



2SA1770/2SC4614

High-Voltage Switching Applications

An ON Semiconductor Company

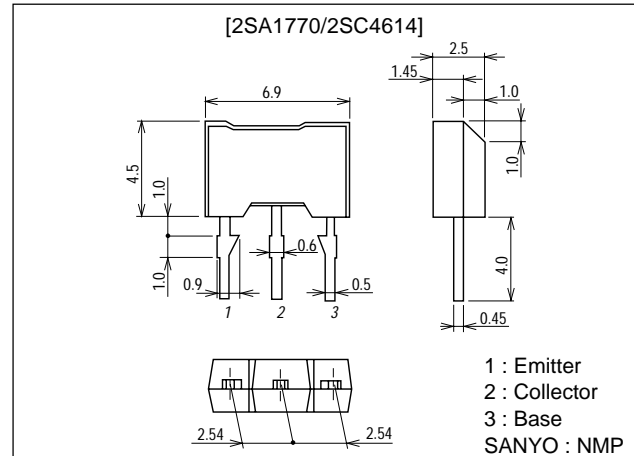
Features

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

Package Dimensions

unit:mm

2064A



() : 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)	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0$			(-1)	μA
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

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

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Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

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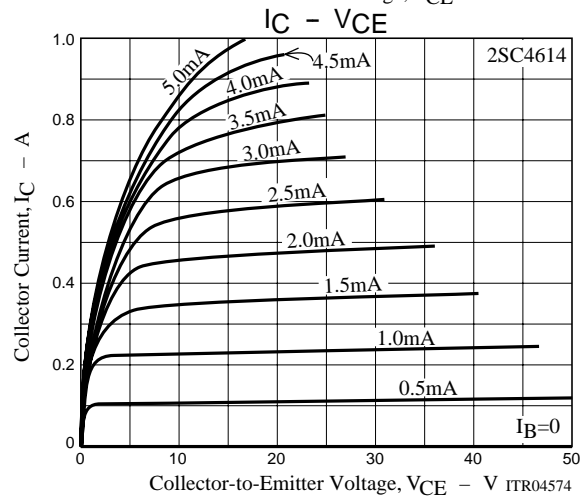
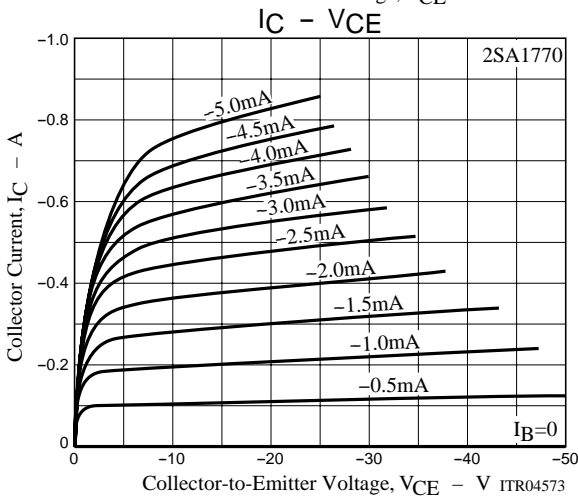
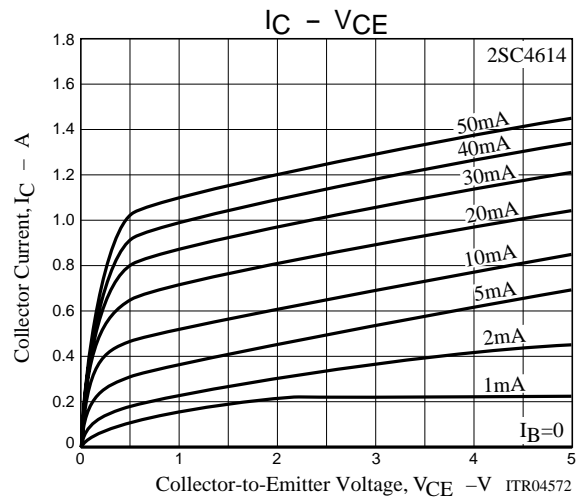
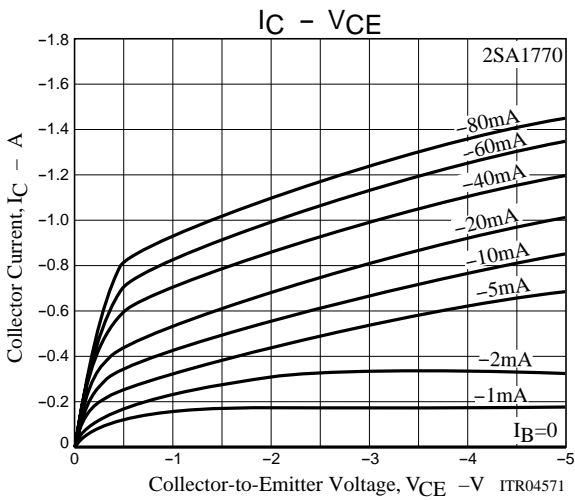
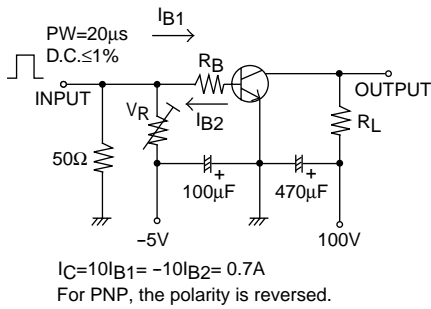
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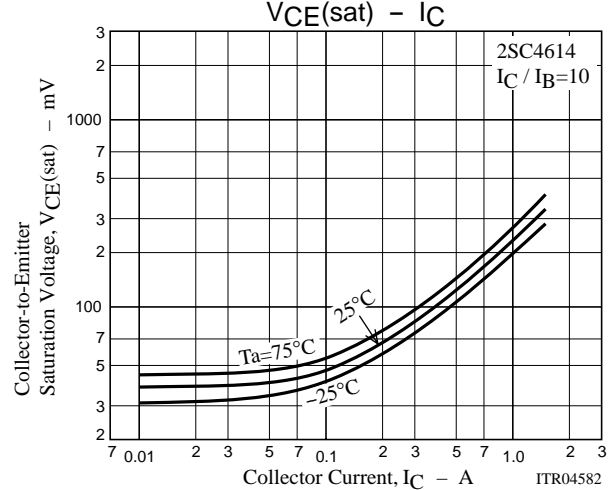
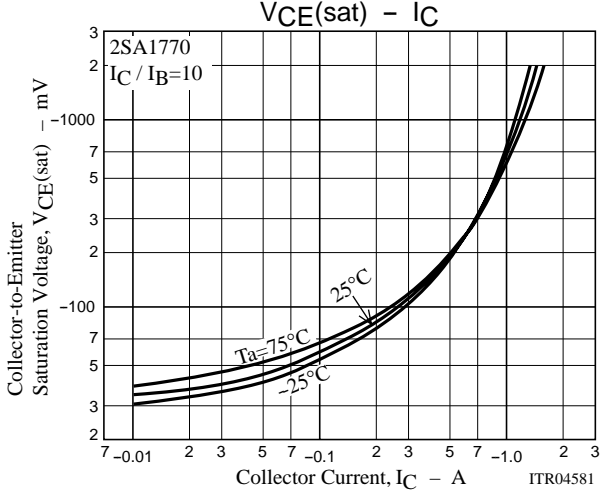
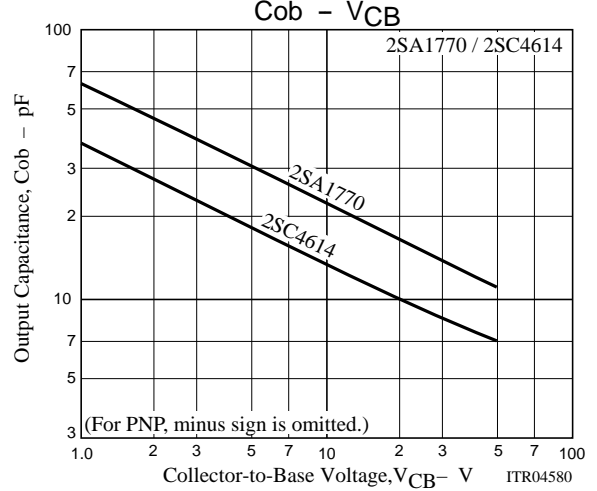
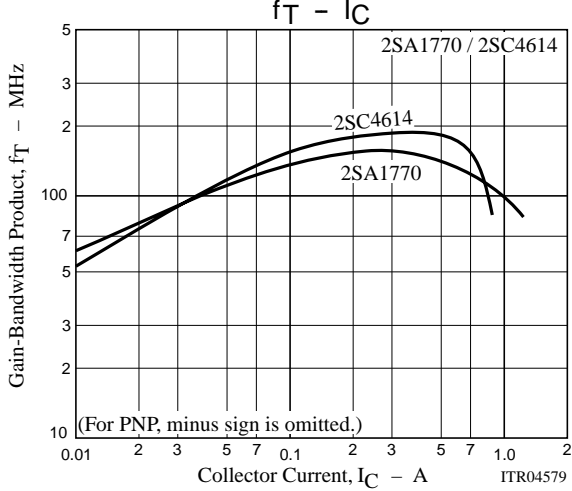
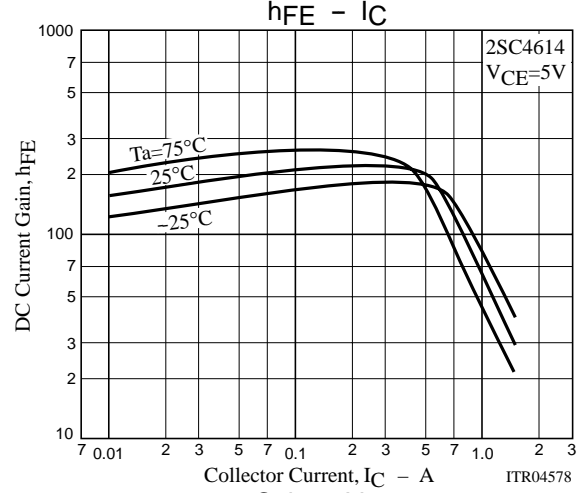
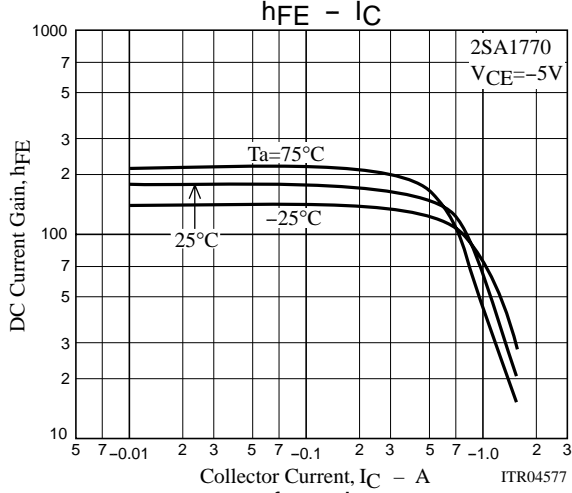
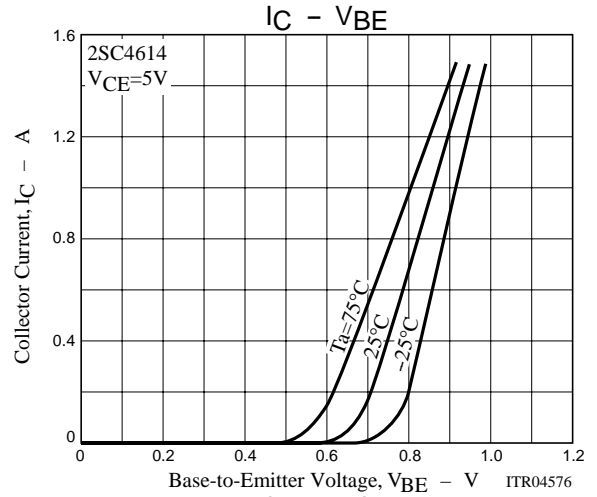
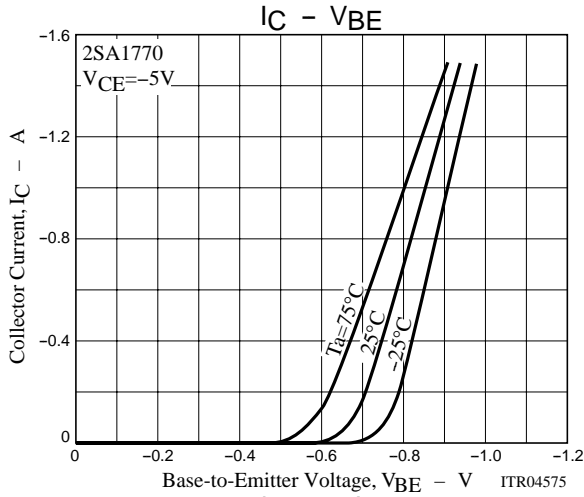
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(22)14		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		(-200)	(-500)	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500mA, I_B=(-)50mA$		130	450	mV
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)		μs
				1.2		μs
Fall Time	t_f	See specified Test Circuit		(40)80		ns

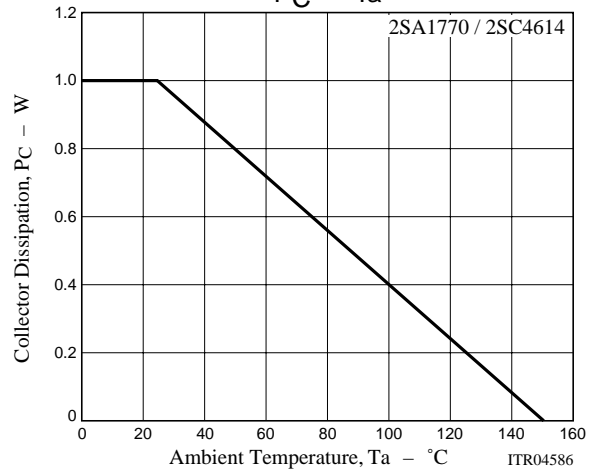
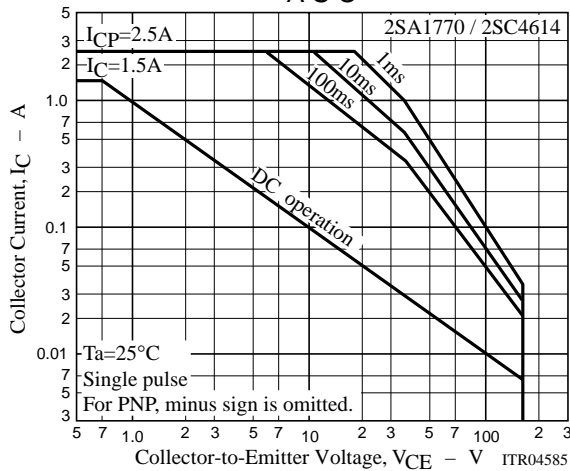
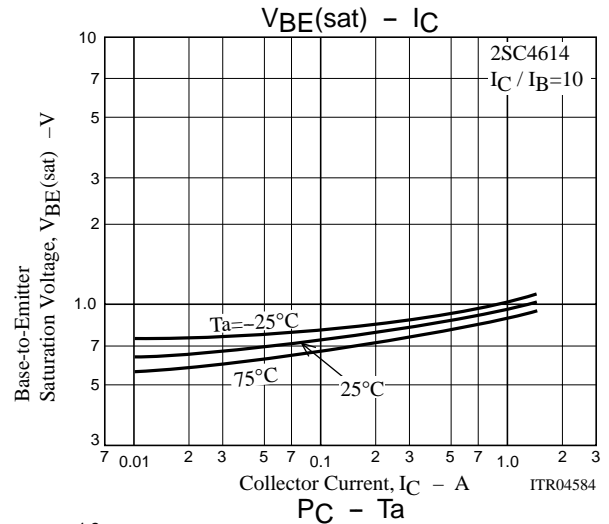
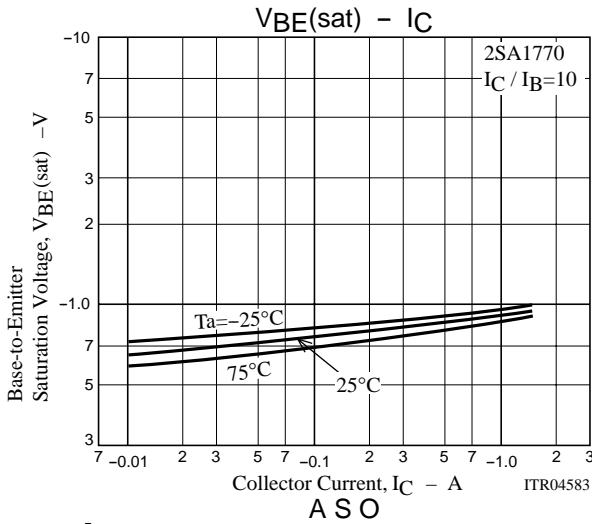
Switching Time Test Circuit



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