



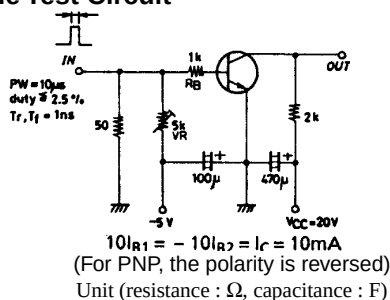
2SA1331/2SC3361

High-Speed Switching Applications

Features

- Fast switching speed.
- High breakdown voltage.
- Small-sized package permitting the 2SA1331/2SC3361-applied sets to be made small and slim.

Switching Time Test Circuit



() : 2SA1331

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)60	V
Collector-to-Emitter Voltage	V_{CEO}		(-)50	V
Emitter-to-Base Voltage	V_{EBO}		(-)5	V
Collector Current	I_C		(-)150	mA
Collector Current (Pulse)	I_{CP}		(-)400	mA
Base Current	I_B		(-)40	mA
Collector Dissipation	P_C		150	mW
Junction Temperature	T_J		125	°C
Storage Temperature	T_{stg}		-55 to +125	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40V, I_E=0$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4V, I_C=0$			(-)0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)6V, I_C=(-)1mA$	90*		400*	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)6V, I_C=(-)1mA$		100		MHz
Common Base Output Capacitance	C_{ob}	$V_{CB}=(-)6V, f=1MHz$		(3.5) 2.7		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)10mA, I_B=(-)1mA$		(-)0.1	(-)0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)10mA, I_B=(-)1mA$		(-)0.75	(-)1.1	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10μA, I_E=0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10μA, I_C=0$	(-)5			V
Delay Time	t_d	See specified Test Circuit		40		ns
Rise Time	t_r	See specified Test Circuit		(120) 80		ns
Storage Time	t_{stg}	See specified Test Circuit		(190) 230		ns
Fall Time	t_f	See specified Test Circuit		(200) 160		ns

* : The 2SA1331/2SC3361 are classified by 1mA h_{FE} as follows :

90	4	180	135	5	270	200	6	400
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Marking 2SA1331 : O, 2SC3361 : S

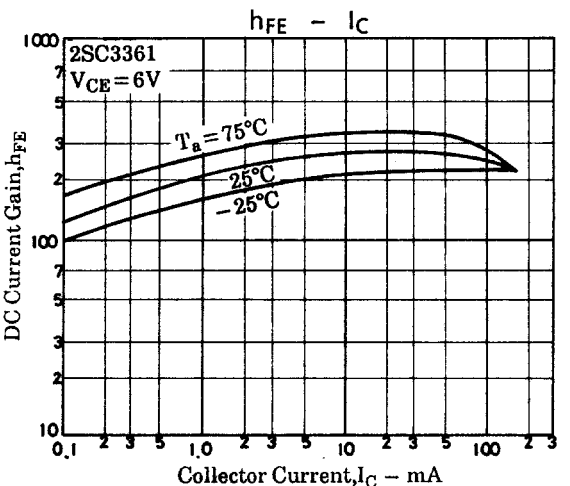
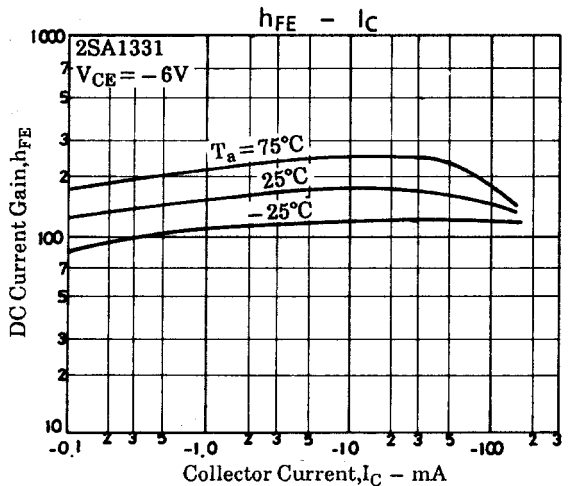
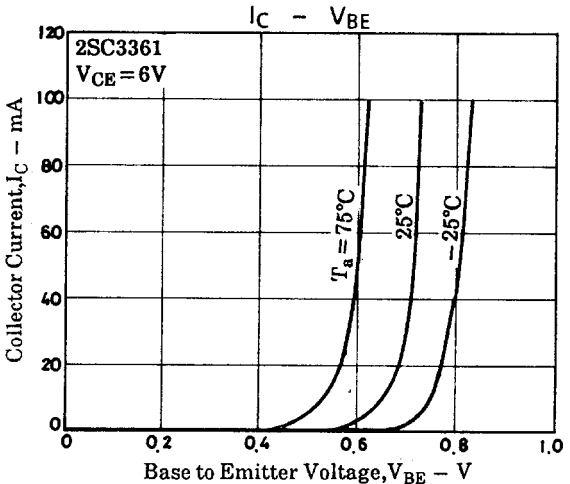
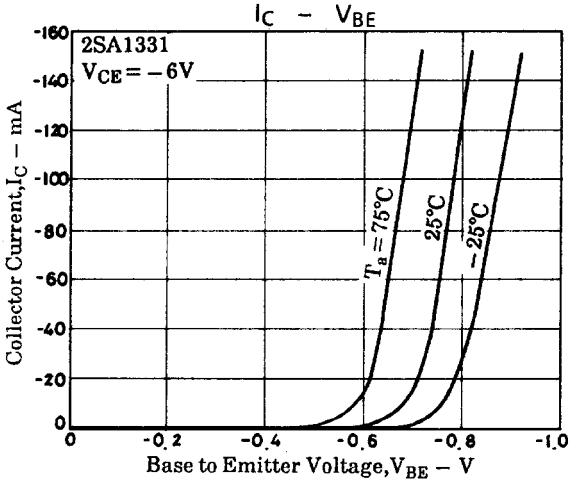
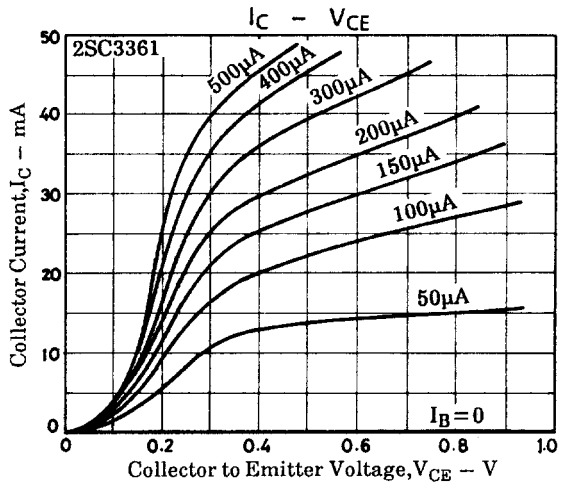
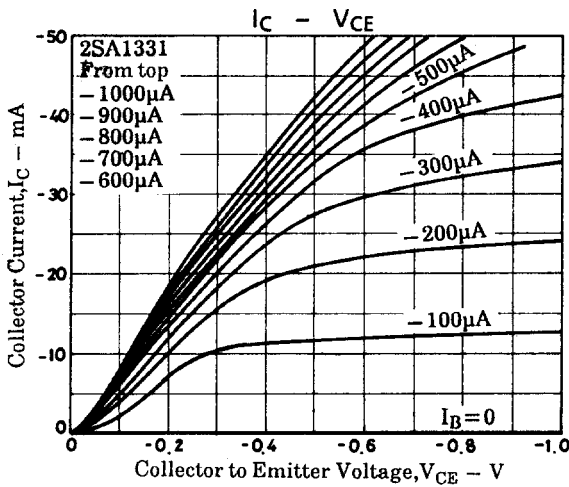
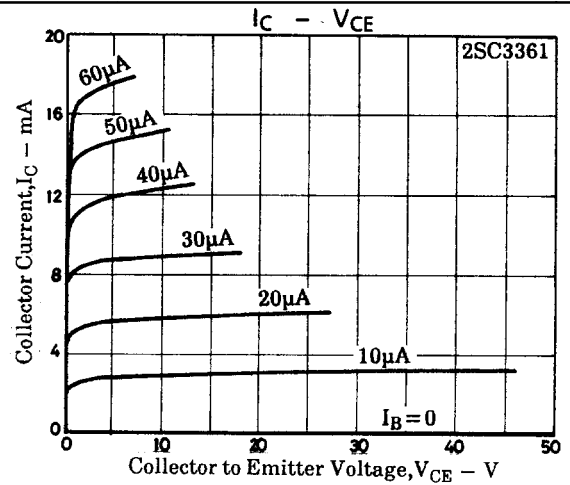
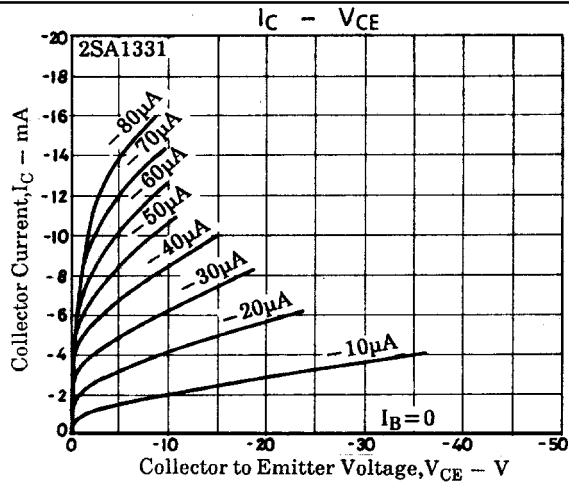
h_{FE} rank : 4, 5, 6

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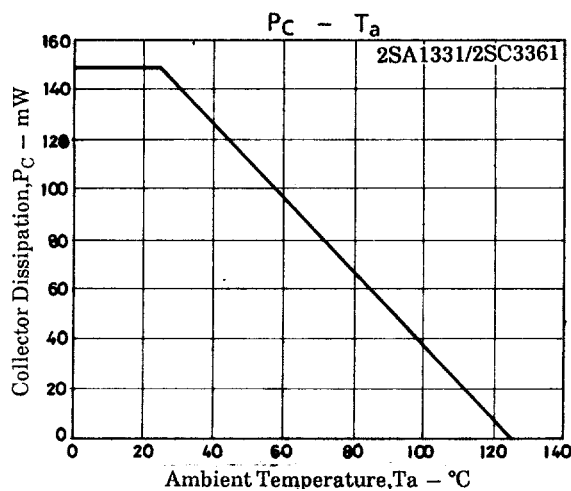
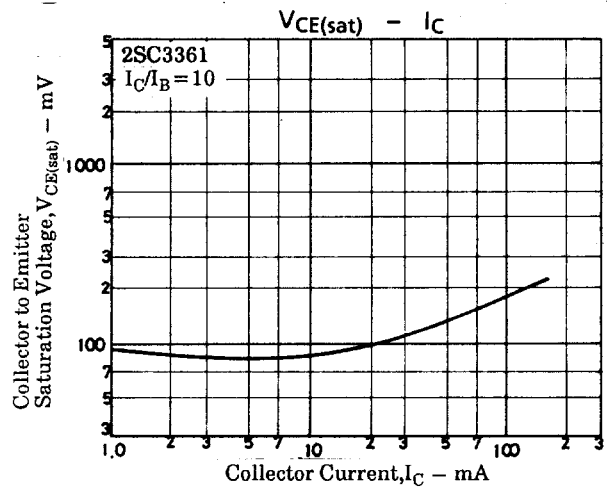
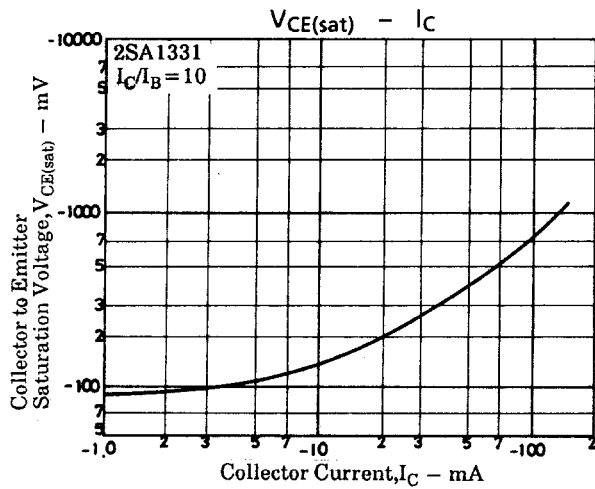
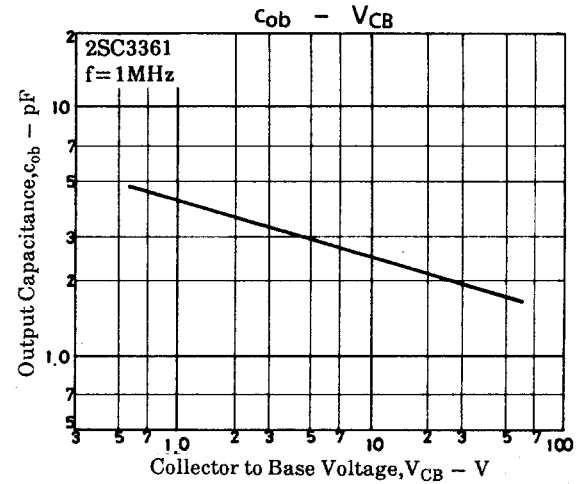
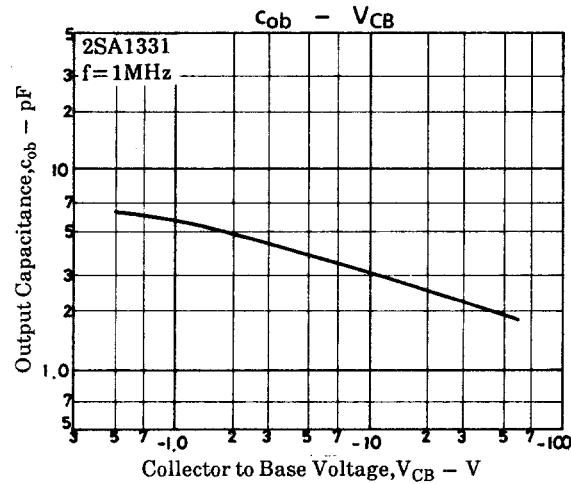
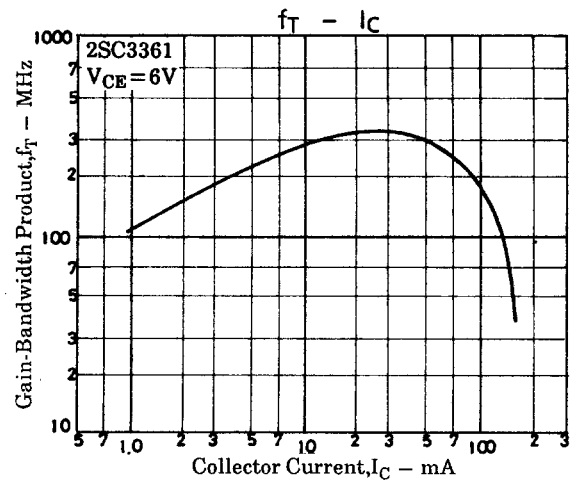
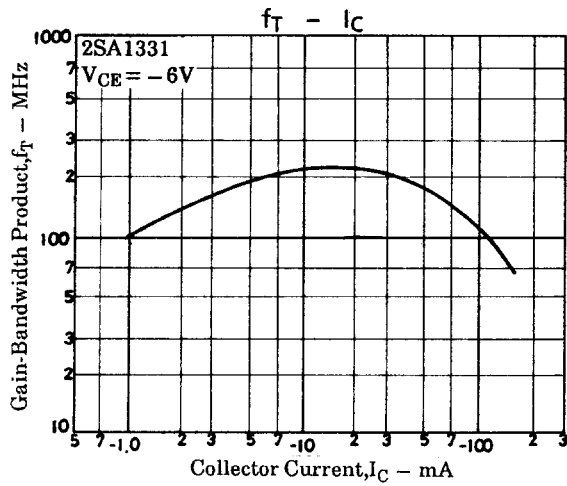
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