

PNP/NPN Epitaxial Planar Silicon Transistors

SANYO**2SA1407/2SC3601****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 : $f_T \text{ typ}=400\text{MHz}$.
- High breakdown voltage : $V_{CEO} \geq 200\text{V}$.
- Small reverse transfer capacitance and excellent high-frequency characteristic
: $C_{re}=2.0\text{pF}$ (NPN), 2.5pF (PNP).
- Complementary PNP and NPN types.
- Adoption of FBET process.

() : 2SA1407

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

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
		$T_c=25^\circ\text{C}$	7	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}	$V_{CB}=(-)150\text{V}$, $I_E=0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)2\text{V}$, $I_C=0$			(-)1.0	μA
DC Current Gain	h_{FE1}	$V_{CE}=(-)10\text{V}$, $I_C=(-)10\text{mA}$	40*		320*	
	h_{FE2}	$V_{CE}=(-)10\text{V}$, $I_C=(-)100\text{mA}$	20			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)30\text{V}$, $I_C=(-)50\text{mA}$		400		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)50\text{mA}$, $I_B=(-)5\text{mA}$			0.6	V
					(-0.8)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=50\text{mA}$, $I_B=(-)5\text{mA}$			(-)1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}$, $I_E=0$	(-)200			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}$, $R_{BE}=\infty$	(-)200			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)100\mu\text{A}$, $I_C=0$	(-)4			V
Output Capacitance	C_{ob}	$V_{CB}=(-)30\text{V}$, $f=1\text{MHz}$		2.5		pF
				(3.0)		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB}=(-)30\text{V}$, $f=1\text{MHz}$		2.0		pF
				(2.5)		pF

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

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

SANYO Electric Co.,Ltd. Semiconductor Business Headquarters

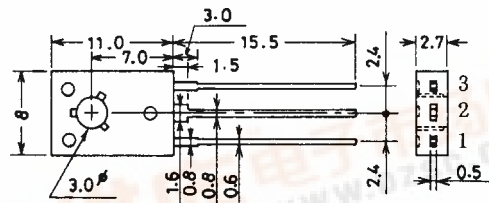
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Package Dimensions

unit:mm

2009B

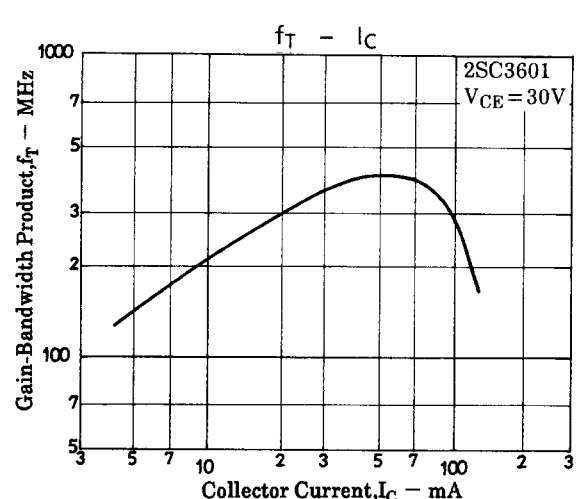
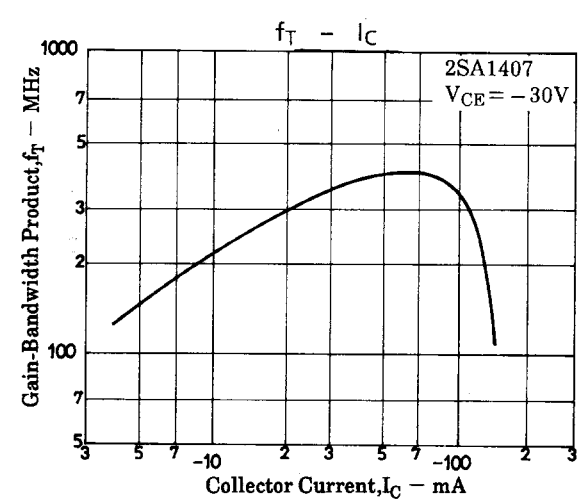
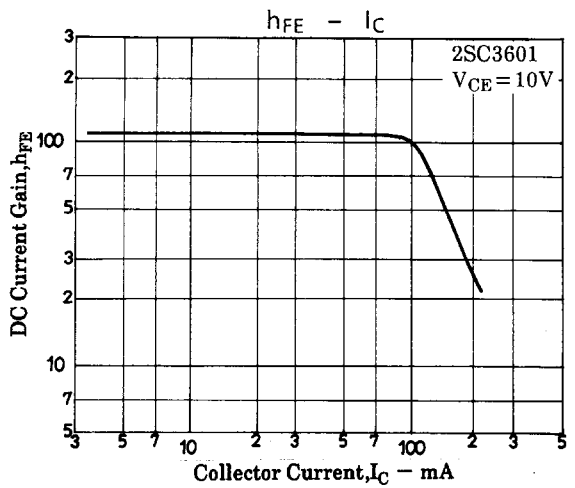
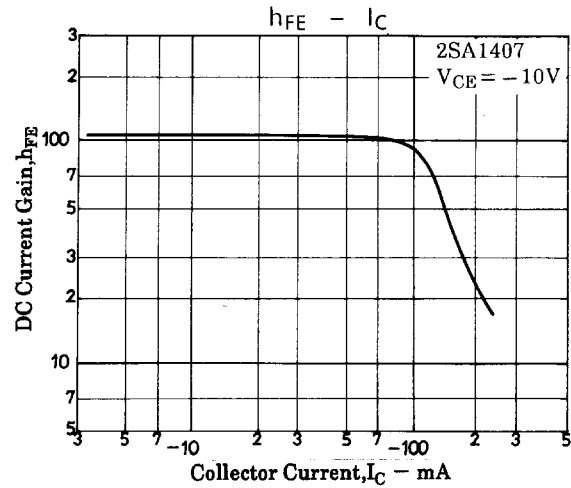
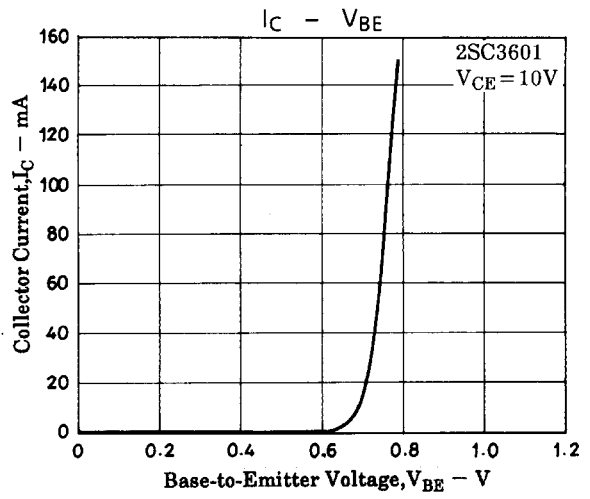
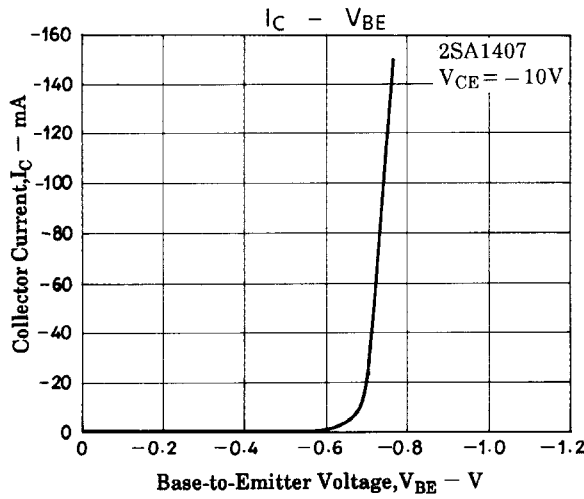
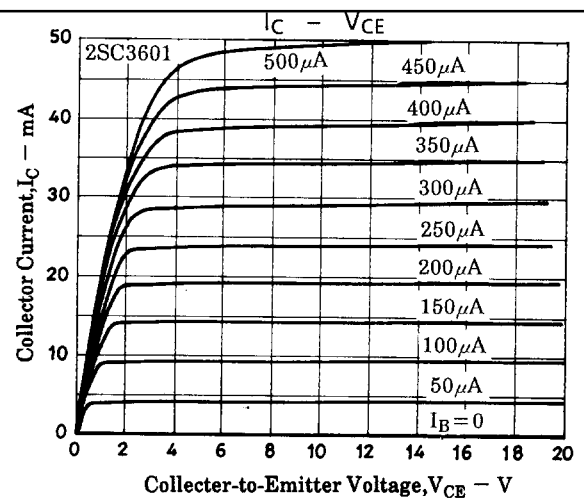
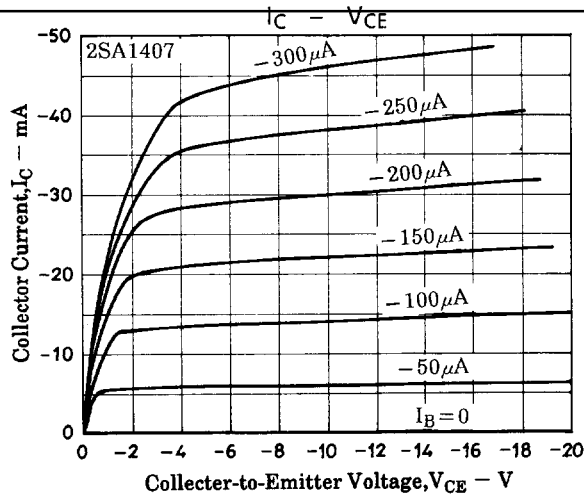
[2SA1407/2SC3601]



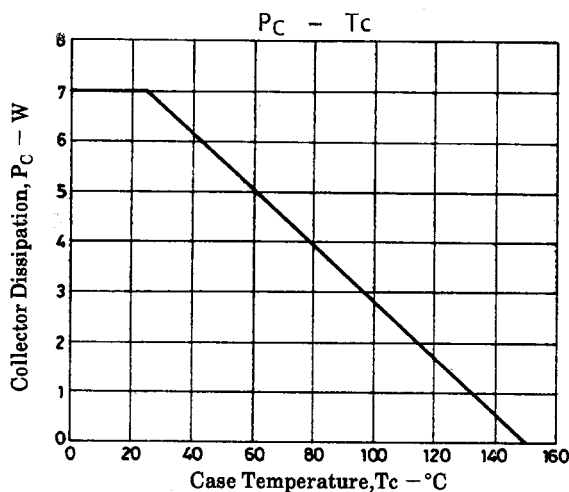
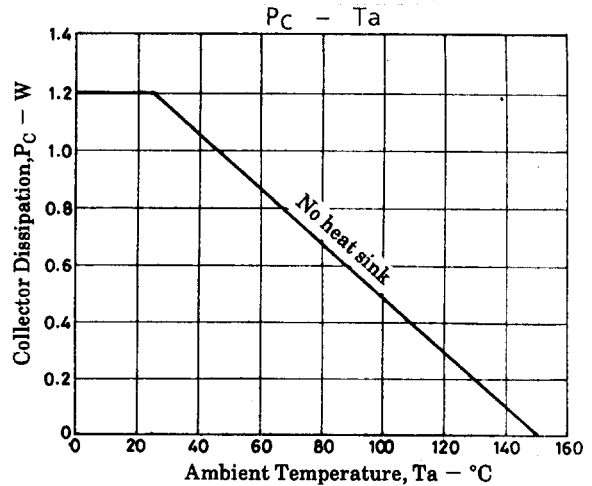
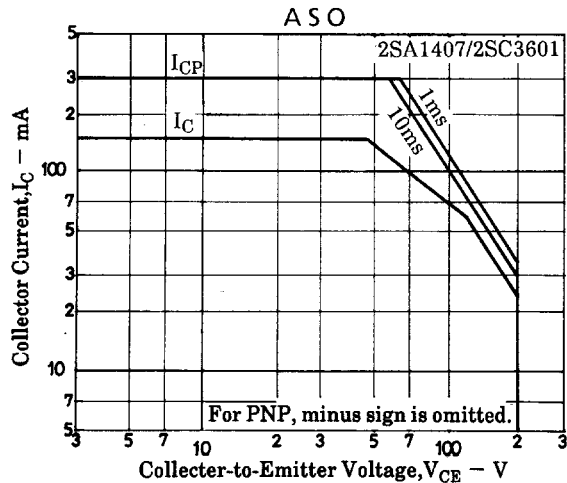
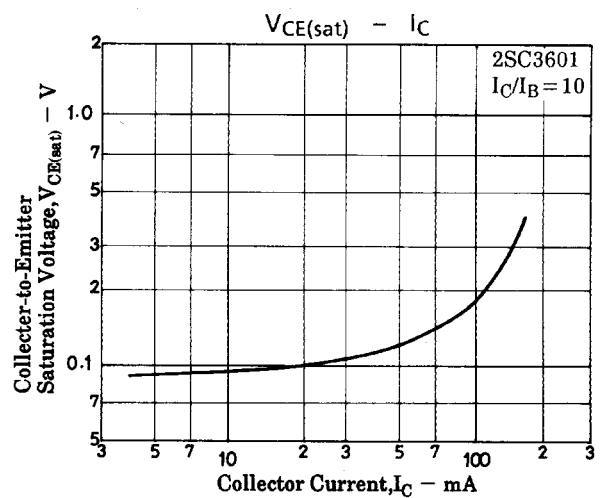
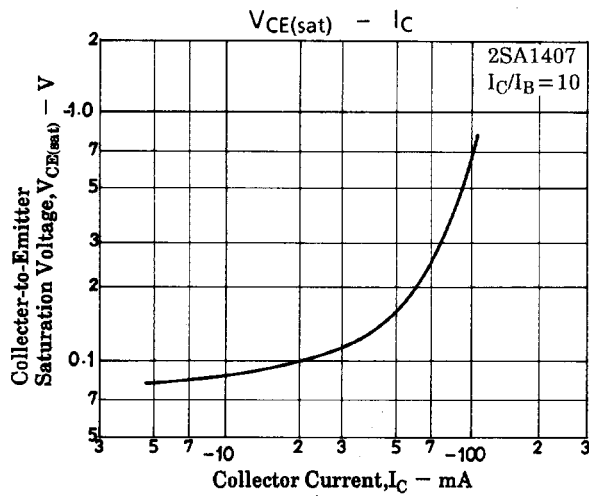
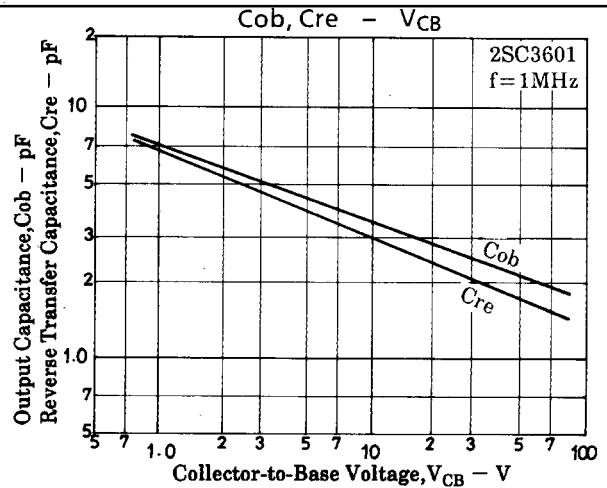
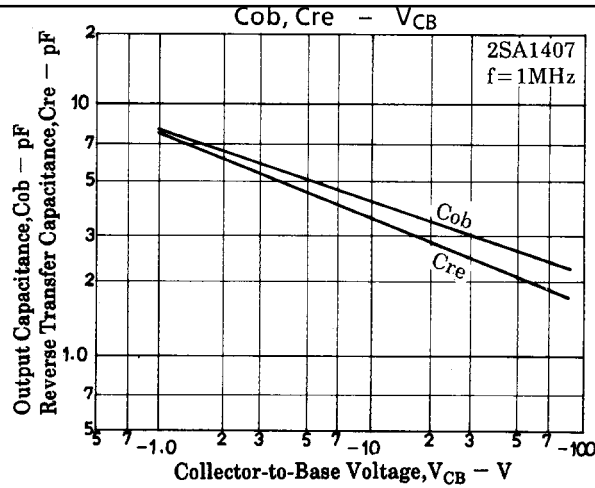
JEDEC : TO-18

- 1 : Emitter
2 : Collector
3 : Base

2SA1407/2SC3601



2SA1407/2SC3601



- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
 - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.