



SANYO Semiconductors

DATA SHEET

2SA1407 / 2SC3601 — PNP / NPN Epitaxial Planar Silicon Transistors

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=400MHz.
- High breakdown voltage : $V_{CEO} \geq 200V$.
- Small reverse transfer capacitance and excellent high frequency characteristics : $C_{re}=2.0pF$ (NPN), $2.5pF$ (PNP).
- Complementary PNP and NPN types.
- Adoption of FBET process.

Specifications () : 2SA1407

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

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}		(-)4	V
Collector Current	I_C		(-)150	mA
Collector Current (Pulse)	I_{CP}		(-)300	mA
Collector Dissipation	P_C		1.2	W
		$T_c=25^\circ C$	7	W
Junction Temperature	T_J		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

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2SA1407 / 2SC3601

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)150V, I_E = 0A$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)2V, I_C = 0A$			(-)1.0	μA
DC Current Gain	h_{FE1}	$V_{CE} = (-)10V, I_C = (-)10mA$	40*		320*	
	h_{FE2}	$V_{CE} = (-)10V, I_C = (-)100mA$	20			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)30V, I_C = (-)50mA$		400		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)50mA, I_B = (-)5mA$			(-0.8)0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)50mA, I_B = (-)5mA$			(-)1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0A$	(-)200			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)200			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)100\mu A, I_C = 0A$	(-)4			V
Output Capacitance	Cob	$V_{CB} = (-)30V, f = 1MHz$		(3.0)2.5		pF
Reverse Transfer Capacitance	Cre	$V_{CB} = (-)30V, f = 1MHz$		(2.5)2.0		pF

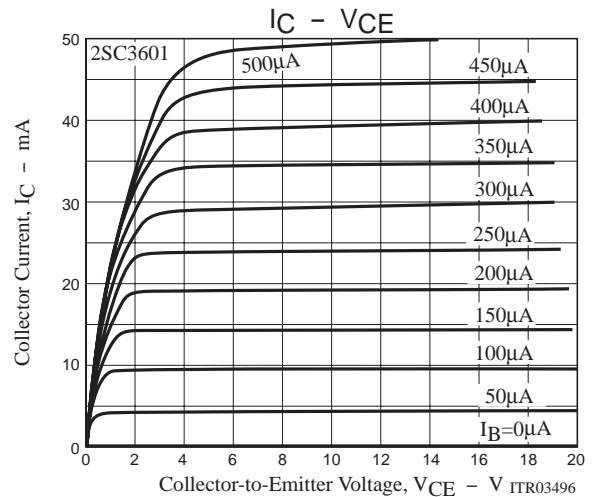
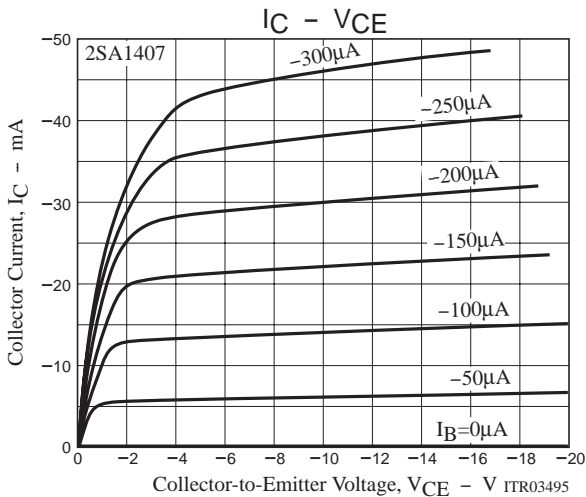
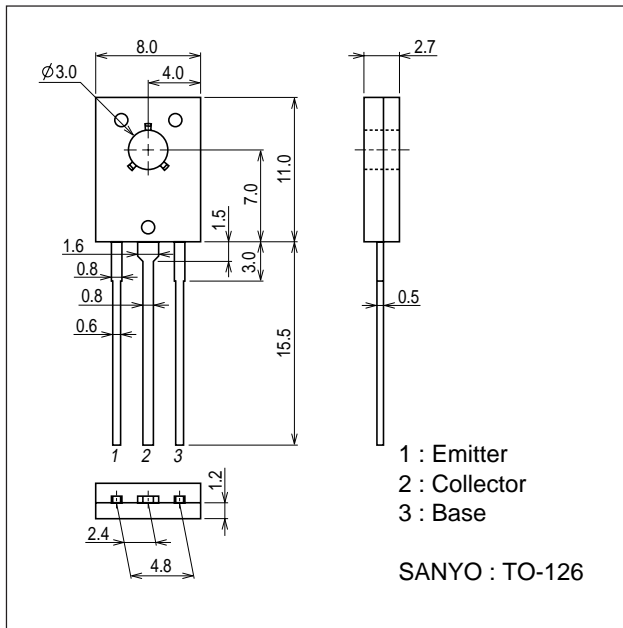
* : The 2SA1407/2SC3601 are classified by 10mA h_{FE} as follows :

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

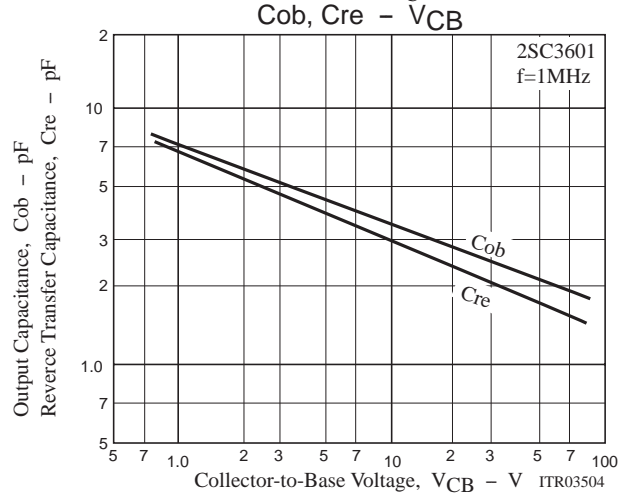
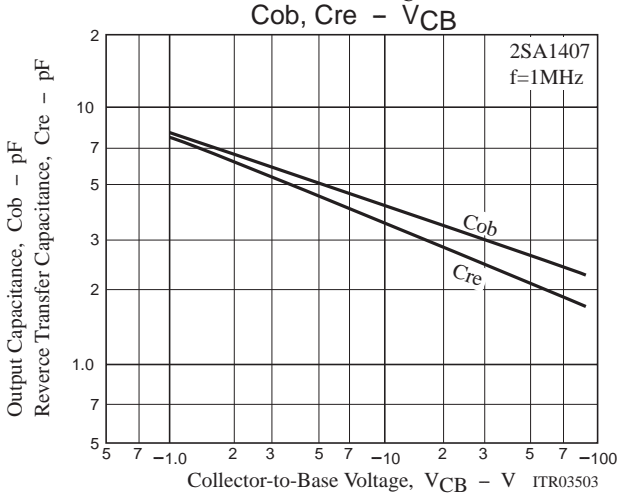
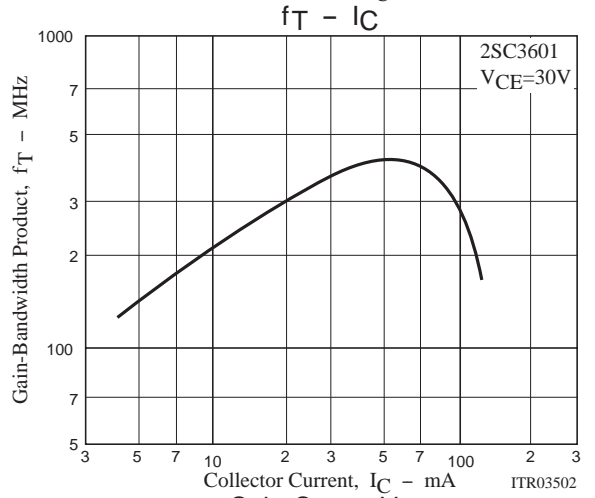
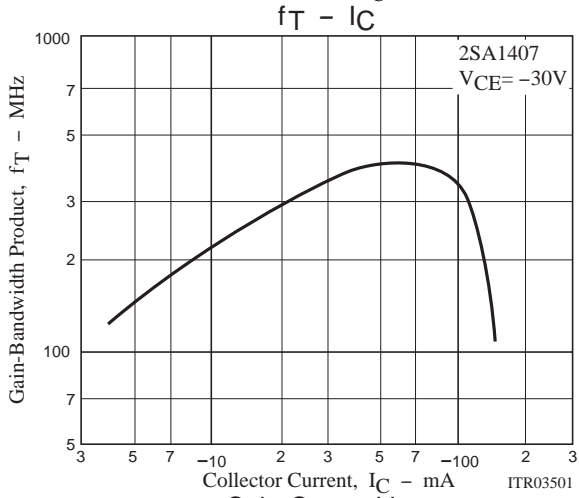
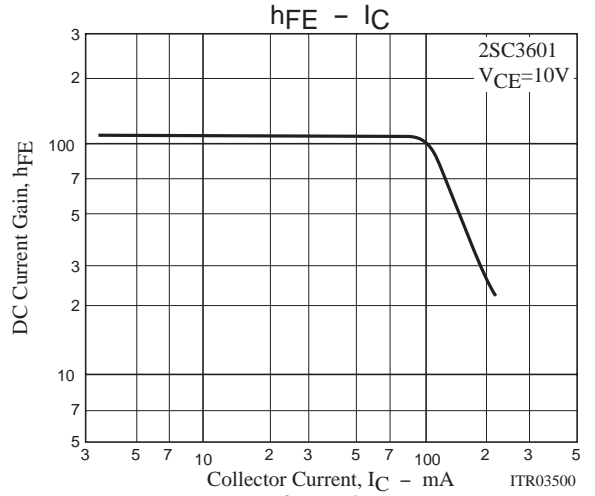
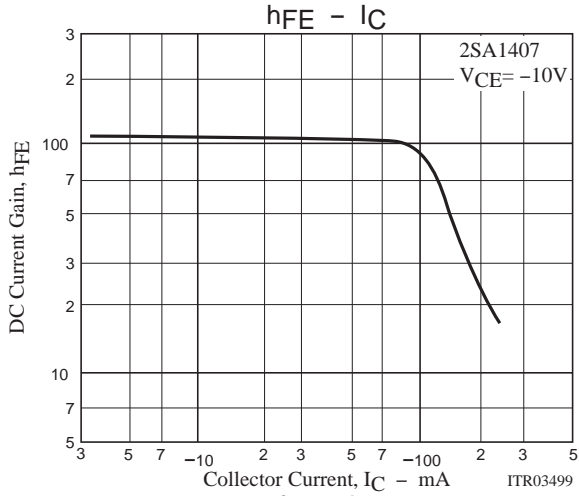
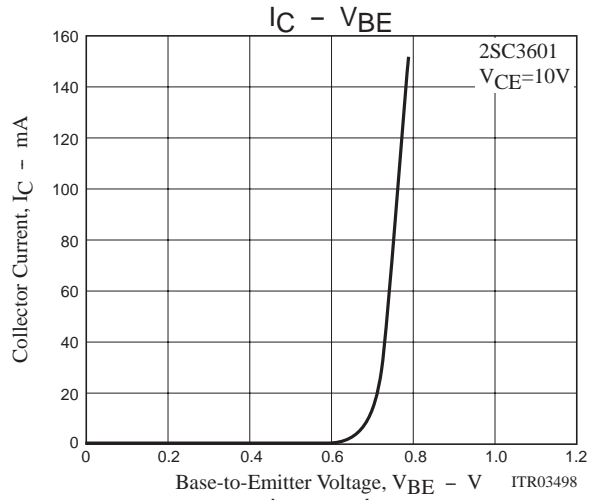
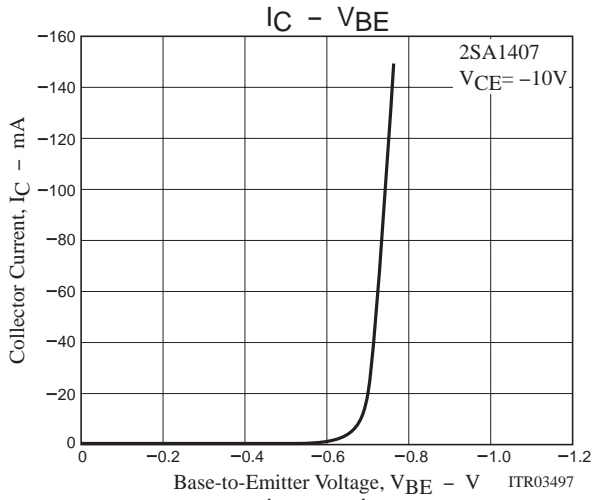
Package Dimensions

unit : mm (typ)

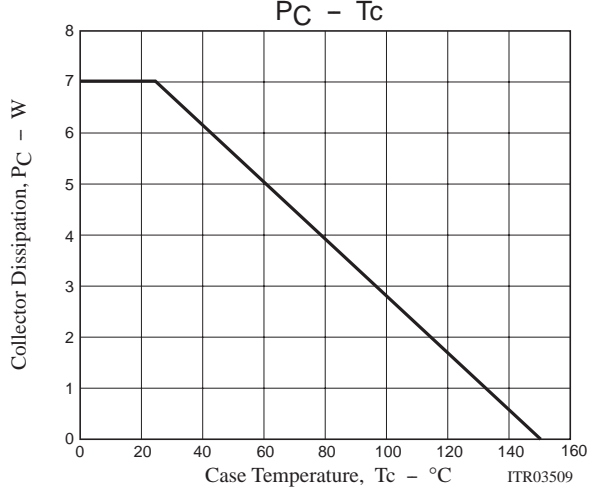
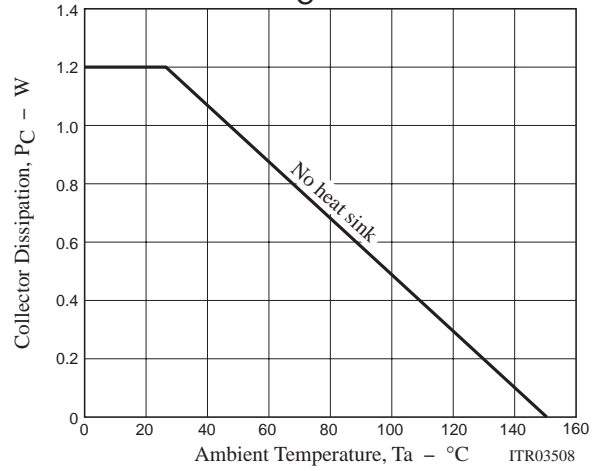
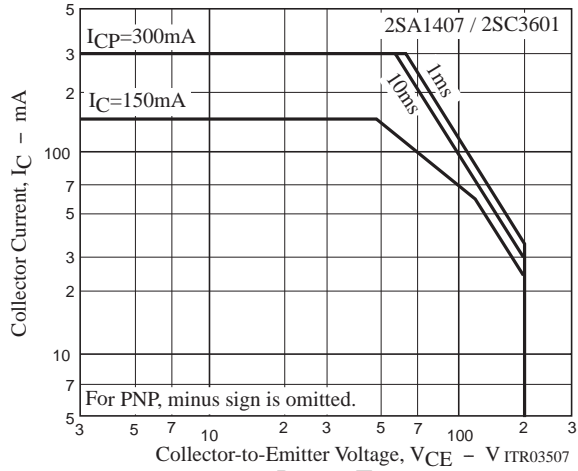
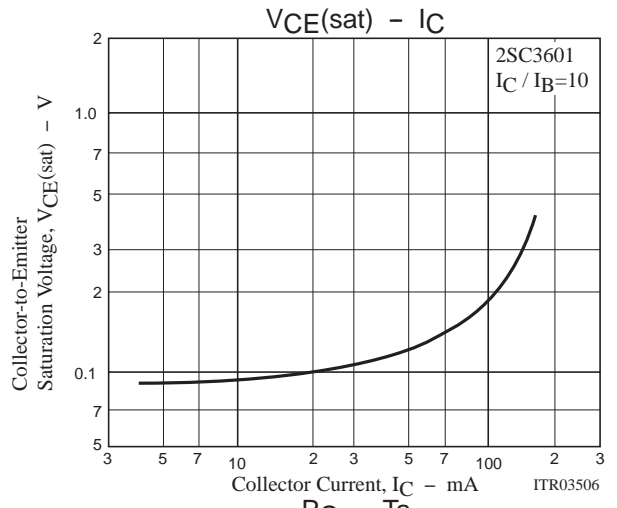
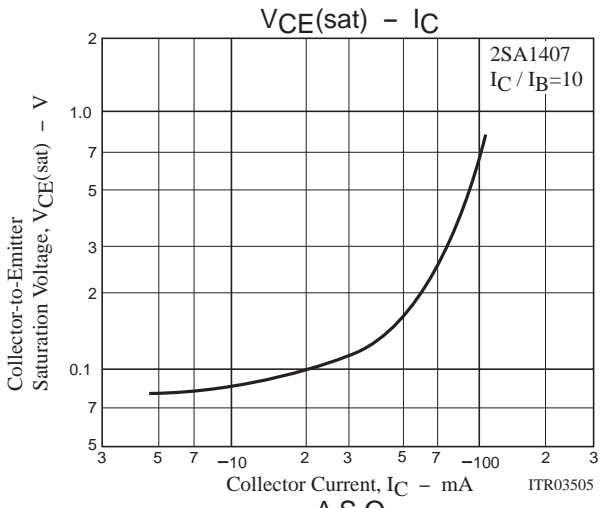
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