

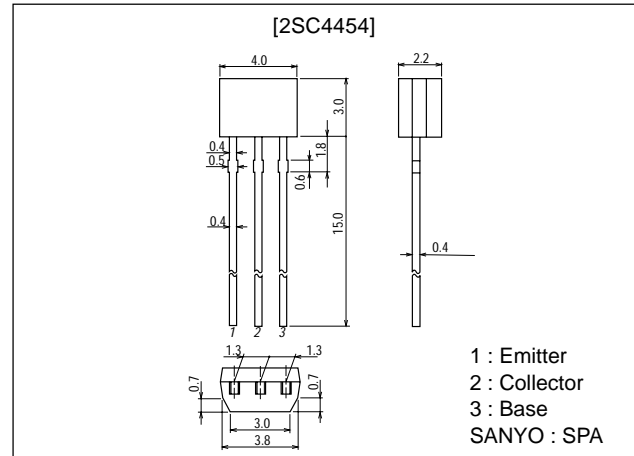
**2SC4454****High-Speed Switching Applications****Features**

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

Package Dimensions

unit:mm

2033A

**Specifications****Absolute Maximum Ratings** at $T_a = 25^\circ\text{C}$

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	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=20\text{V}, I_E=0$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=3\text{V}, I_C=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=1\text{V}, I_C=10\text{mA}$	50*	90	200*	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=10\text{mA}$	450	750		MHz

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

Continued on next page.

Rank	P	Q	R
h_{FE}	50 to 100	70 to 140	100 to 200

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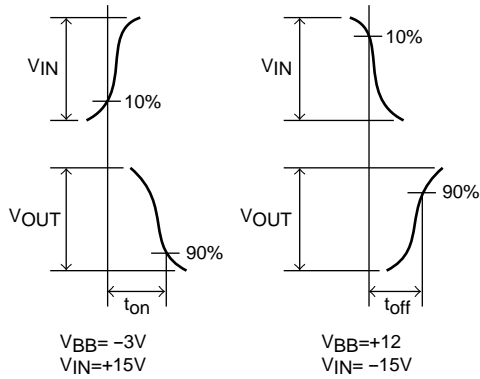
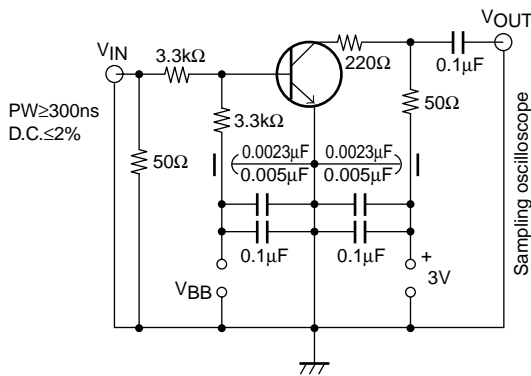
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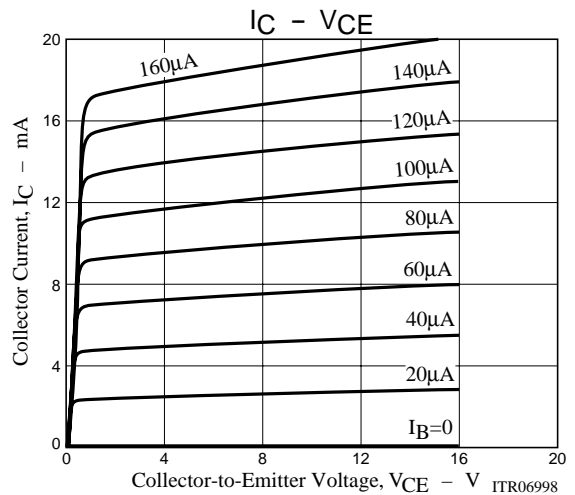
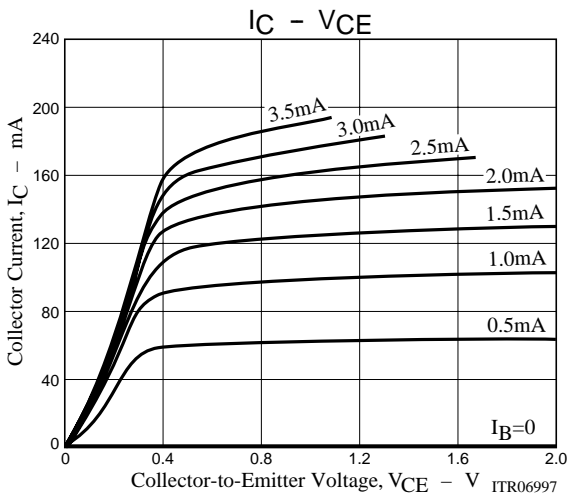
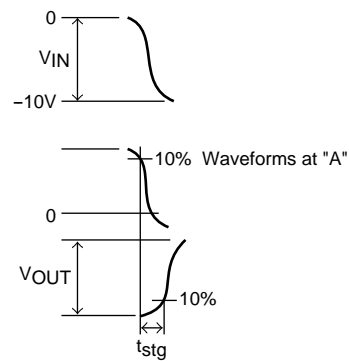
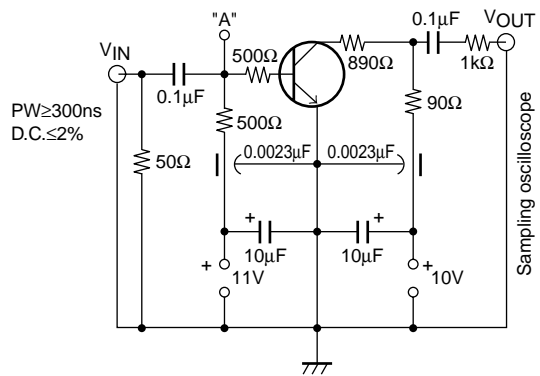
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output Capacitance	C_{ob}	$V_{CB}=5V, f=1MHz$		1.6	4.0	pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=1mA$		0.13	0.25	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10mA, I_B=1mA$		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

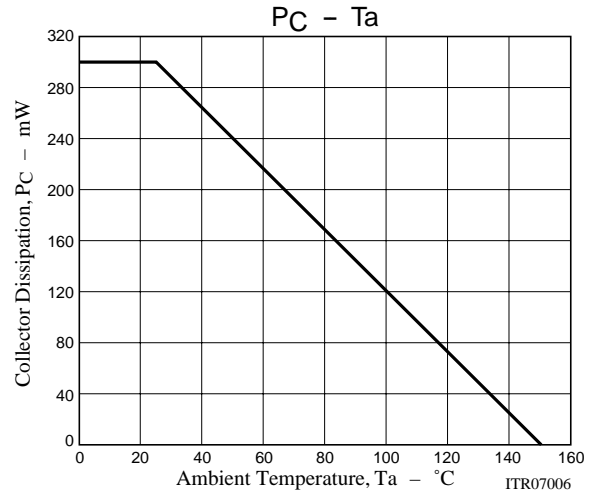
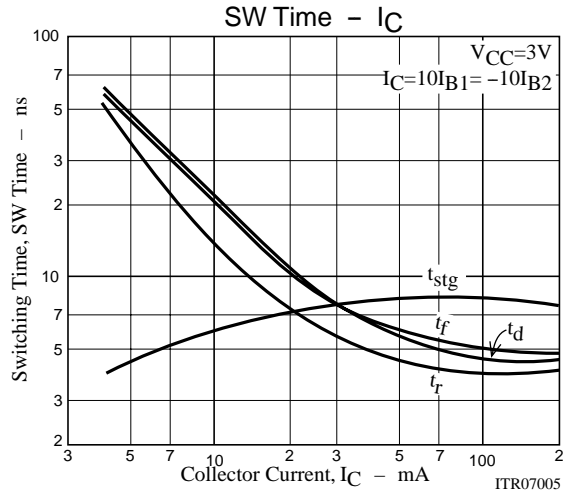
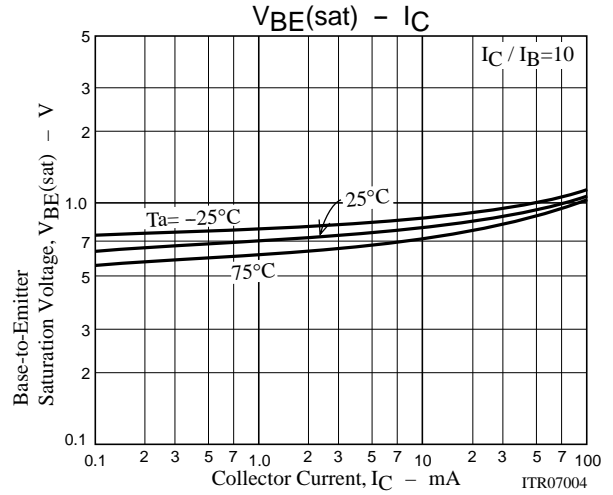
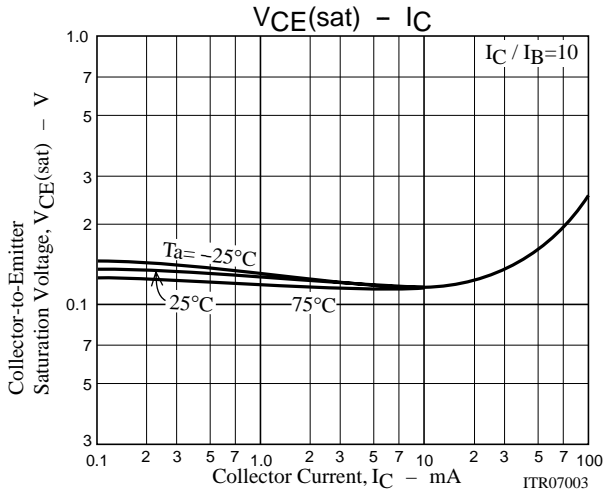
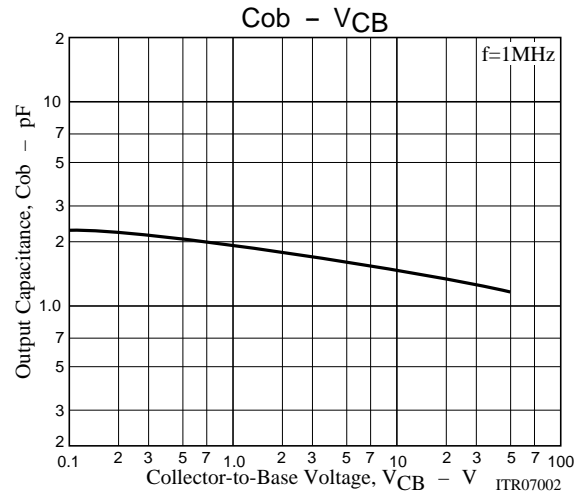
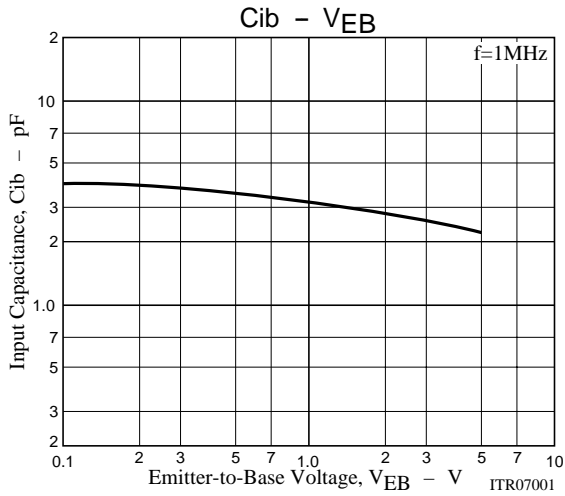
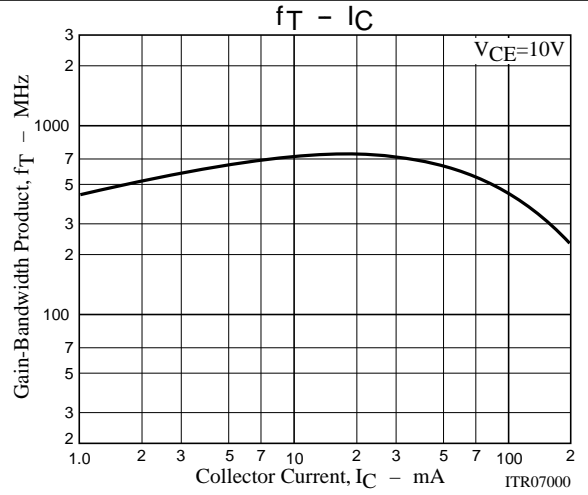
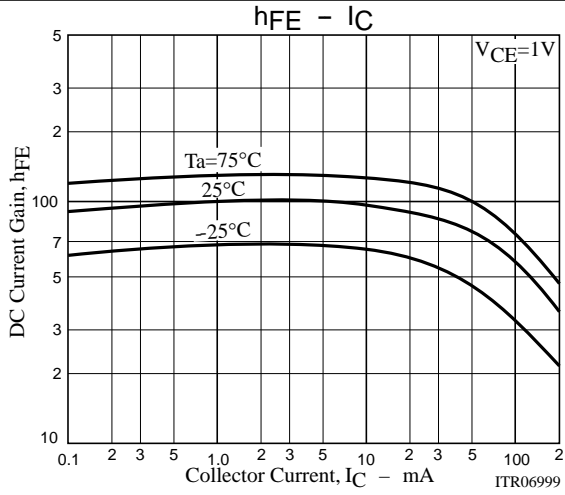
t_{on}, t_{off} Test Circuit



t_{stg} Test Circuit



2SC4454



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