



2SA1768/2SC4612

High-Voltage Switching Applications

Applications

- Color TV sound output, converter, inverter.

Features

- Adoption of MBIT process.
- High breakdown voltage, large current capacity.
- Fast switching speed.

() : 2SA1768

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)180	V
Collector-to-Emitter Voltage	V_{CEO}		(-)160	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)0.7	mA
Collector Current (Pulse)	I_{CP}		(-)1.5	mA
Collector Dissipation	P_C		1	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}	$V_{CB} = (-)120\text{V}, I_E = 0$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			-0.1	μA
DC Current Gain	h_{FE1}	$V_{CE} = (-)5\text{V}, I_C = (-)100\text{mA}$	100*		400*	
	h_{FE2}	$V_{CE} = (-)5\text{V}, I_C = (-)10\text{mA}$	90			
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10\text{V}, I_C = -50\text{mA}$		120		MHz
Output Capacitance	C_{ob}	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		(11)8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 250\text{mA}, I_B = (-)25\text{mA}$		(-0.2)	(-0.5)	V
				0.12	0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 250\text{mA}, I_B = (-)25\text{mA}$	(-0.85)	(-1.2)		V

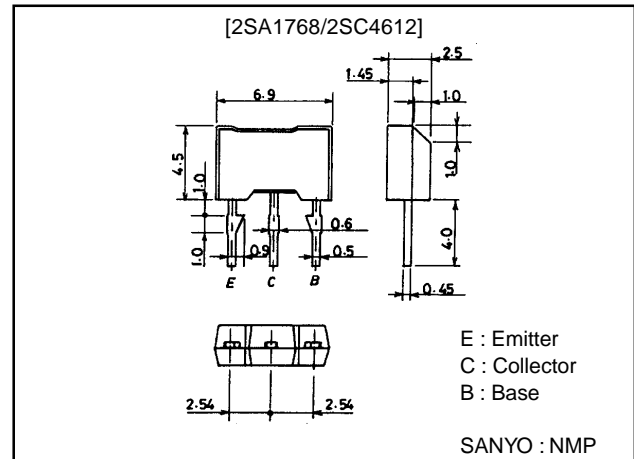
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Package Dimensions

unit:mm

2064



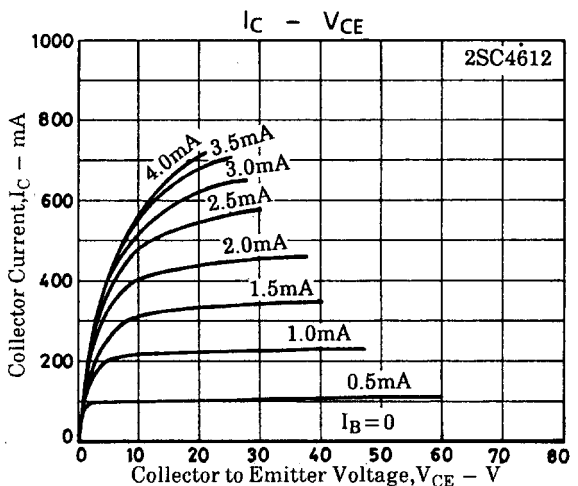
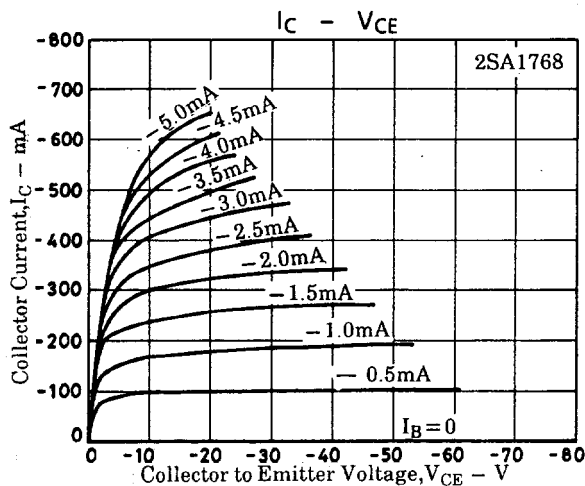
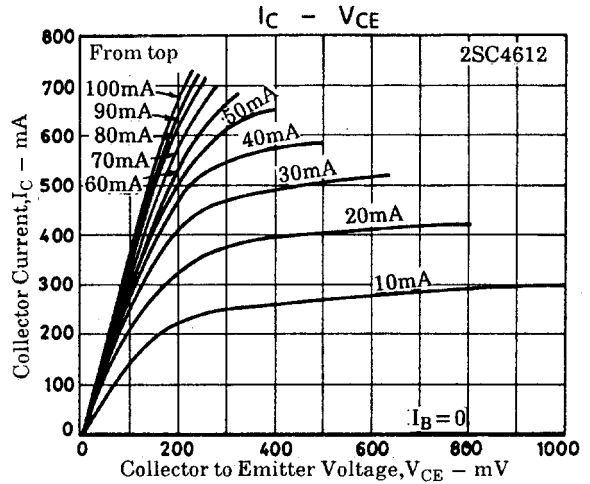
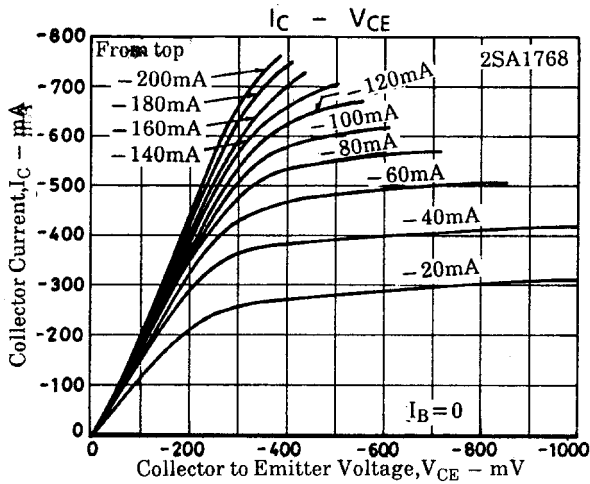
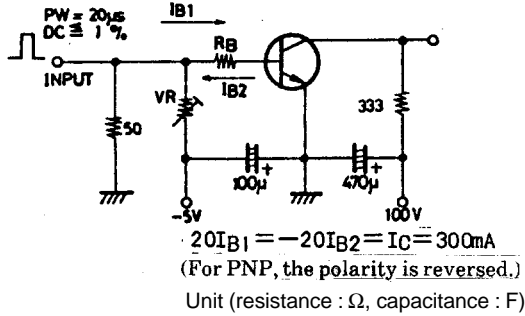
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	(-)180			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	(-)160			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6			V
Turn-ON Time	t_{on}	See specified Test Circuit		(60)50		ns
Storage Time	t_{stg}	See specified Test Circuit		(900)		ns
				1000		ns
Fall Time	t_f	See specified Test Circuit		(60)60		ns

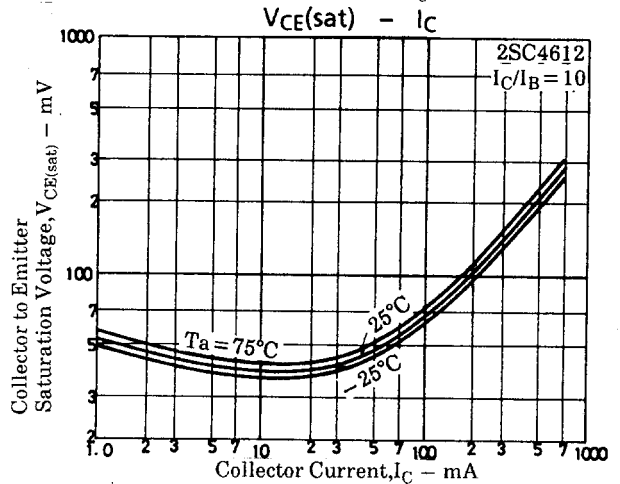
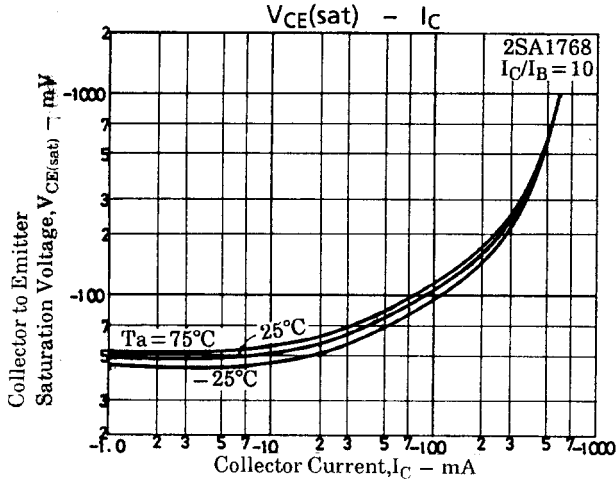
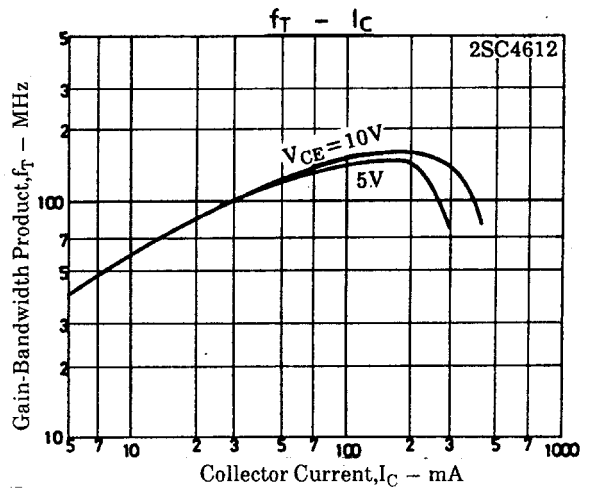
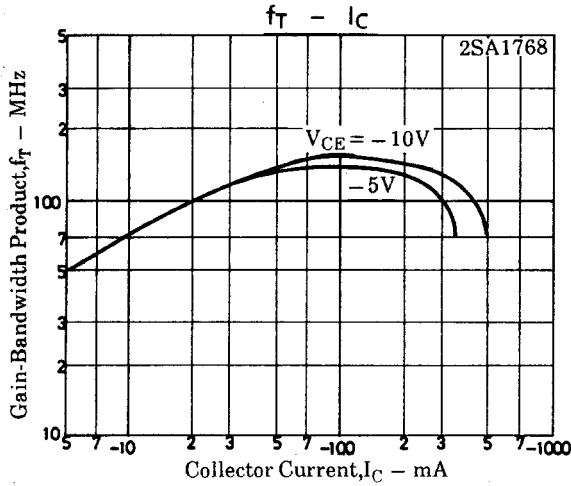
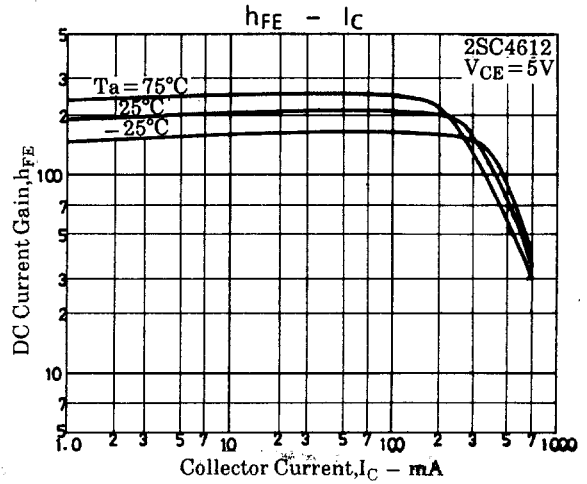
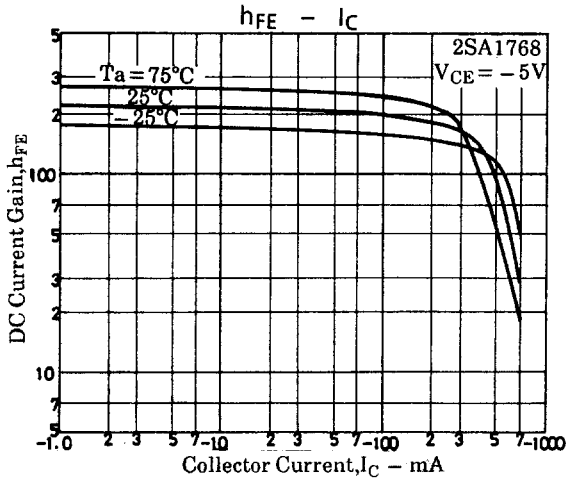
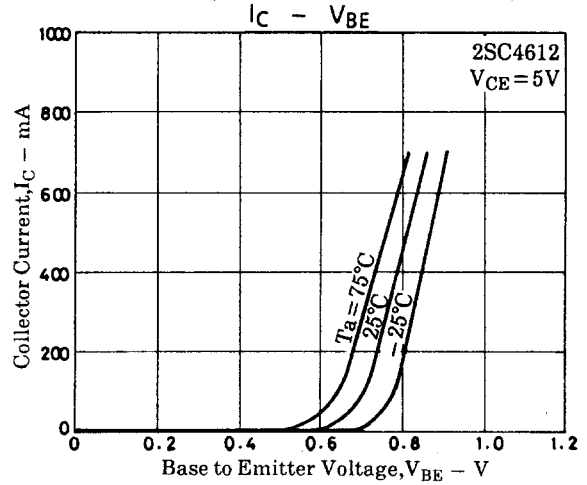
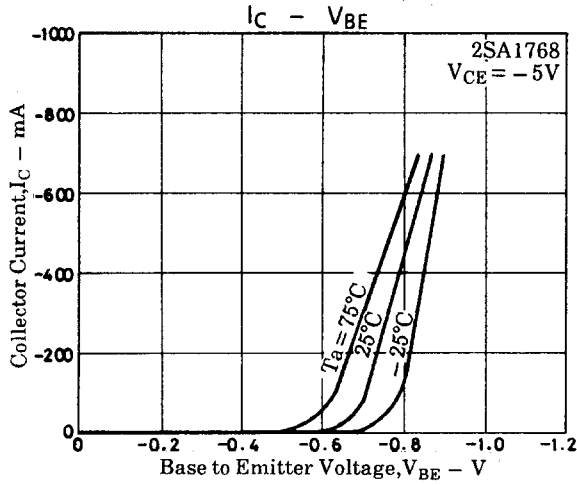
* : The 2SA1768/2SC4612 are classified by 100mA h_{FE} as follows :

100 R	200	140 S	280	200 T	400
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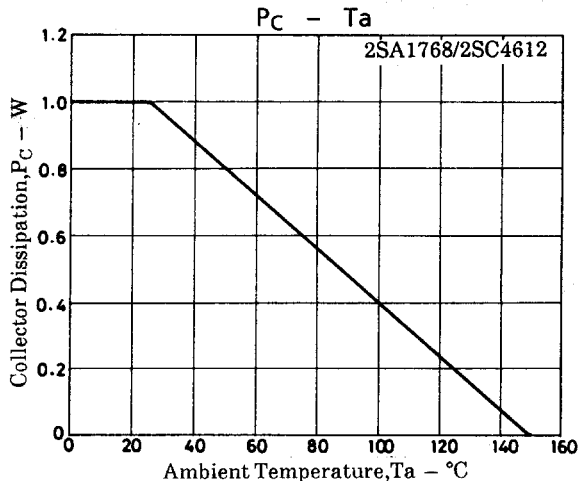
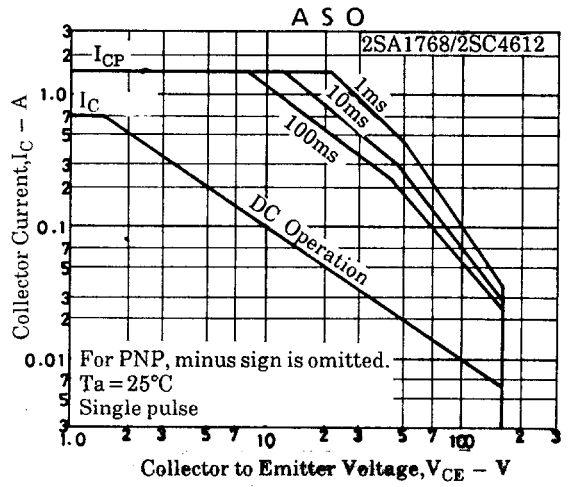
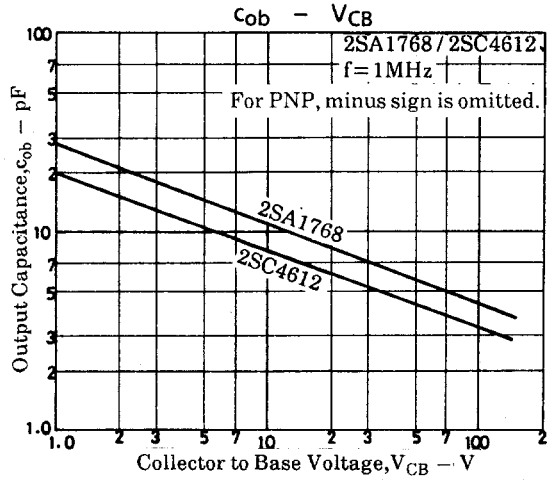
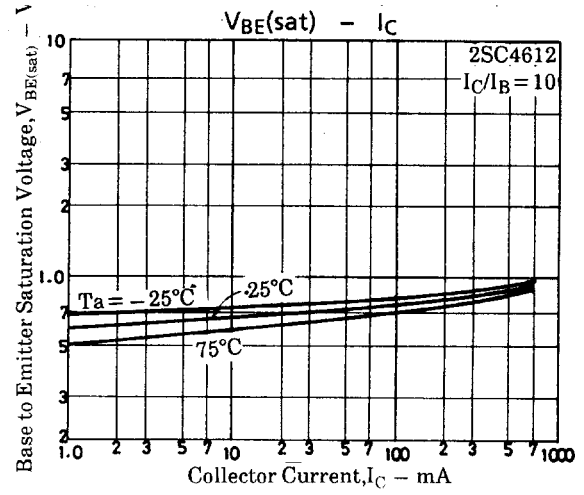
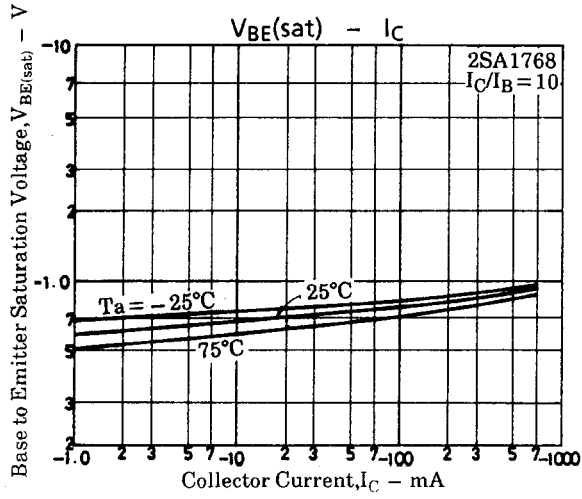
Switching Time Test Circuit



2SA1768/2SC4612



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