

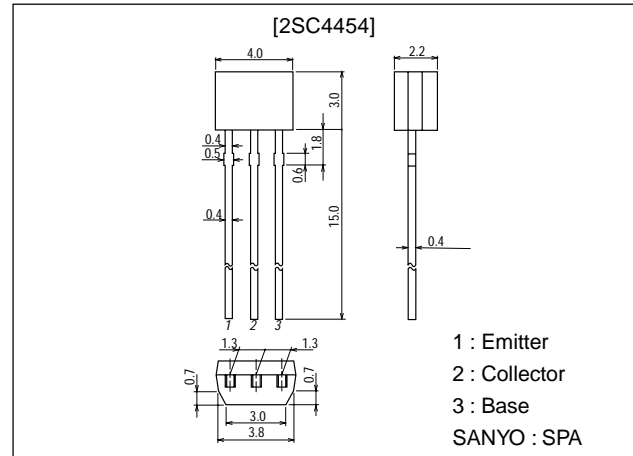
**2SC4454****High-Speed Switching Applications****Features**

- Fast switching speed.
- Low collector saturation voltage.
- High gain-bandwidth product.
- Small collector capacity.

**Package Dimensions**

unit:mm

2033A

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		40	V
Collector-to-Emitter Voltage	$V_{CES}$		40	V
	$V_{CEO}$		15	V
Emitter-to-Base Voltage	$V_{EBO}$		5	V
Collector Current	$I_C$		200	mA
Collector Current (Pulse)	$I_{CP}$		500	mA
Base Current	$I_B$		40	mA
Collector Dissipation	$P_C$		300	mW
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	$I_{CBO}$	$V_{CB}=20V, I_E=0$			0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=3V, I_C=0$			0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=1V, I_C=10mA$	50*	90	200*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=10mA$	450	750		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=5V, f=1MHz$		1.6	4.0	pF

\* : The 2SC4454 is classified by 10mA  $h_{FE}$  as follows :

50	P	100	70	Q	140	100	R	200
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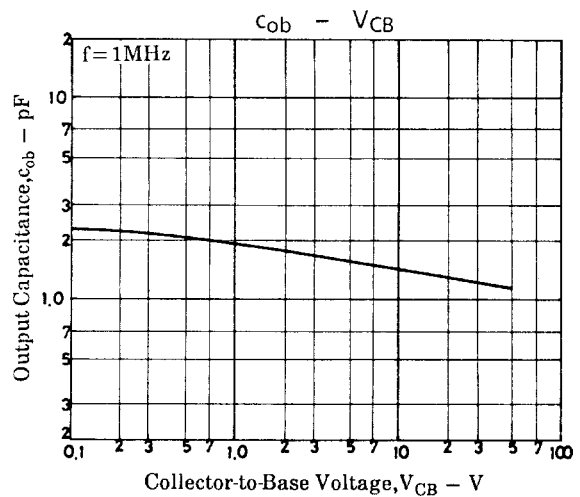
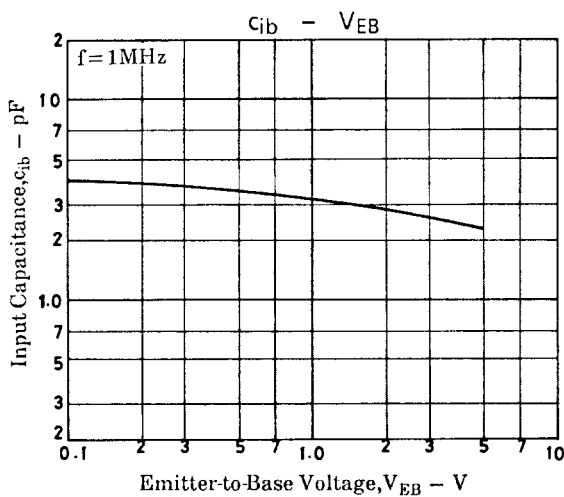
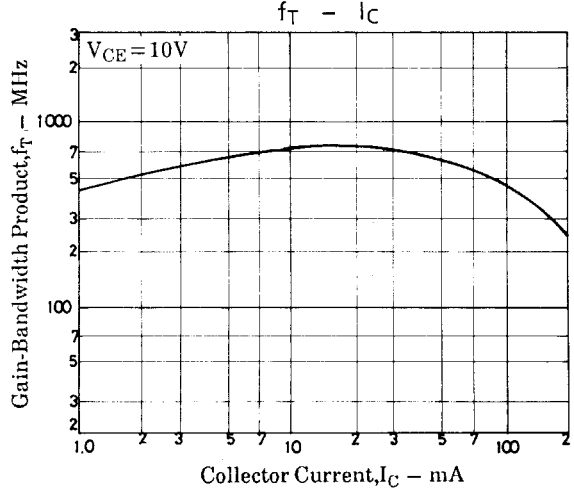
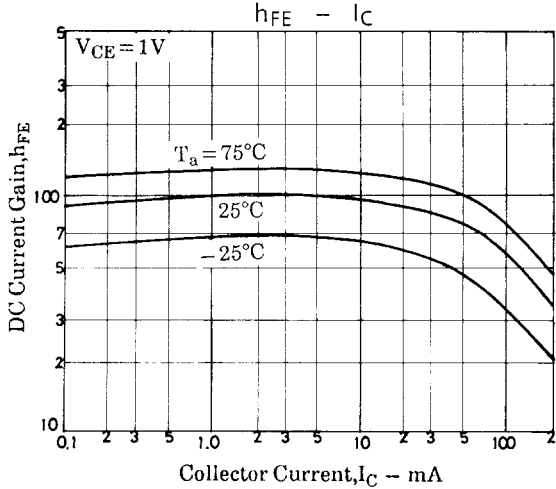
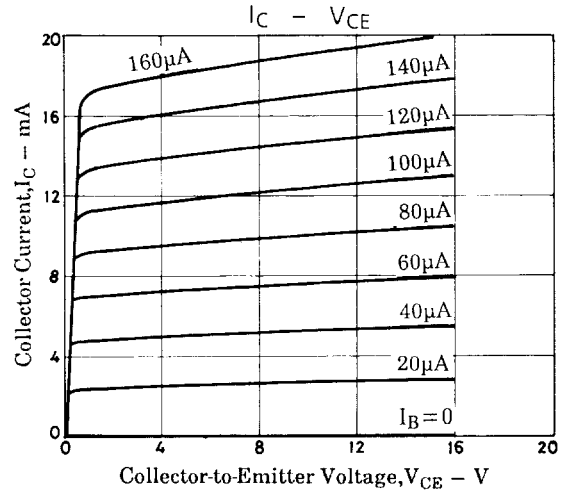
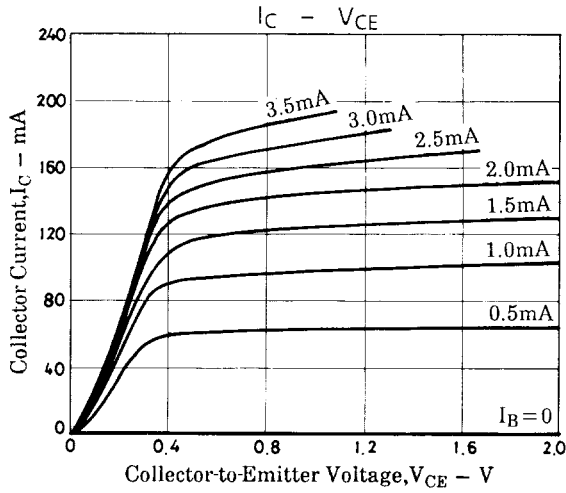
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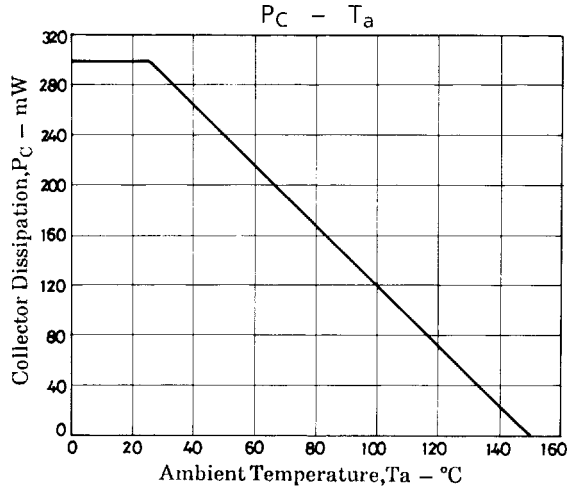
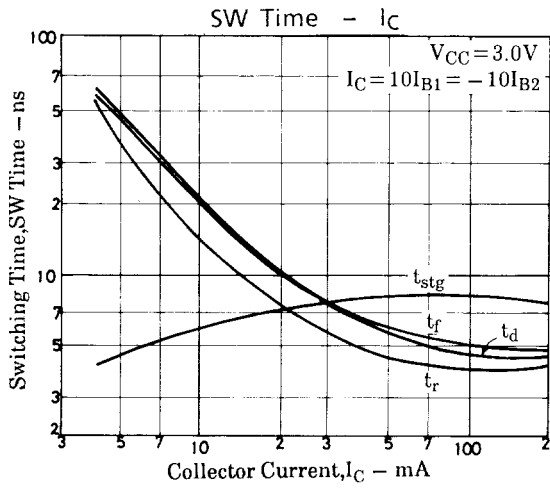
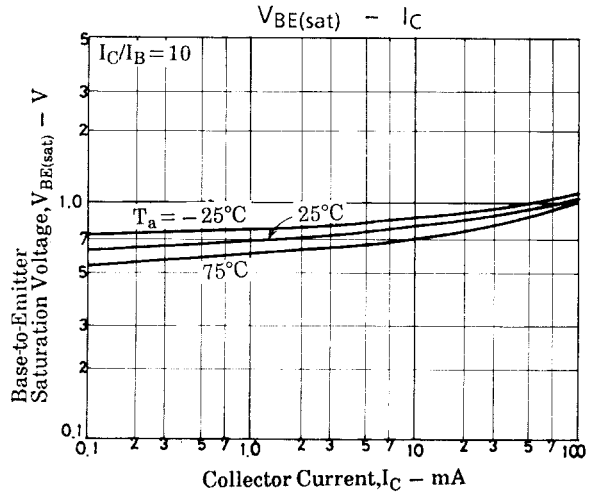
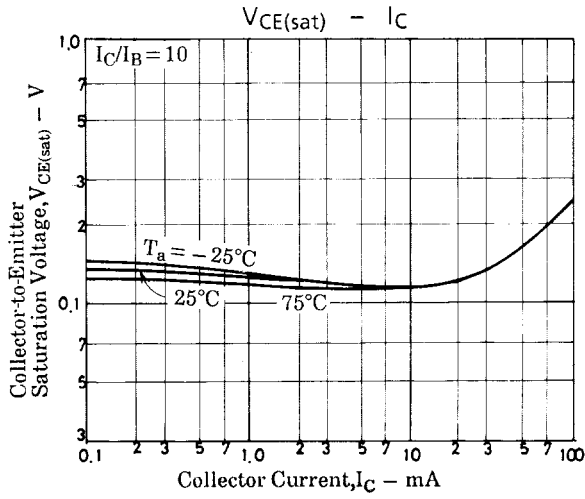
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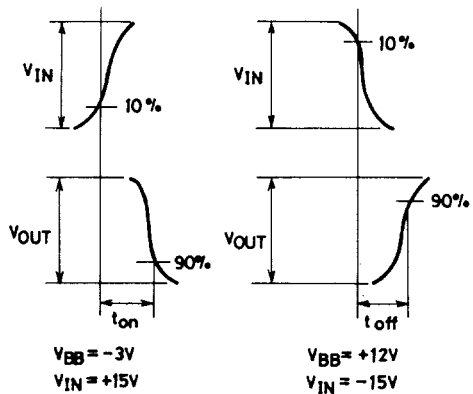
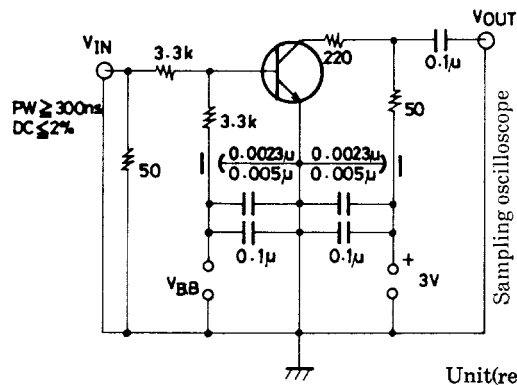
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=1mA$		0.13	0.25	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10mA, I_B=1mA$		0.80	0.85	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	15			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	5			V
Turn-ON Time	$t_{on}$	See specified test circuit.		8.0	12	ns
Storage Time	$t_{stg}$	See specified test circuit.		6.0	13	ns
Fall Time	$t_f$	See specified test circuit.		12	18	ns



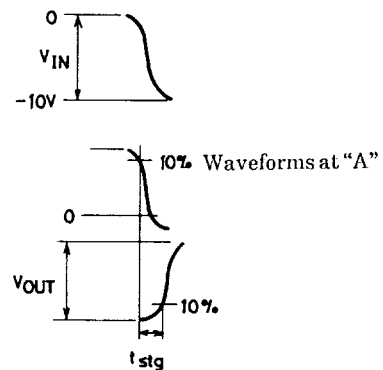
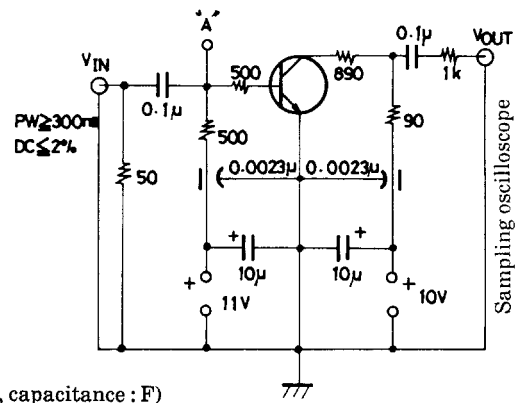
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## $t_{on}$ , $t_{off}$ Test Circuit



## $t_{stg}$ Test Circuit



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