

<b>SANYO</b>	No.3707	<b>2SA1769/2SC4613</b>
		PNP/NPN Epitaxial Planar Silicon Transistors <b>160V/700mA Switching Applications</b>

**Applications**

- Color TV audio output, converter, inverter.

**Features**

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

( ) : 2SA1769

**Absolute Maximum Ratings at Ta = 25°C**

			unit
Collector-to-Base Voltage	V <sub>CB0</sub>	(-)	180 V
Collector-to-Emitter Voltage	V <sub>CE0</sub>	(-)	160 V
Emitter-to-Base Voltage	V <sub>EBO</sub>	(-)	6 V
Collector Current	I <sub>C</sub>	(-)	0.7 A
Collector Current (Pulse)	I <sub>CP</sub>	(-)	1.5 A
Collector Dissipation	P <sub>C</sub>		1.5 W
			10 W
		T <sub>c</sub> = 25°C	
Junction Temperature	T <sub>j</sub>		150 °C
Storage Temperature	T <sub>stg</sub>		-55 to +150 °C

**Electrical Characteristics at Ta = 25°C**

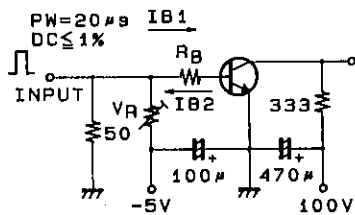
			min	typ	max	unit
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> = (-)120V, I <sub>E</sub> = 0			(-)	0.1 μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>CE</sub> = (-)4V, I <sub>C</sub> = 0			(-)	0.1 μA
DC Current Gain	h <sub>FE</sub> (1)	V <sub>CE</sub> = (-)5V, I <sub>C</sub> = (-)100mA	100*		400*	
	h <sub>FE</sub> (2)	V <sub>CE</sub> = (-)5V, I <sub>C</sub> = (-)10mA	90			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = (-)10V, I <sub>C</sub> = (-)50mA		120		MHz
C-E Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = (-)250mA, I <sub>B</sub> = (-)25mA		0.12	0.4	V
				(-0.2)	(-0.5)	
B-E Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = (-)250mA, I <sub>B</sub> = (-)25mA	(-)	0.85	(-)	1.2 V
C-B Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = (-)10μA, I <sub>E</sub> = 0	(-)	180		V
C-E Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = (-)1mA, R <sub>BE</sub> = ∞	(-)	160		V
E-B Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = (-)10μA, I <sub>C</sub> = 0	(-)	6		V

\* : The 2SA1769/2SC4613 are classified by 100mA h<sub>FE</sub> as follows.

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

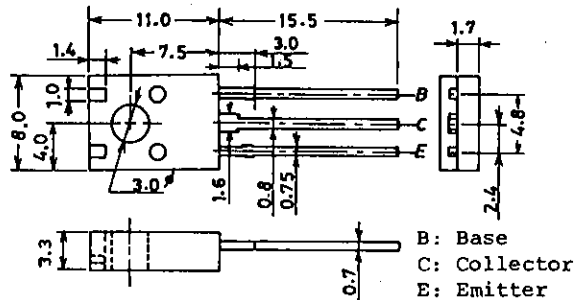


2Q<sub>IB1</sub> = -20I<sub>B2</sub> = I<sub>C</sub> = 300mA  
(For PNP, the polarity is reversed).

Unit (Resistance : Ω, Capacitance : F)

**Package Dimensions 2042A**

(unit : mm)



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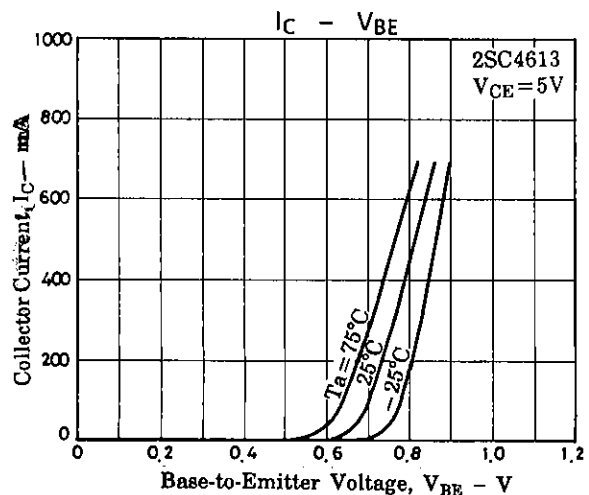
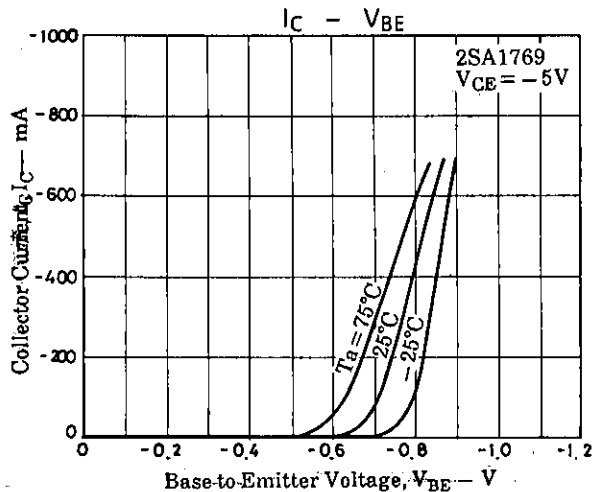
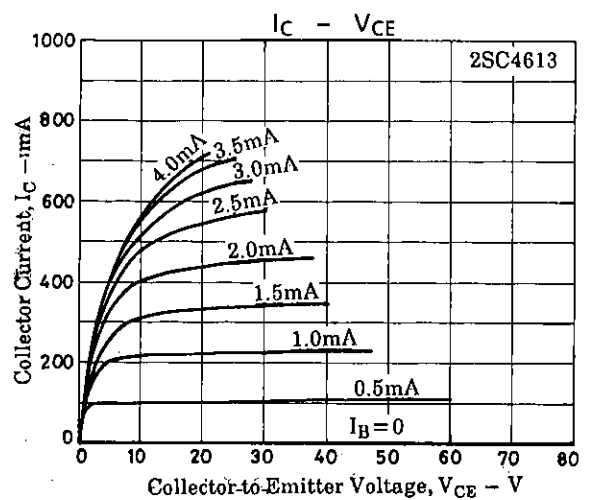
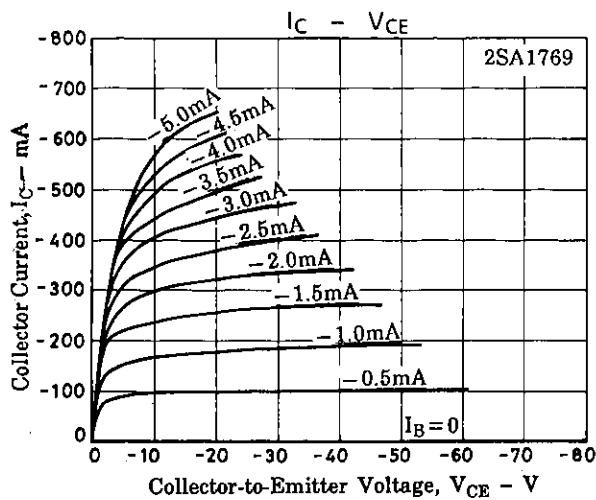
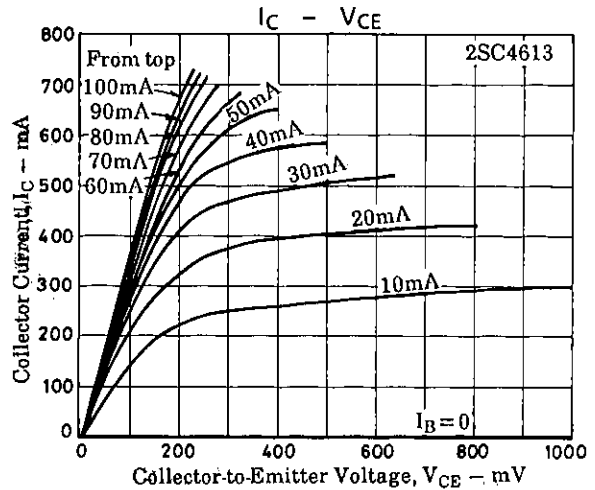
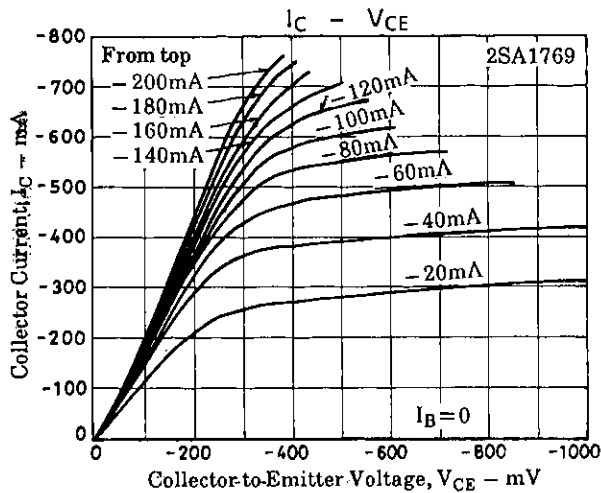
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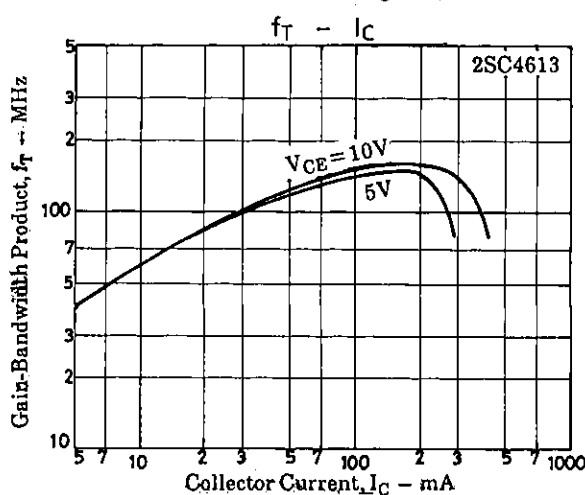
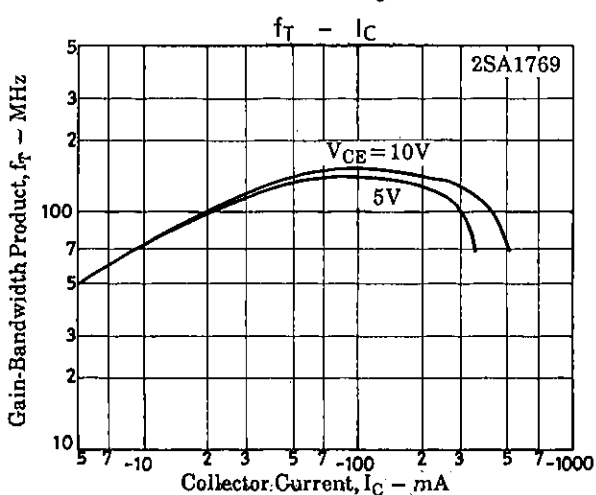
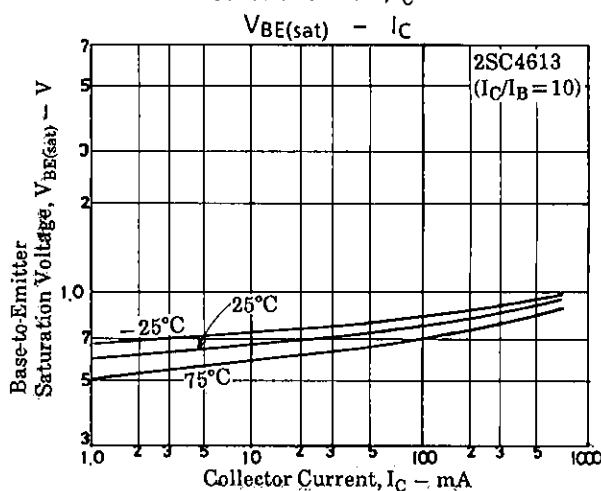
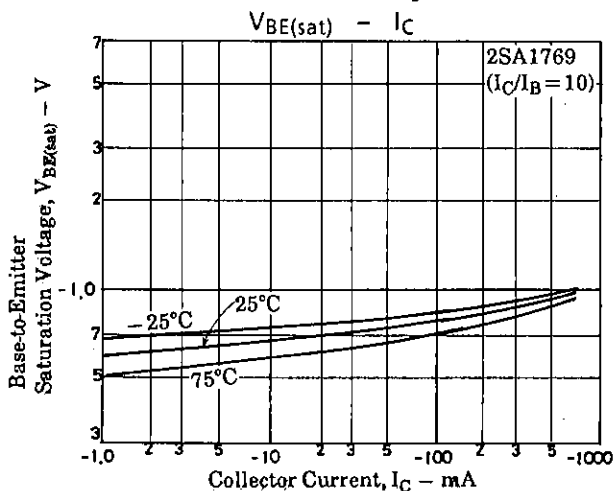
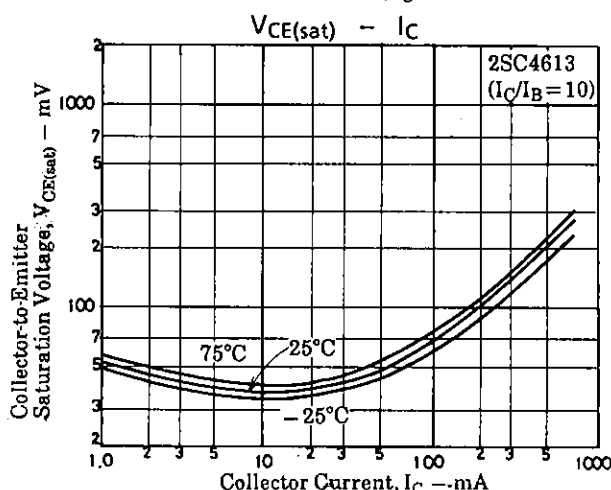
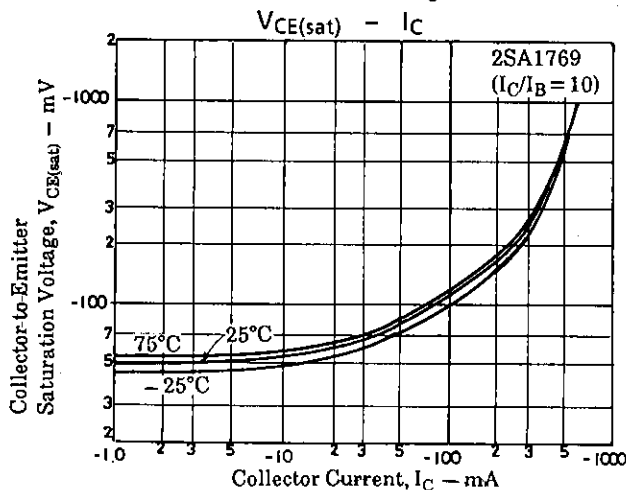
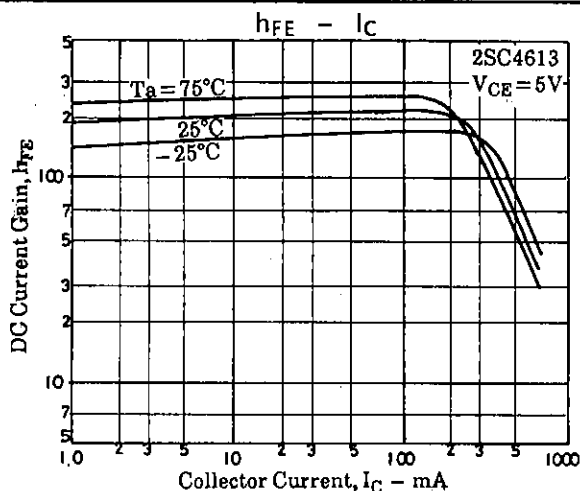
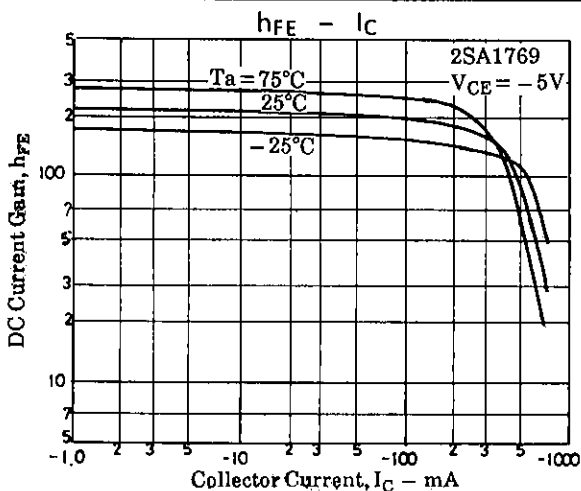
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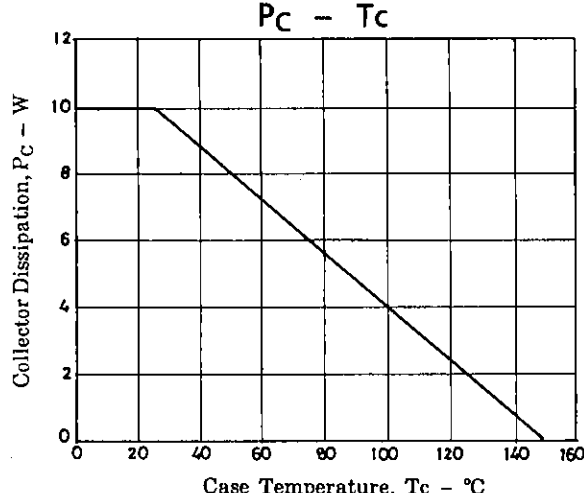
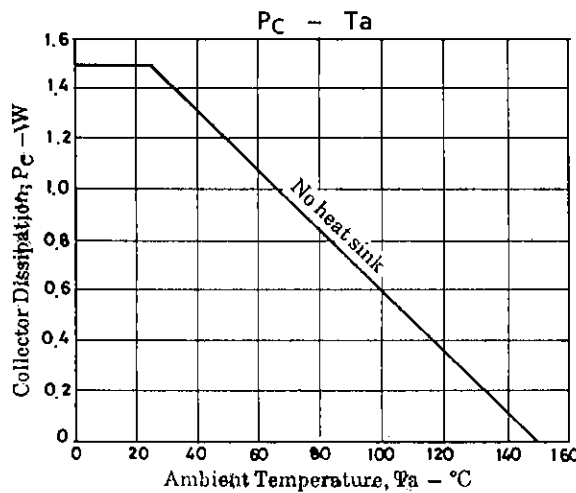
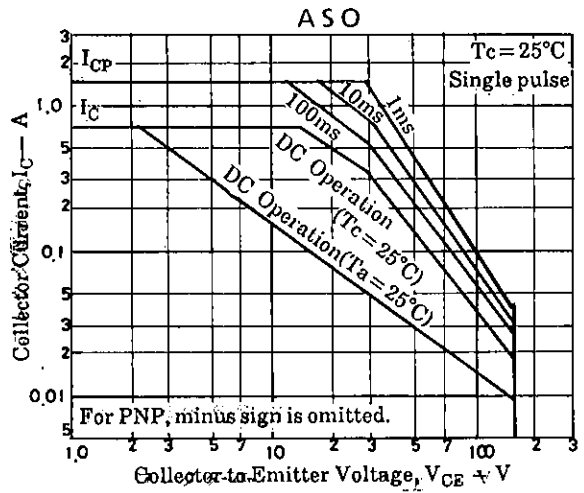
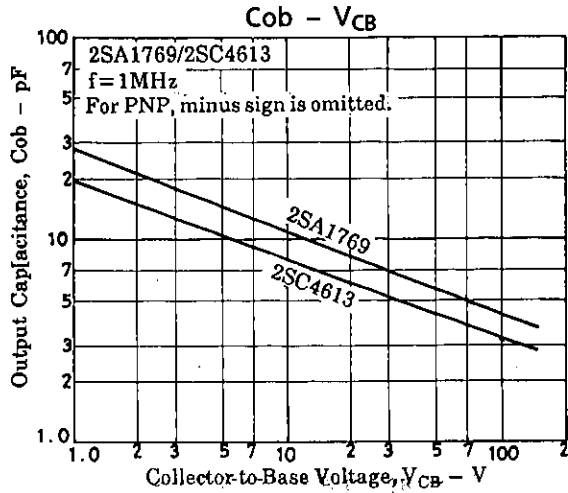
			min	typ	max	unit
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10V, f = 1MHz$		8		pF
Turn-ON Time	$t_{on}$	See specified Test Circuit.		(11)		pF
Storage Time	$t_{stg}$	◇		50		ns
Fall Time	$t_f$	◇		(60)		ns
				1000		ns
				(900)		ns
				60		ns
				(60)		ns



2SA1769/2SC4613



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