

SANYO	No.1766C	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: $V_{CE0} \geq 200V$.
- Small reverse transfer capacitance and excellent high-frequency characteristic: $C_{re} = 2.0pF$ (NPN), $2.5pF$ (PNP).
- Complementary PNP and NPN types.
- Adoption of FBET process.

() : 2SA1407

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

Collector-to-Base Voltage	V_{CB0}	(-)	200	V
Collector-to-Emitter Voltage	V_{CE0}	(-)	200	V
Emitter-to-Base Voltage	V_{EB0}	(-)	4	V
Collector Current	I_C	(-)	150	mA
Collector Current (Pulse)	I_{CP}	(-)	300	mA
Collector Dissipation	P_C		1.2	W
			7	W
Junction Temperature	T_j		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

$T_c = 25^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

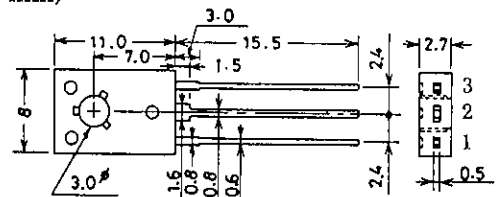
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)150V, I_E = 0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)2V, I_C = 0$			(-)1.0	μA
DC Current Gain	$h_{FE}(1)$	$V_{CE} = (-)10V, I_C = (-)10mA$	40※		320※	
	$h_{FE}(2)$	$V_{CE} = (-)10V, I_C = (-)100mA$	20			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)30V, I_C = (-)50mA$		400		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)50mA, I_B = (-)5mA$			0.6	V
					(-0.8)	

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

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

Package Dimensions 2009B
(unit : mm)



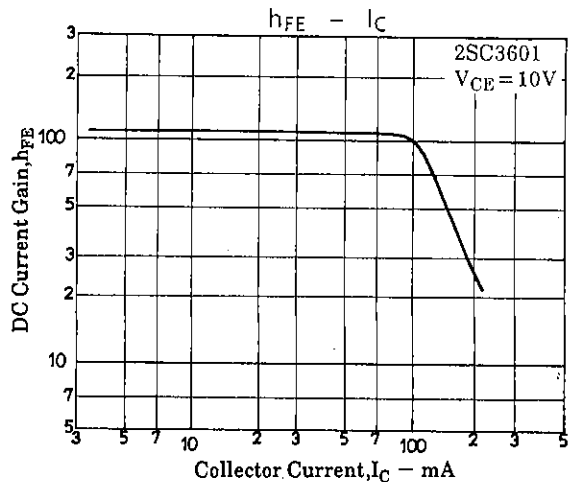
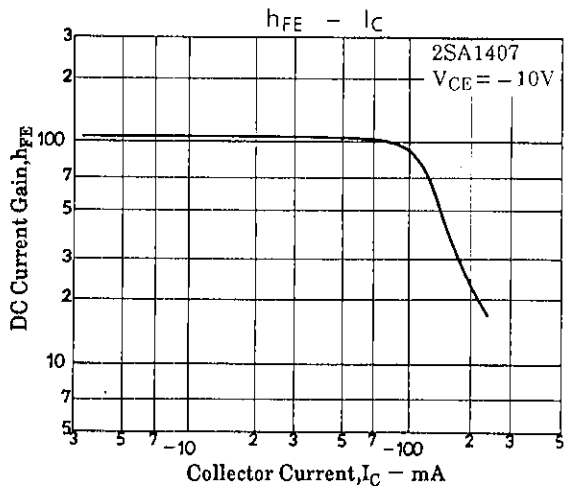
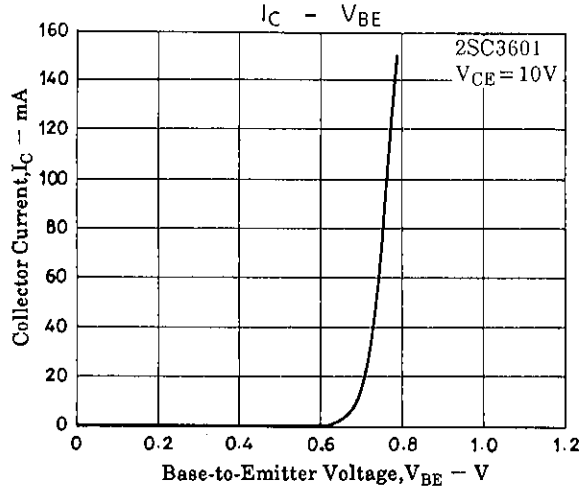
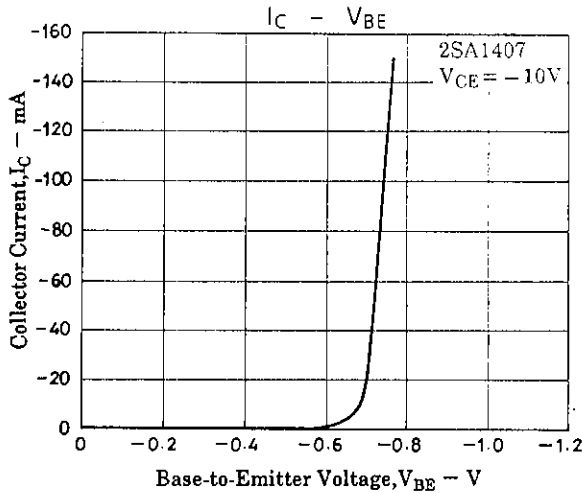
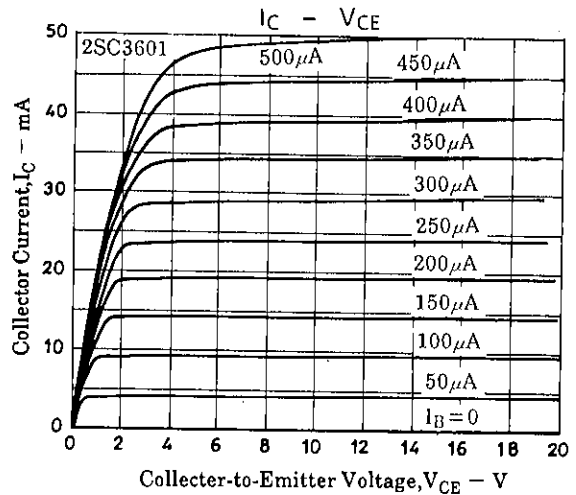
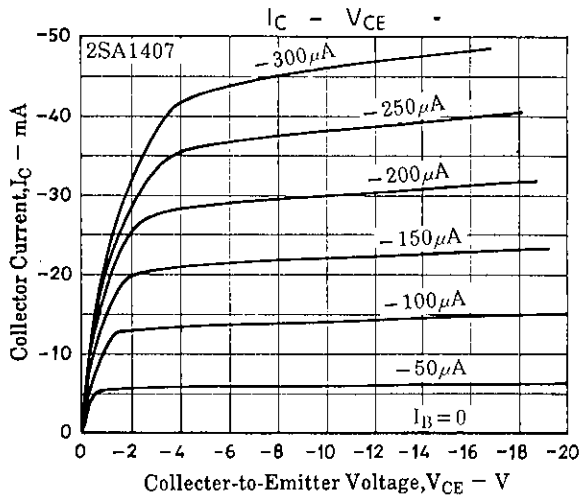
JEDEC: TO-126

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

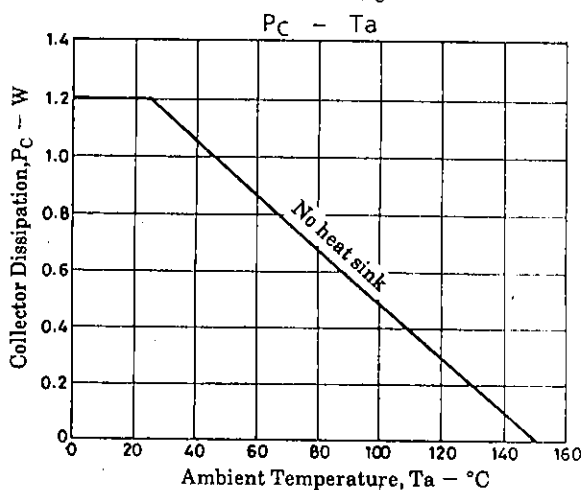
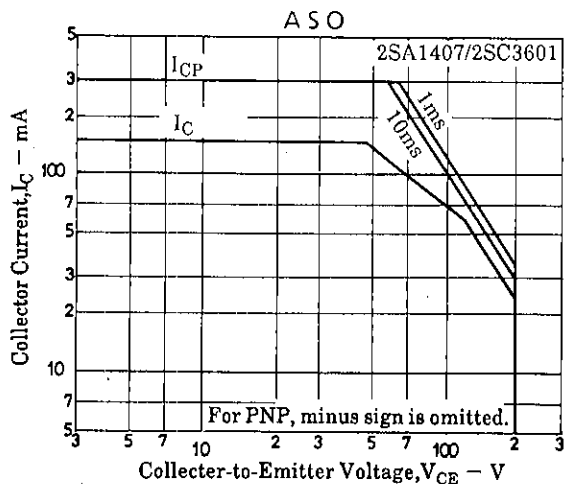
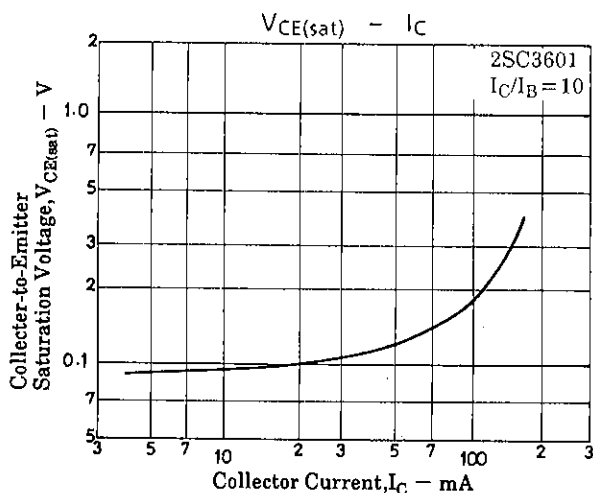
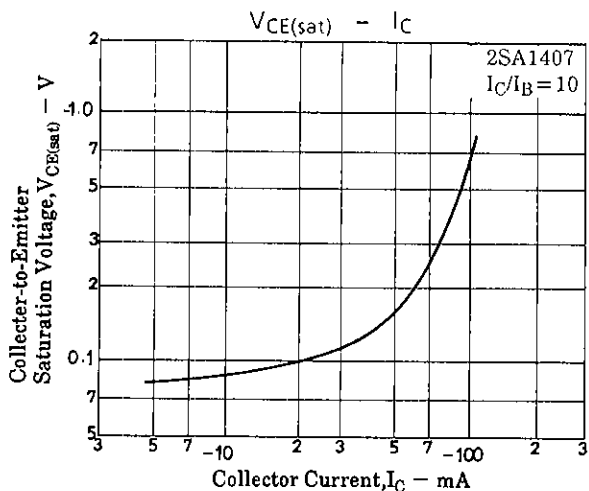
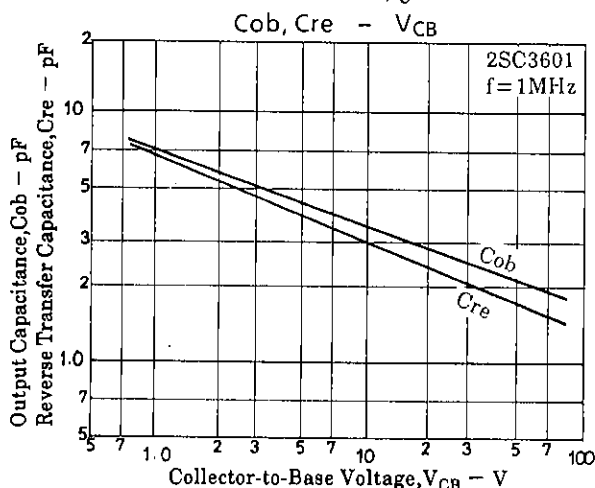
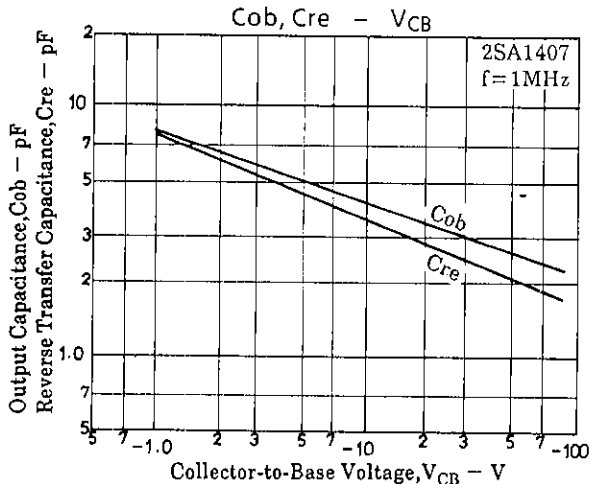
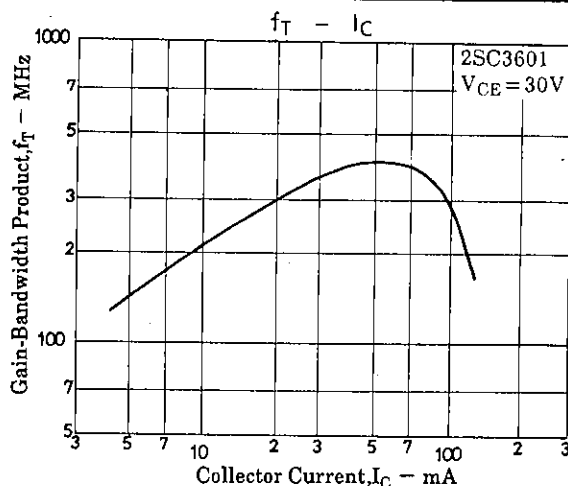
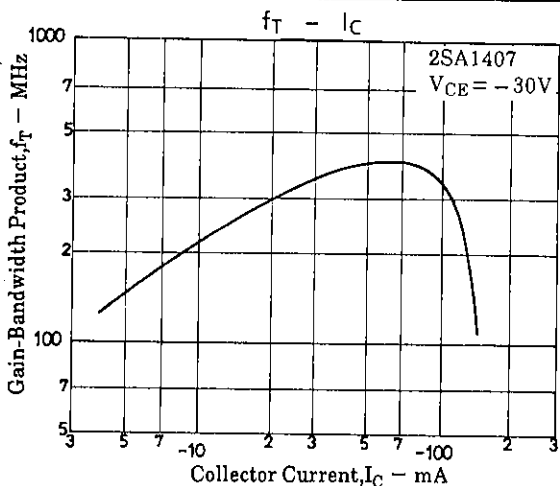
2SA1407/2SC3601

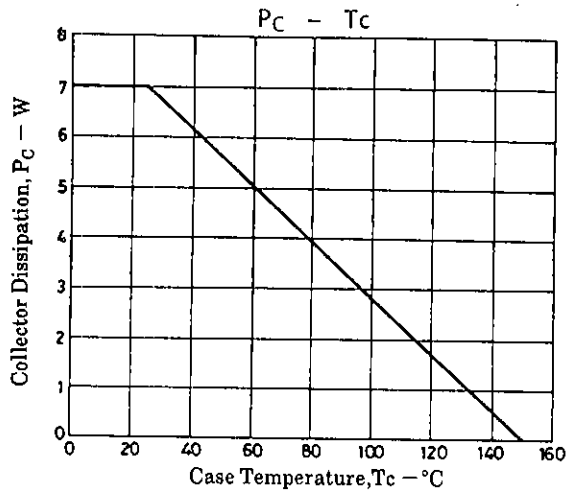
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			min	typ	max	unit
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)50\text{mA}, I_B = (-)5\text{mA}$			(-) 1.0	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu\text{A}, I_E = 0$	(-) 200			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1\text{mA}, R_{BE} = \infty$	(-) 200			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)100\mu\text{A}, I_C = 0$	(-) 4			V
Output Capacitance	C_{ob}	$V_{CB} = (-)30\text{V}, f = 1\text{MHz}$		2.5		pF
				(3.0)		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB} = (-)30\text{V}, f = 1\text{MHz}$		2.0		pF
				(2.5)		pF



2SA1407/2SC3601





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This catalog provides information as of September, 1995. Specifications and information herein are subject to change without notice.

SANYO	No.1973A	2SA1469/2SC3746
		PNP/NPN Epitaxial Planar Silicon Transistors 60V/5A High-Speed Switching Applications

Applications

- Various inductance lamp drivers for electrical equipment.
- Inverters, converters (strobo, flash, fluorescent lamp lighting circuit).
- Power amp (high power car stereo, motor controller).
- High-speed switching (switching regulator, driver).

Features

- Low saturation voltage.
- Excellent current dependence of h_{FE} .
- Short switching time.
- Micaless package facilitating mounting.

() : 2SA1469

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

Collector-to-Base Voltage	V_{CB0}	(-)80	V
Collector-to-Emitter Voltage	V_{CEO}	(-)60	V
Emitter-to-Base Voltage	V_{EBO}	(-)5	V
Collector Current	I_C	(-)5	A
Collector Current (Pulse)	I_{CP}	(-)7	A
Collector Dissipation	P_C	2	W
		20	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

$T_c = 25^\circ\text{C}$

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

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)40\text{V}, I_E = 0$			(-)0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)0.1	mA
DC Current Gain	h_{FE}	$V_{CE} = (-)2\text{V}, I_C = (-)1\text{A}$	70*		280*	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)5\text{V}, I_C = (-)1\text{A}$		100		MHz
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)2.5\text{A}, I_B = (-)0.125\text{A}$			(-)0.4	V

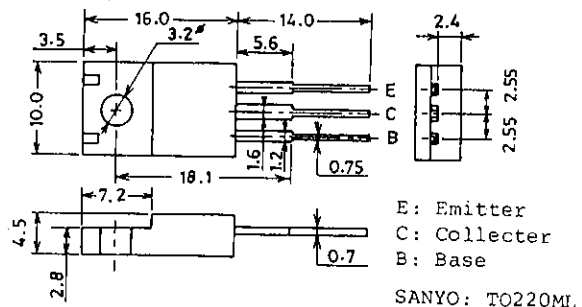
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* : The 2SA1469/2SC3746 are classified by 1A h_{FE} as follows

70	Q	140	100	R	200	140	S	280
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Package Dimensions 2041

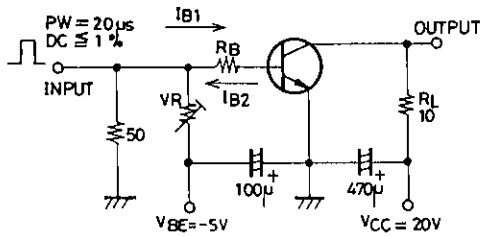
(unit: mm)



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			min	typ	max	unit
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)1mA, I_E = 0$	(-)80			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)60			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)1mA, I_C = 0$	(-)5			V
Turn-on Time	t_{on}	See specified Test Circuit.		0.1		μs
Storage Time	t_{stg}	∥		0.5		μs
Fall Time	t_f	∥		0.1		μs

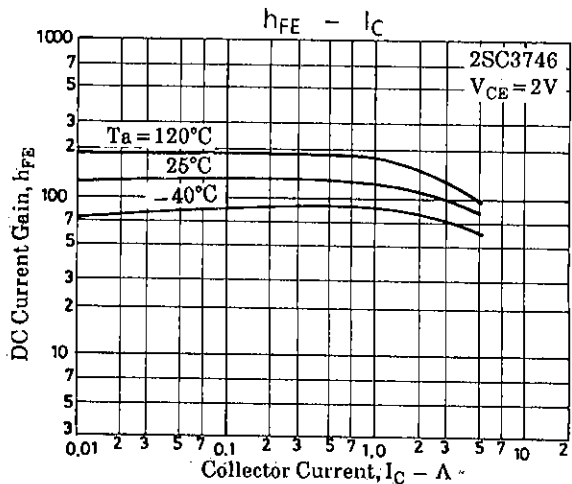
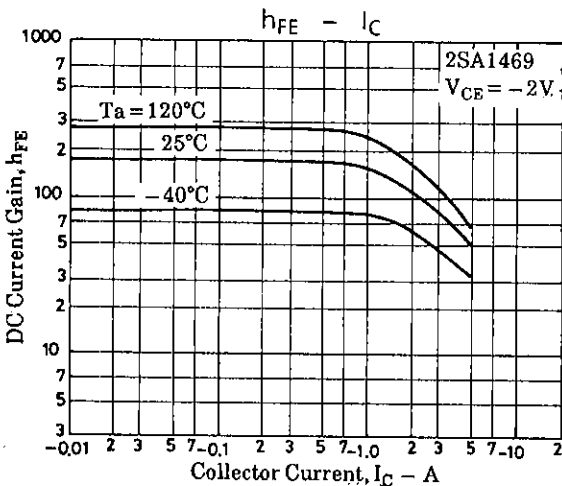
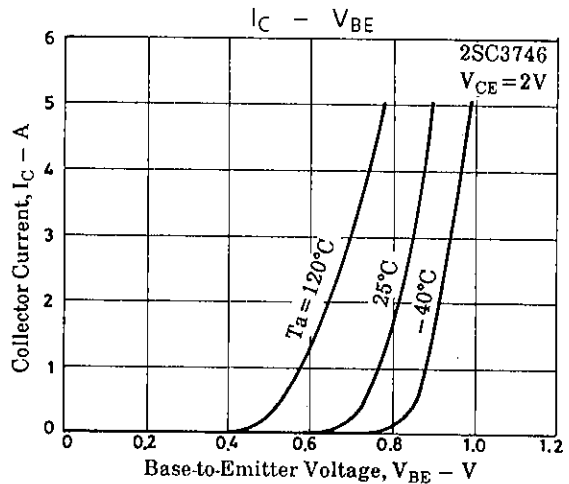
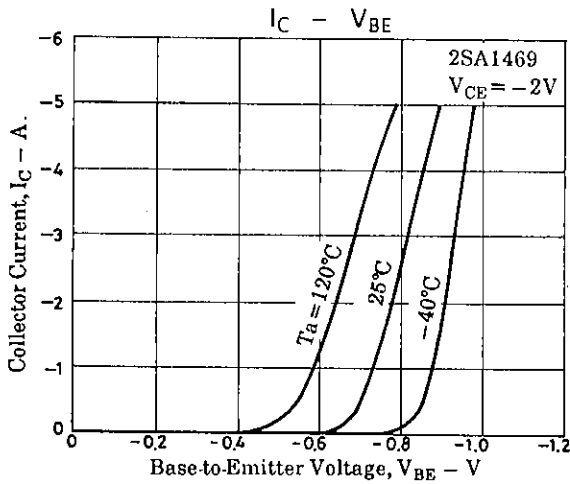
Switching Time Test Circuit



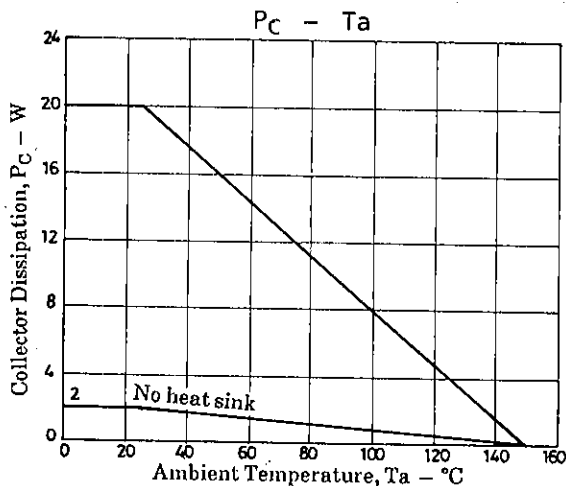
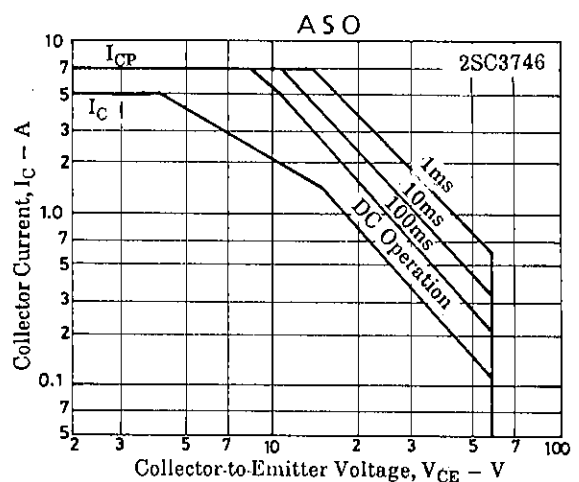
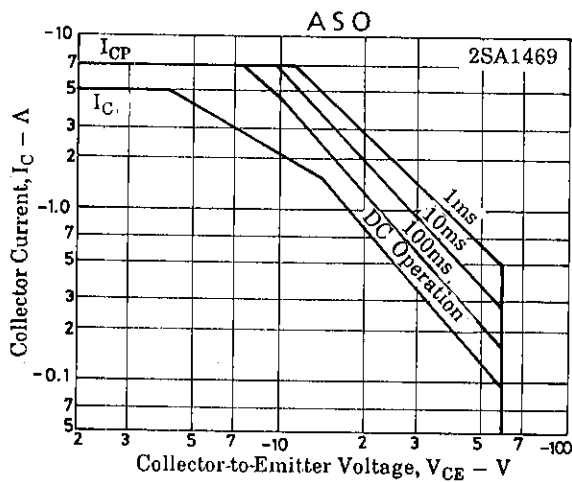
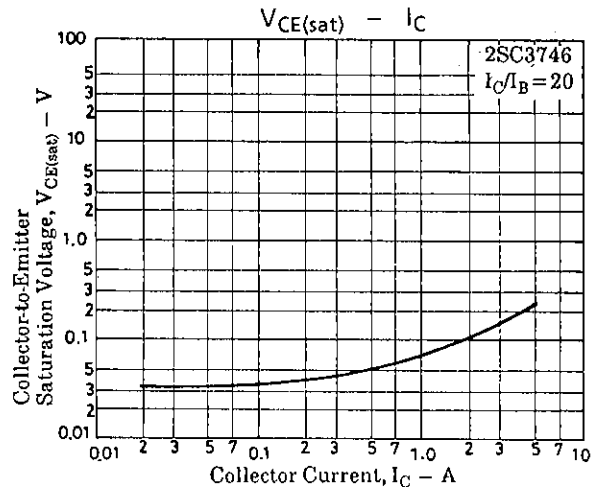
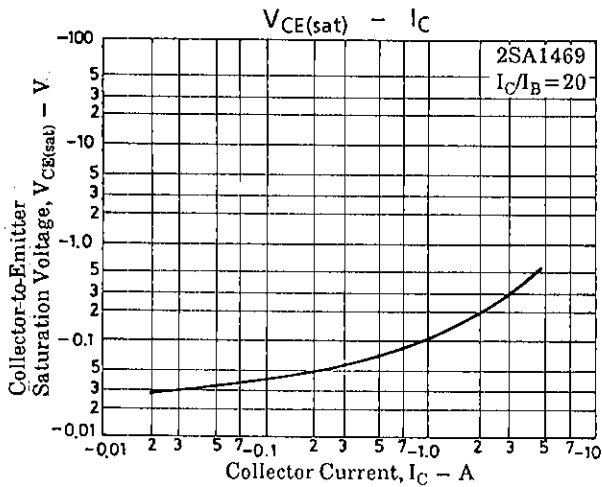
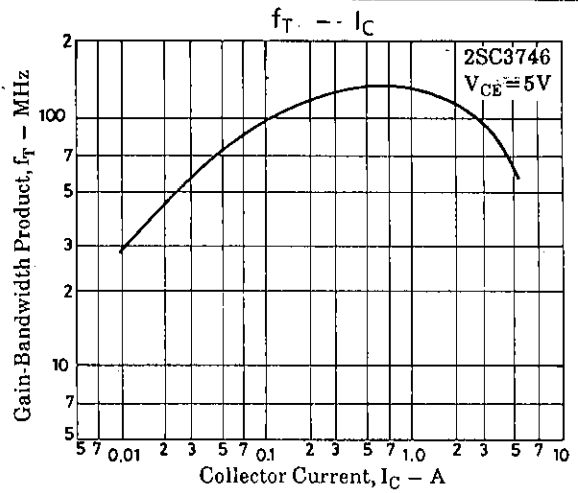
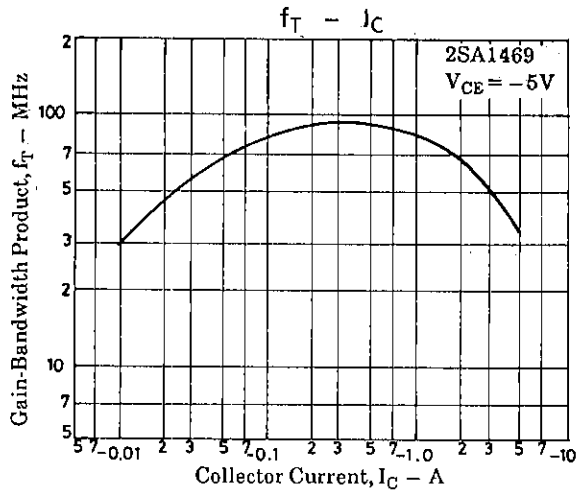
(For PNP, the polarity is reversed).

$$20I_{B1} = -20I_{B2} = I_C = 2A$$

Unit (Resistance : Ω , Capacitance : F)



2SA1469/2SC3746



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