



# 2SA1770/2SC4614

## High-Voltage Switching Applications

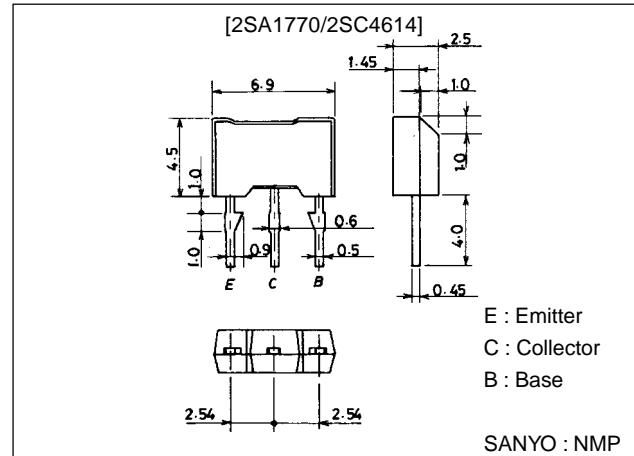
### Features

- Adoption of MBIT process.
- High breakdown voltage and large current capacity.

### Package Dimensions

unit:mm

2064



() : 2SA1770

### Specifications

#### Absolute Maximum Ratings at Ta = 25°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	$I_C$		(-1.5)	A
Collector Current (Pulse)	$I_{CP}$		(-2.5)	A
Collector Dissipation	$P_C$		1	W
Junction Temperature	$T_J$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)120V, I_E = 0$			(-1)	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4V, I_C = 0$			(-1)	$\mu A$
DC Current Gain	$h_{FE1}$	$V_{CE} = (-)5V, I_C = (-)100mA$	100*		400*	
	$h_{FE2}$	$V_{CE} = (-)5V, I_C = (-)10mA$	80			
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)10V, I_C = (-)50mA$		120		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10V, f = 1MHz$		(22)14		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)500mA, I_B = (-)50mA$		(-200)	(-500)	mV
				130	450	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)500mA, I_B = (-)50mA$		(-0.85)	(-1.2)	V

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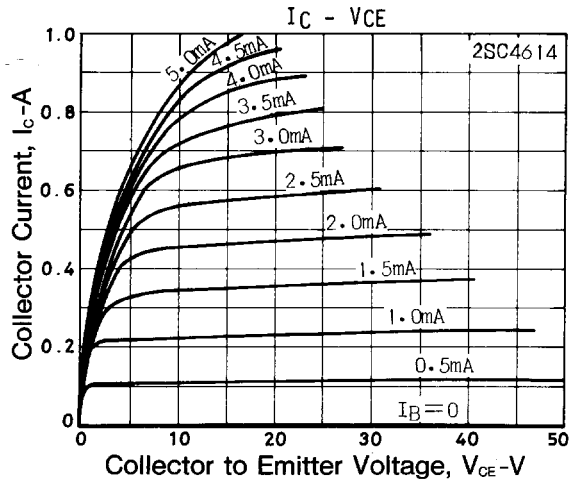
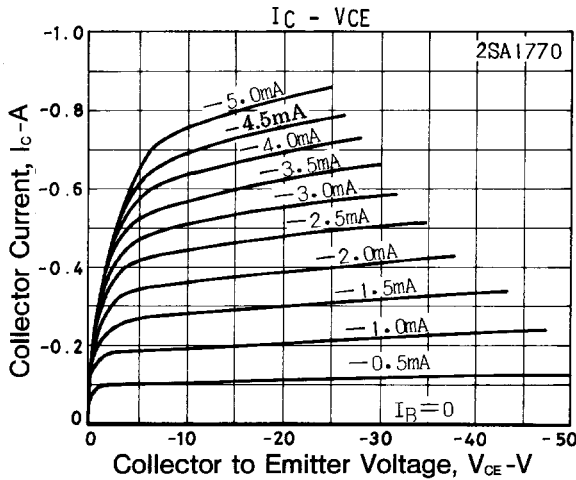
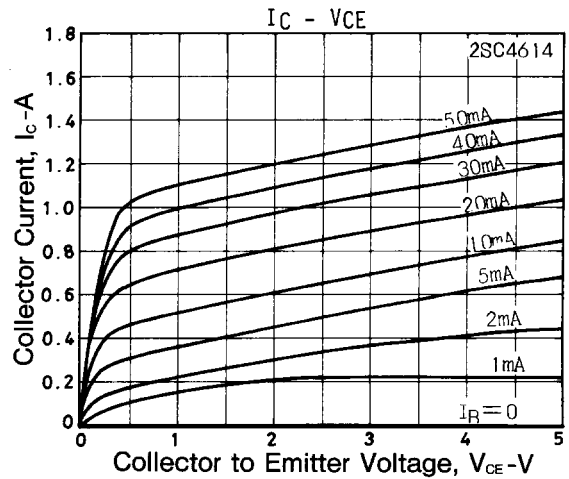
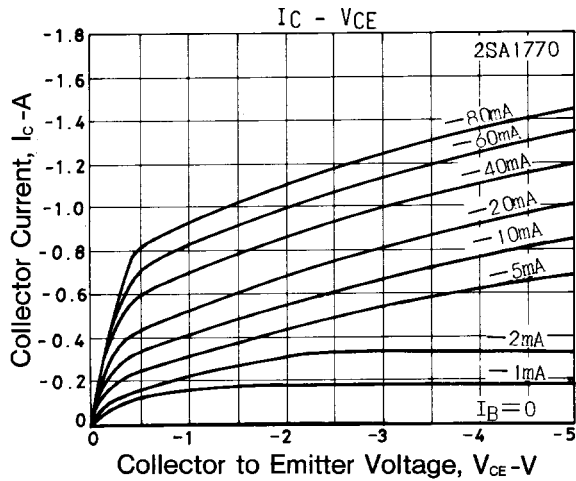
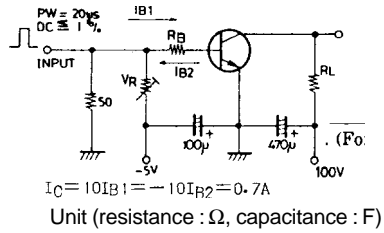
# 2SA1770/2SC4614

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		(40)40		ns
Storage Time	$t_{stg}$	See specified Test Circuit		(0.7)		$\mu s$
				1.2		$\mu s$
Fall Time	$t_f$	See specified Test Circuit		(40)80		ns

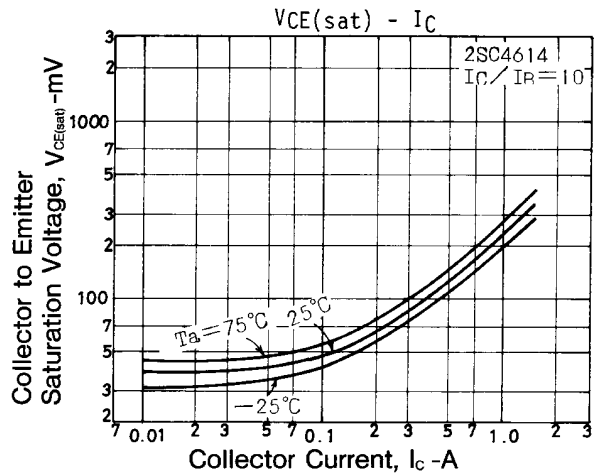
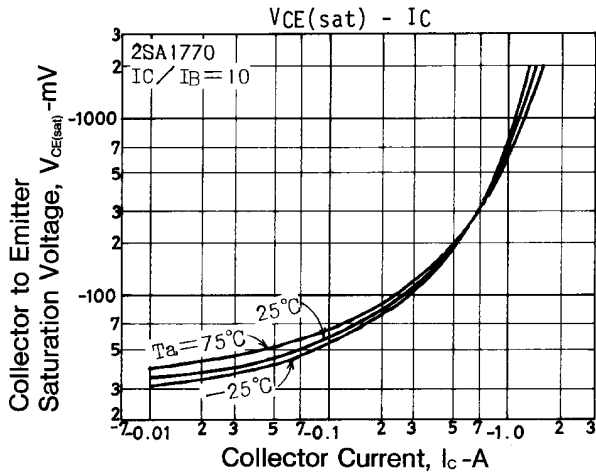
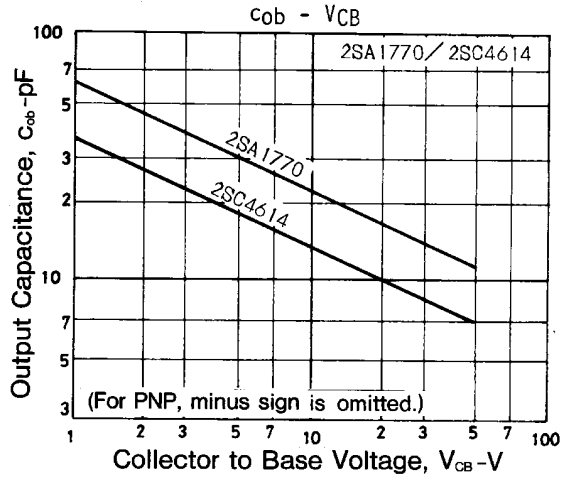
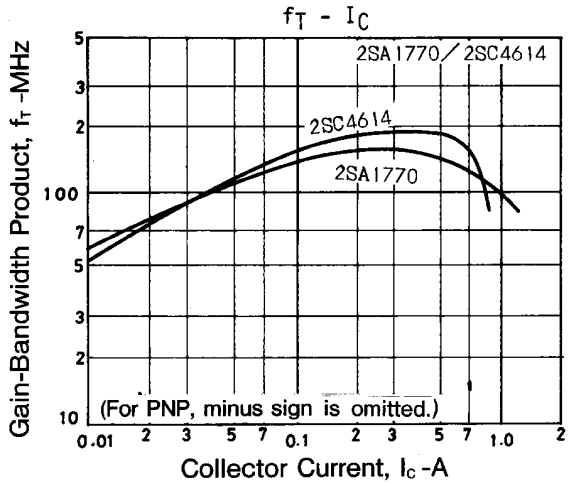
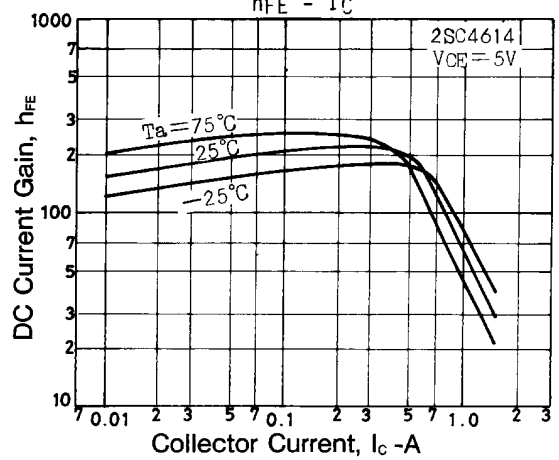
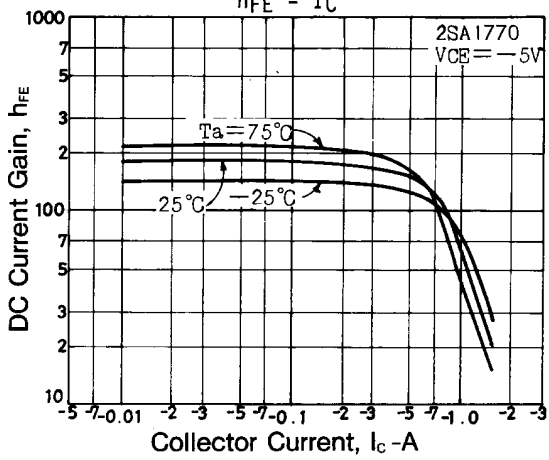
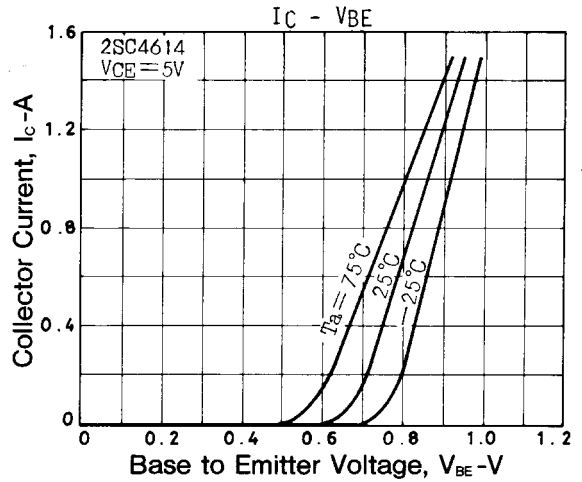
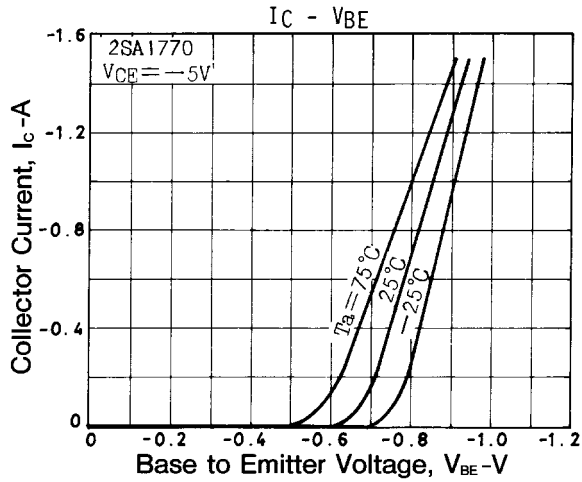
\* ; The 2SA1770/2SC4614 are classified by 100mA  $h_{FE}$  as follows :

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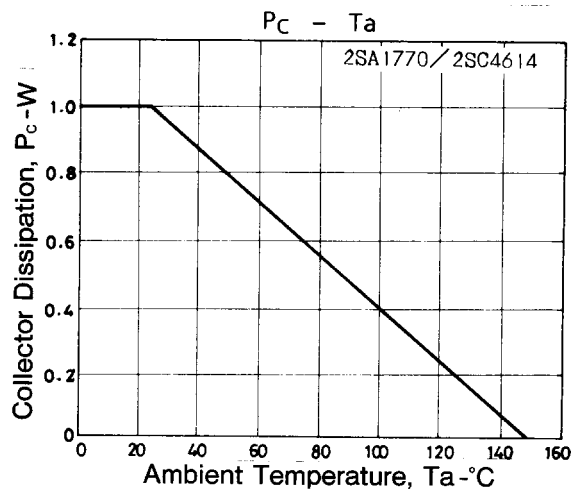
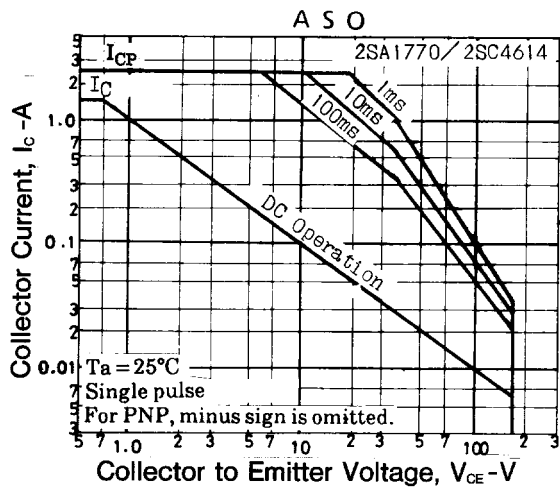
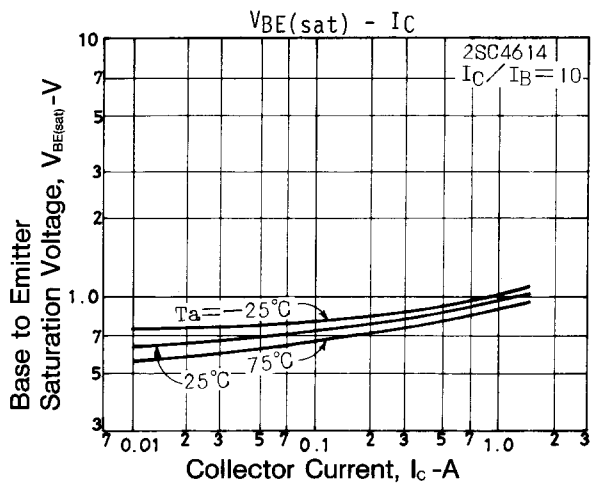
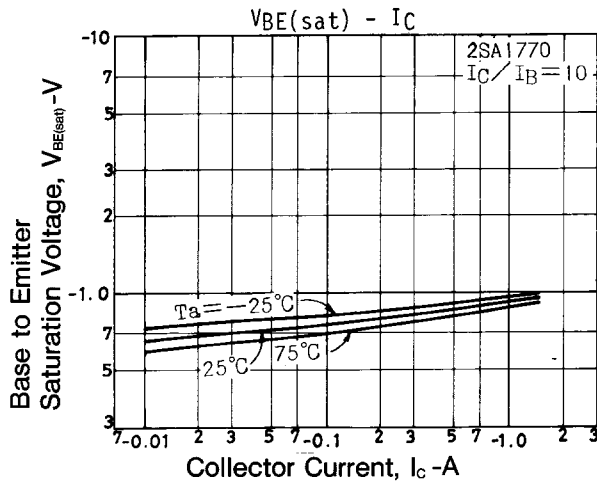
## Switching Time Test Circuit



# 2SA1770/2SC4614



## 2SA1770/2SC4614



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