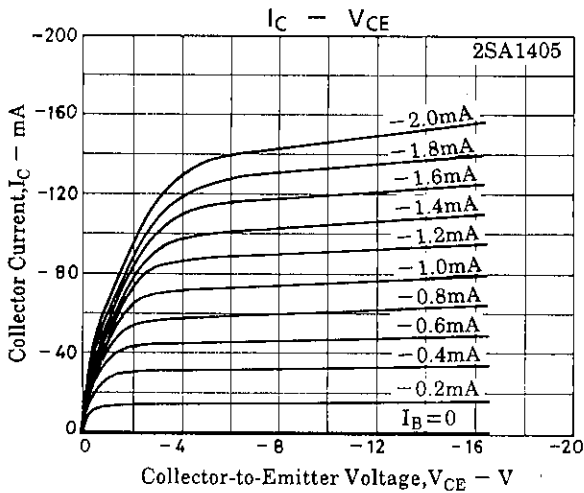
- 1 : Emitter
- 2 : Collector
- 3 : Base

JEDEC : TO126

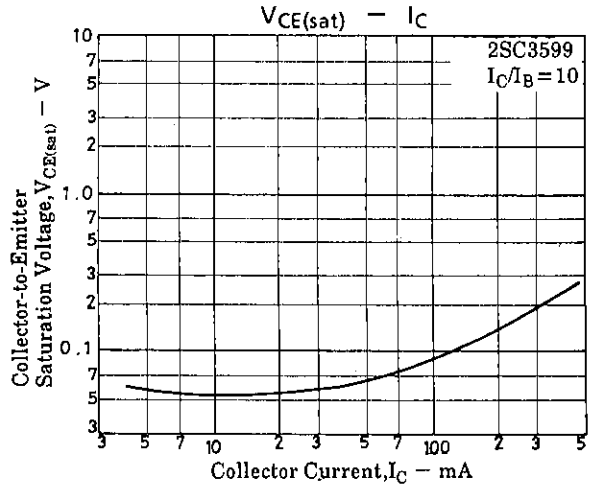
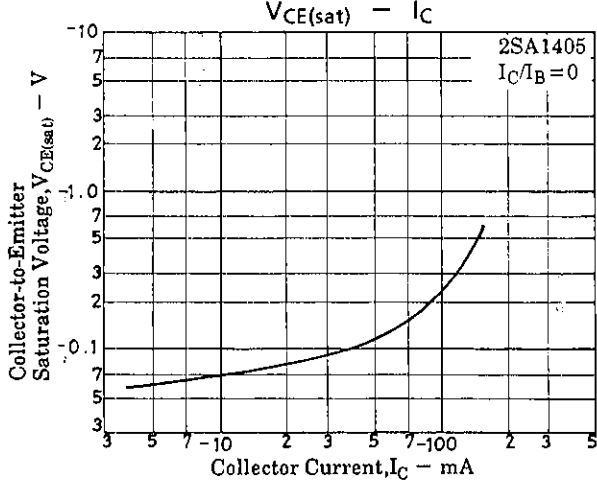
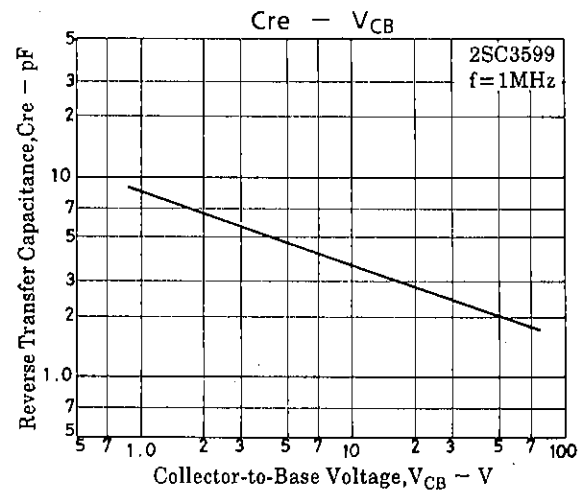
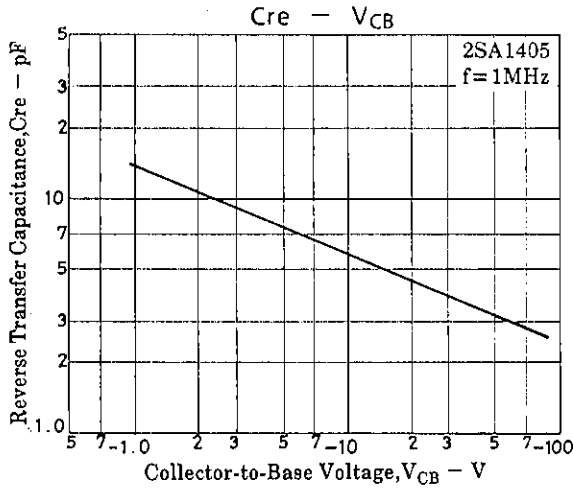
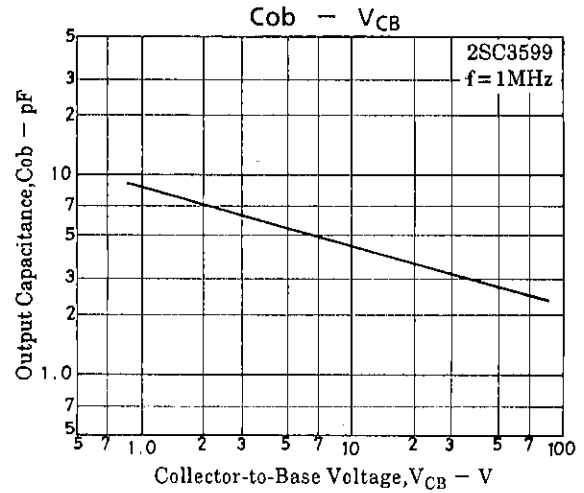
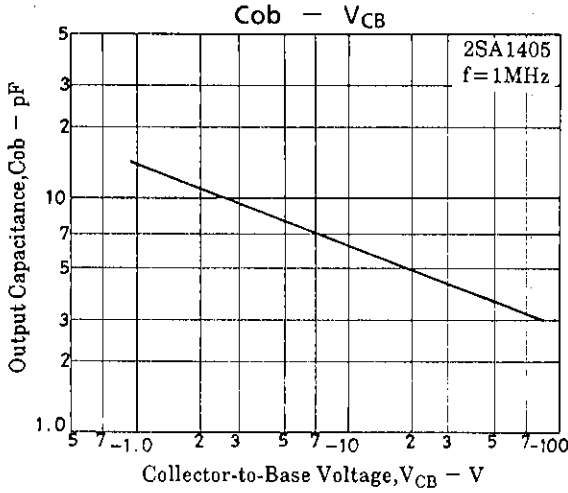
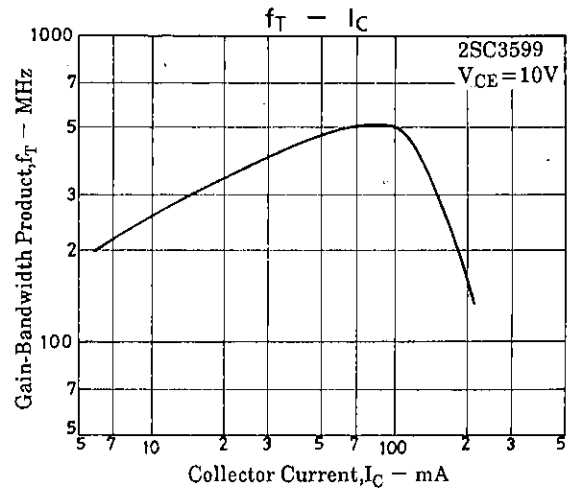
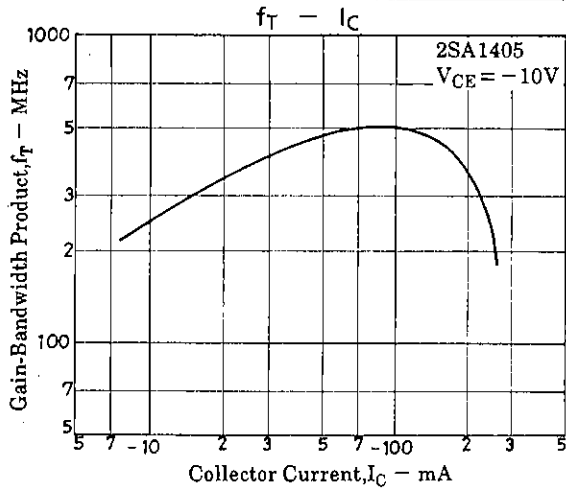
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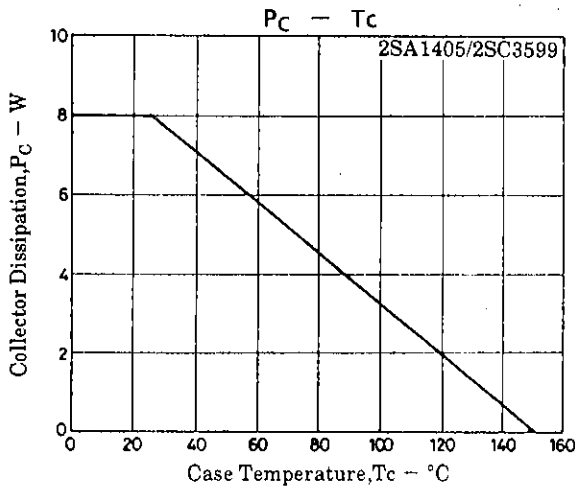
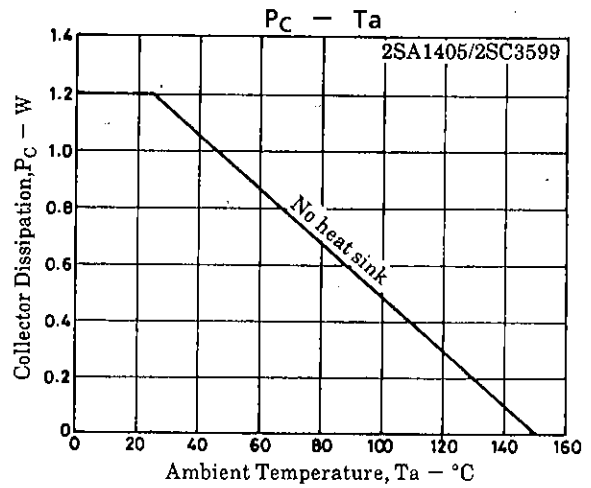
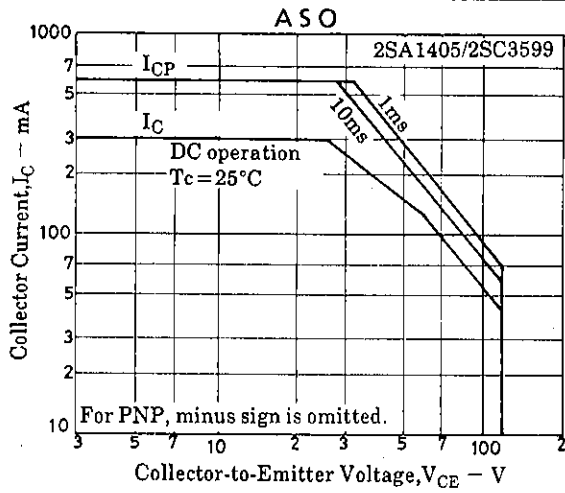
			min	typ	max	unit
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)70\text{mA}, I_B = (-)7\text{mA}$			(-)1.0	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu\text{A}, I_E = 0$	(-)120			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1\text{mA}, R_{BE} = \infty$	(-)120			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)100\mu\text{A}, I_C = 0$	(-)4			V
Output Capacitance	$C_{ob}$	$V_{CB} = (-)30\text{V}, f = 1\text{MHz}$		2.9		pF
				(4.3)		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB} = (-)30\text{V}, f = 1\text{MHz}$		2.5		pF
				(3.8)		pF



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