



2SA1769/2SC4613

160V/700mA Switching Applications

Applications

- Color TV audio output, conveter, inverter.

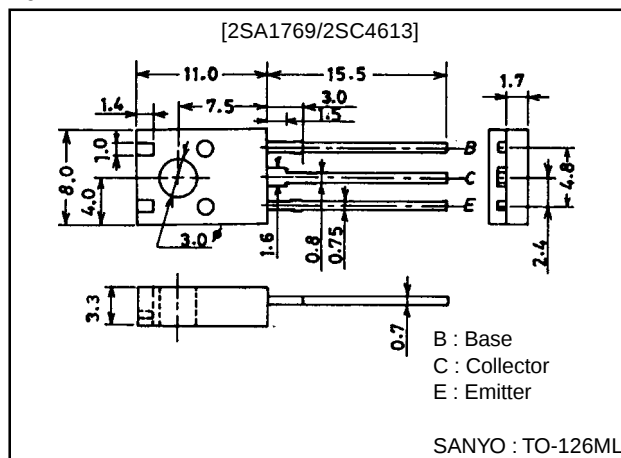
Features

- Adoption of MBIT processes.
- High breakdown voltage and large current capacity.
- Fast switching speed.

Package Dimensions

unit:mm

2042A



() : 2SA1769

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)180	V
Collector-to-Emitter Voltage	V_{CEO}		(-)160	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)0.7	A
Collector Current (Pulse)	I_{CP}		(-)1.5	A
Collector Dissipation	P_C		1.5	W
		$T_c=25^\circ\text{C}$	10	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at Ta = 25°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
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)250\text{mA}, I_B=(-)25\text{mA}$		0.12	0.4	V
				(-0.2)	(-0.5)	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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83098HA (KT)/5201MH (KOTO) No.3707-1/5

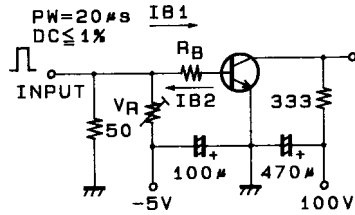
2SA1769/2SC4613

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
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		8		pF
				(11)		pF
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 2SA1769/2SC4613 are classified by 100mA h_{FE} as follows :

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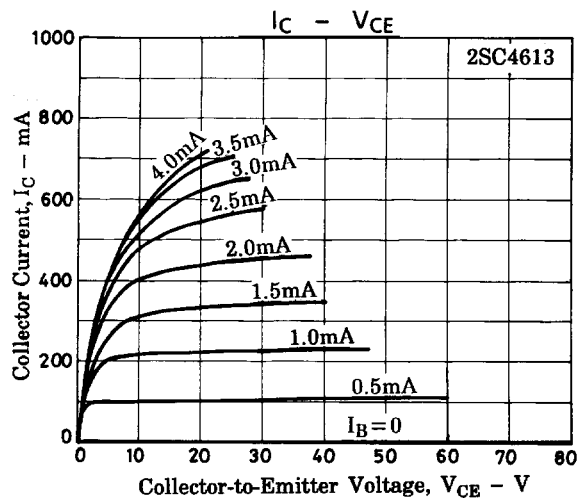
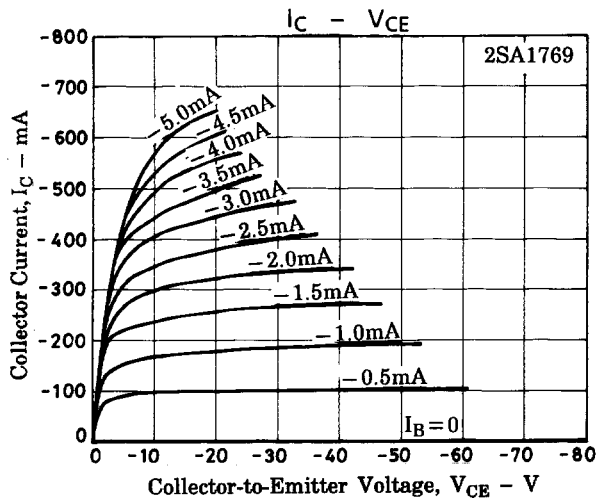
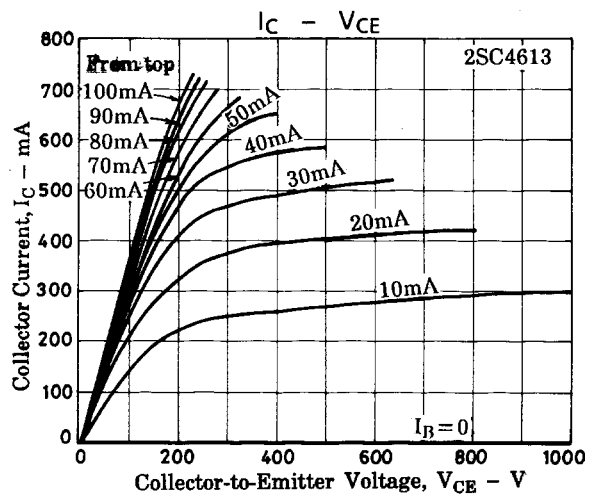
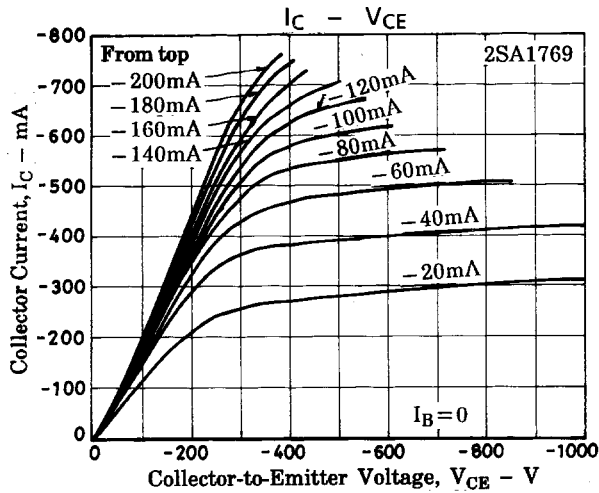
Switching Time Test Circuit



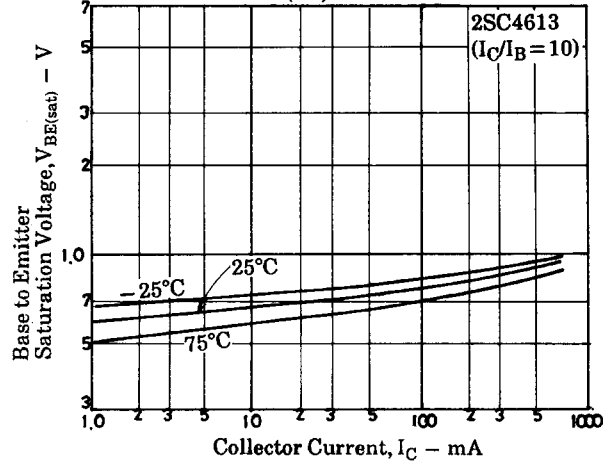
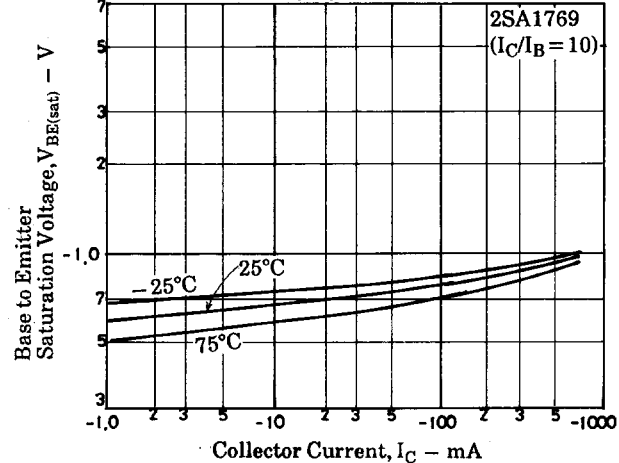
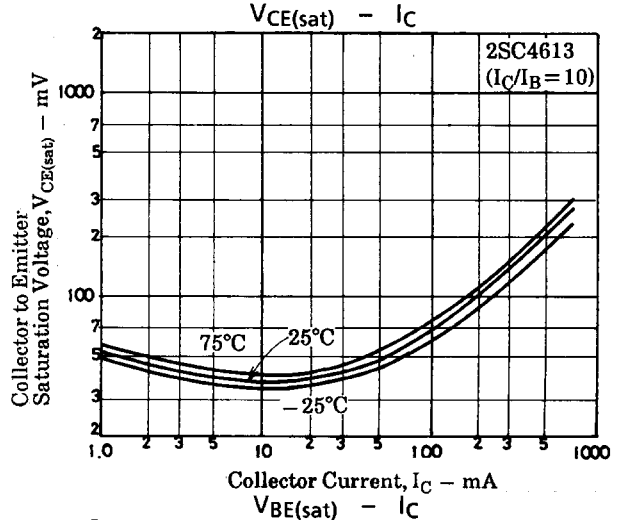
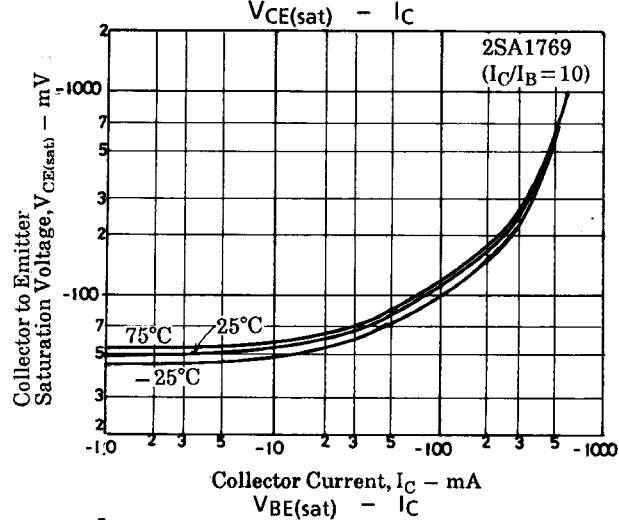
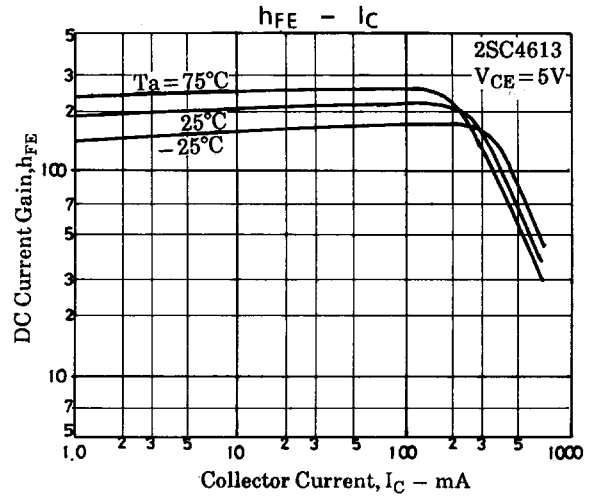
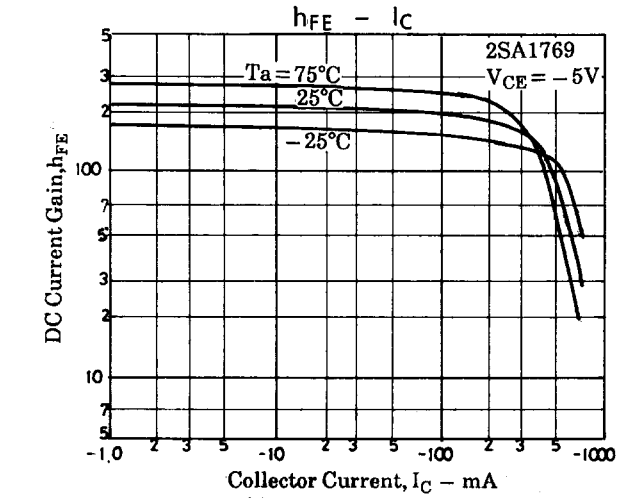
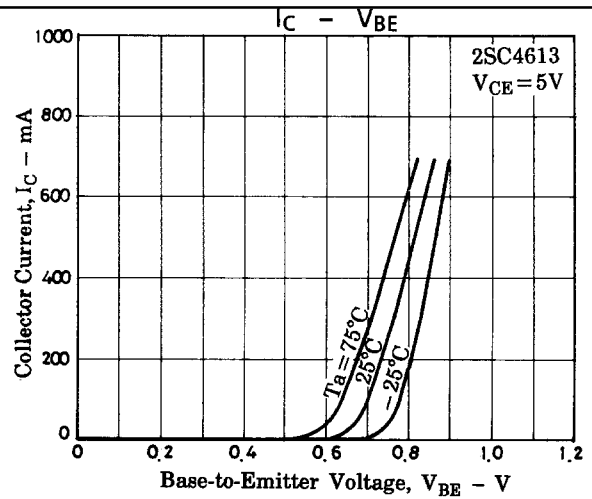
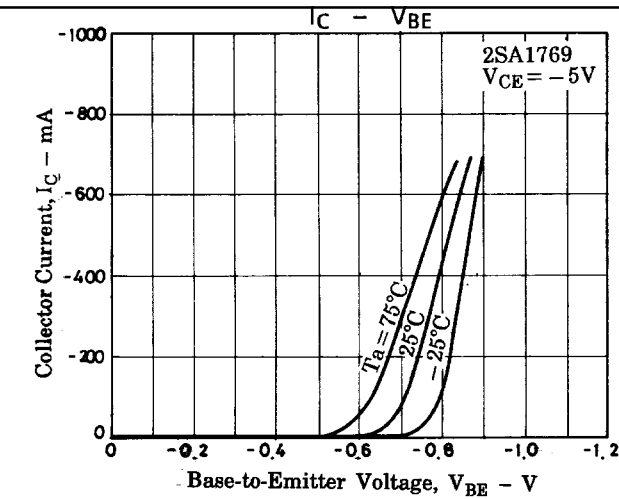
$$20I_{B1} = -20I_{B2} = I_C = 300mA$$

(For PNP, the polarity is reversed).

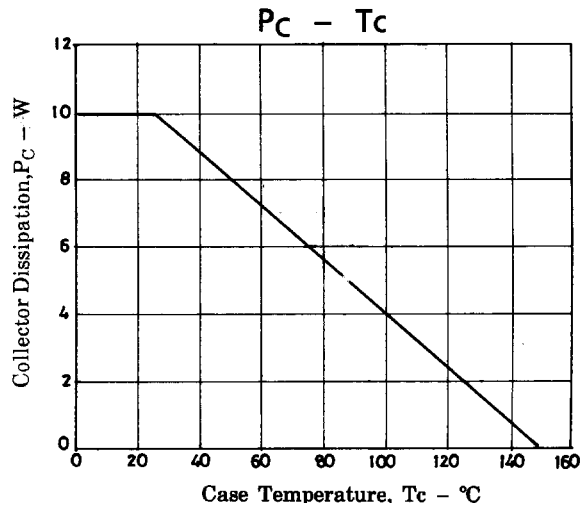
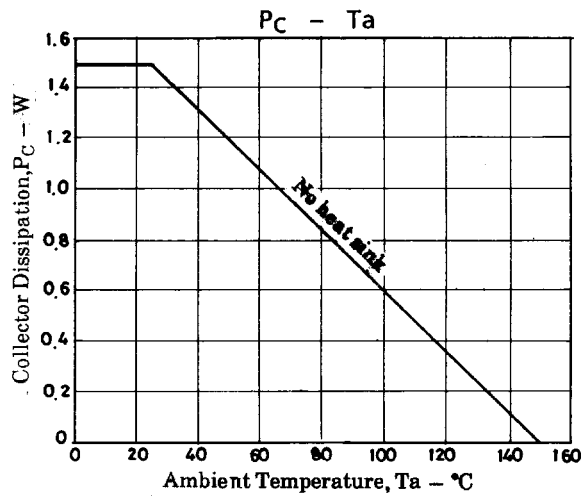
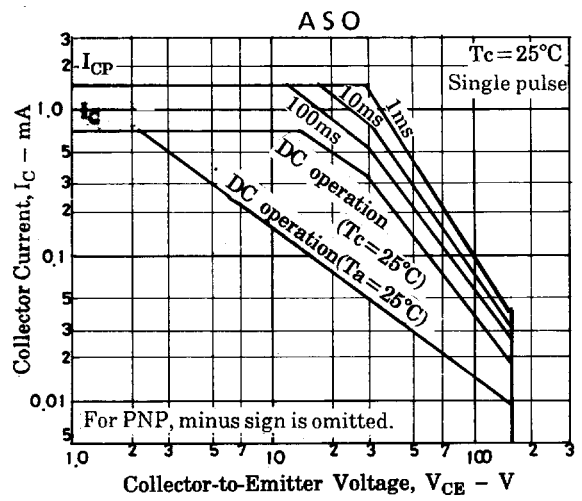
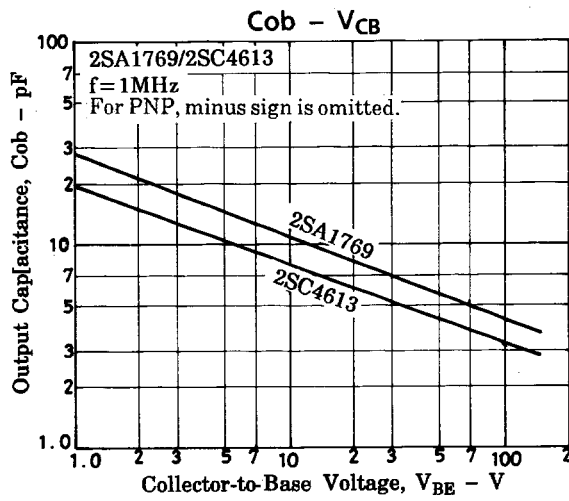
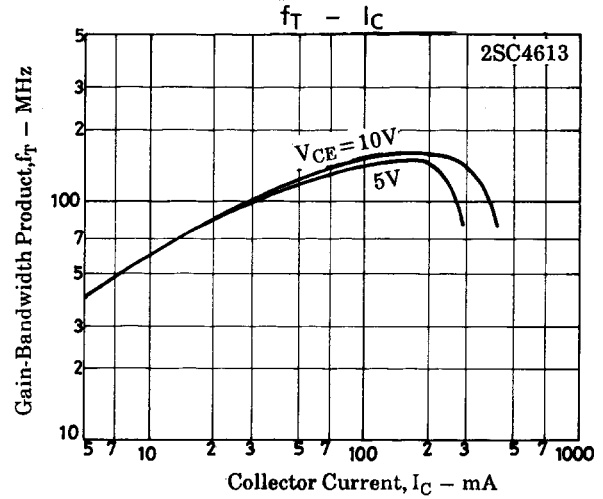
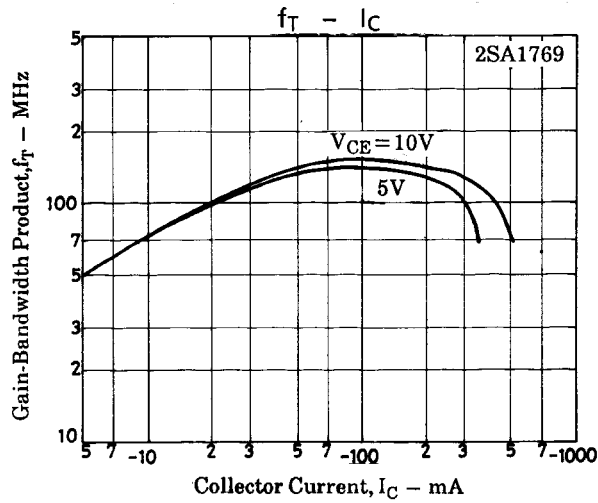
Unit (resistance : Ω , capacitance : F)



2SA1769/2SC4613



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