



# 2SC4453

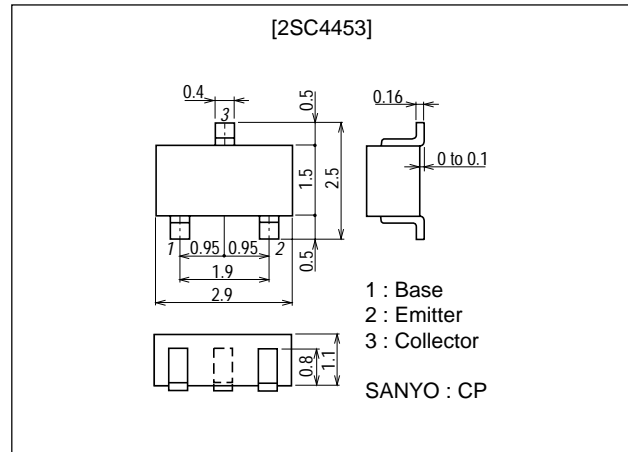
## High-Speed Switching Applications

### Features

- Fast switching speed.
- Low collector saturation voltage.
- High gain-bandwidth product.
- Small collector capacity.
- Ultrasmall-sized package permitting the 2SC4453-applied sets to be made small and slim.

### Package Dimensions

unit : mm  
2018B



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		40	V
Collector-to-Emitter Voltage	V <sub>CES</sub>		40	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		15	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		5	V
Collector Current	I <sub>C</sub>		200	mA
Collector Current (Pulse)	I <sub>CP</sub>		500	mA
Base Current	I <sub>B</sub>		40	mA
Collector Dissipation	P <sub>C</sub>		200	mW
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CB0</sub>	V <sub>CB</sub> =20V, I <sub>E</sub> =0			0.1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =3V, I <sub>C</sub> =0			0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =10mA	50*	90	200*	

Marking : ST

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\* : The 2SC4453 is classified by 5mA h<sub>FE</sub> as follows :

Rank	2	3	4
h <sub>FE</sub>	50 to 100	70 to 140	100 to 200

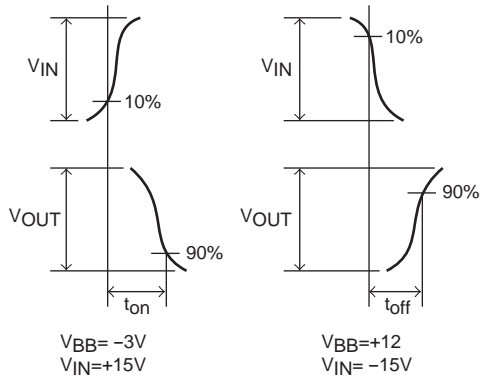
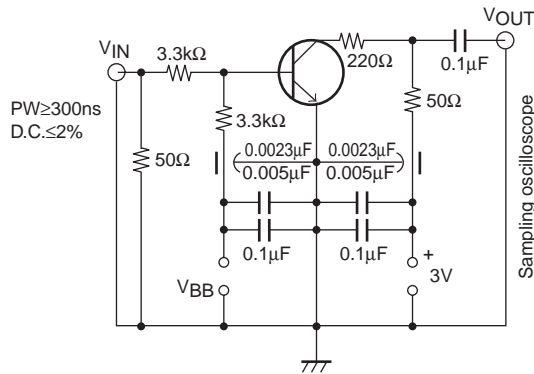
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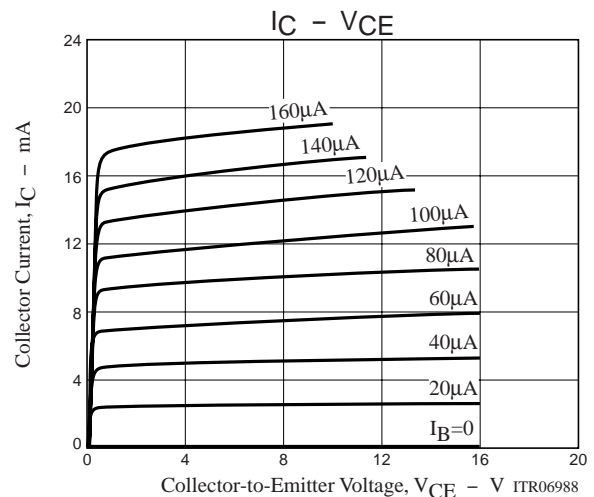
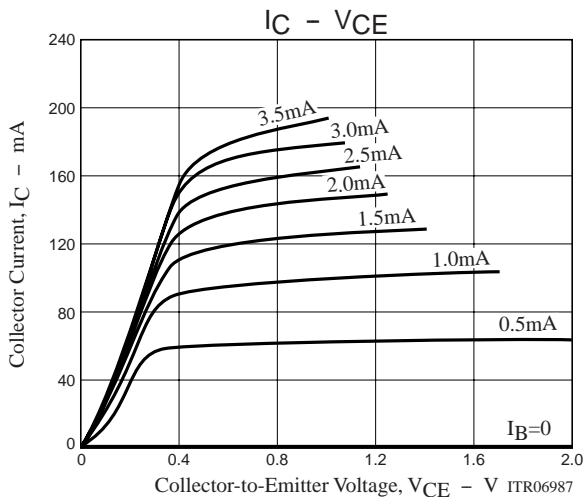
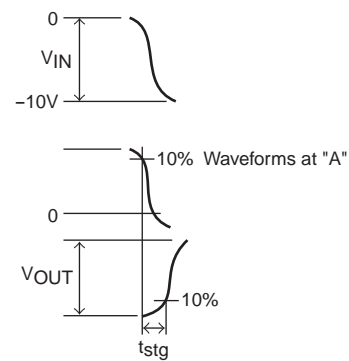
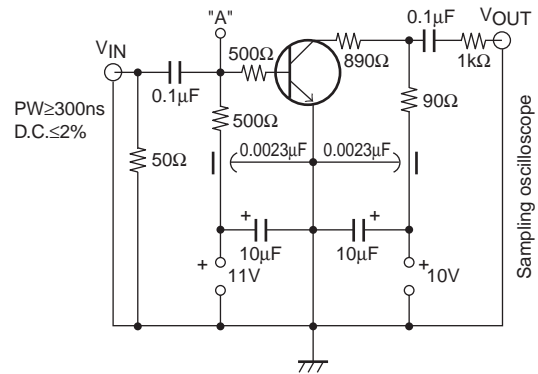
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=10mA$	450	750		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=5V, f=1MHz$		1.4	4.0	pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA, I_B=1mA$		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		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		6.0		ns
Fall Time	$t_f$	See specified Test Circuit.		12		ns

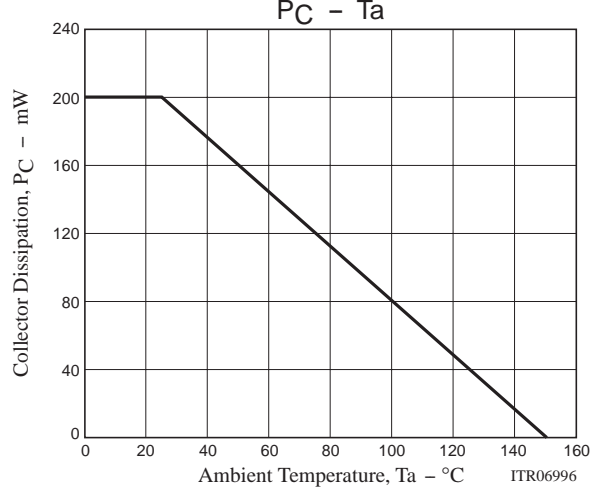
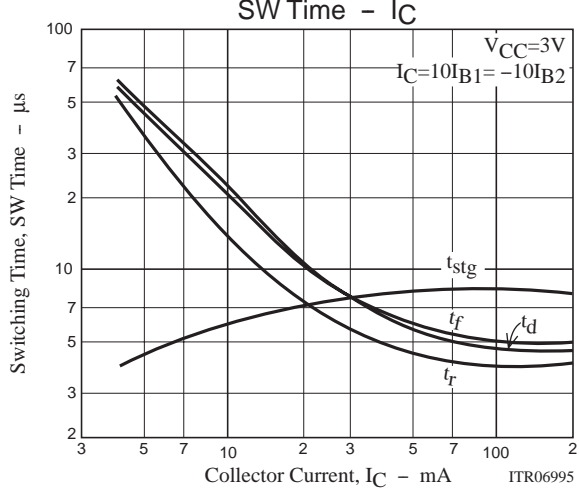
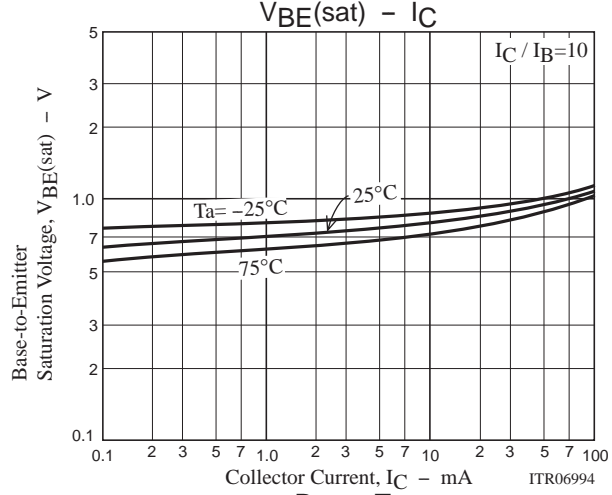
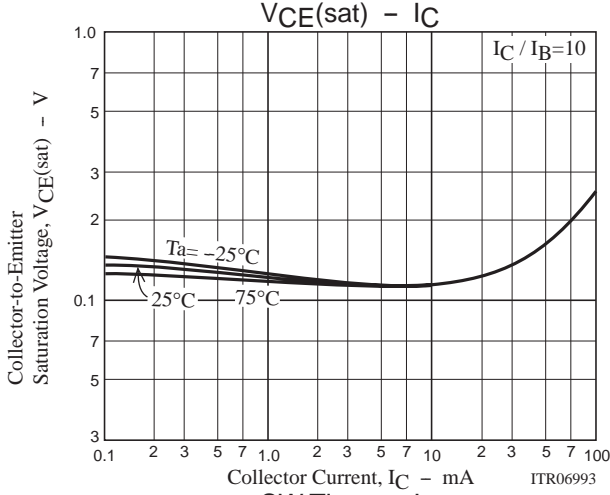
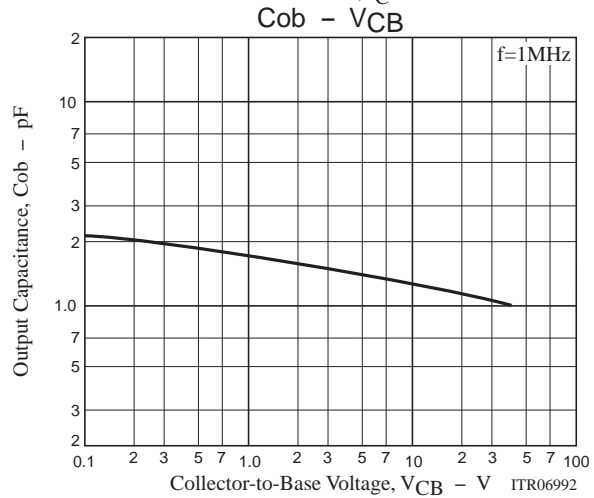
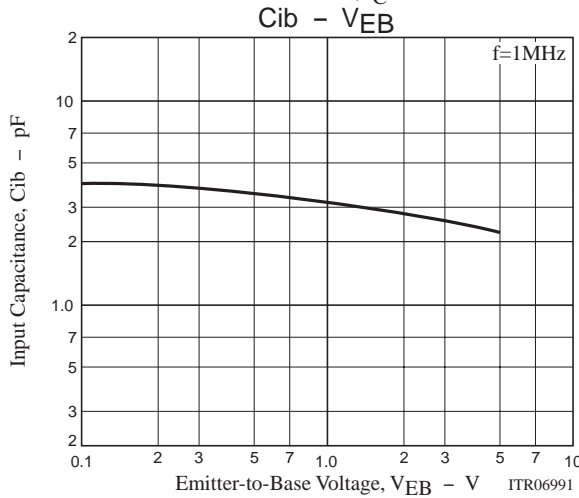
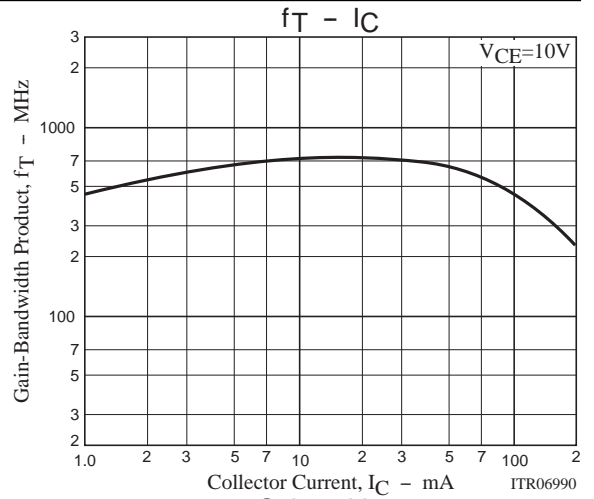
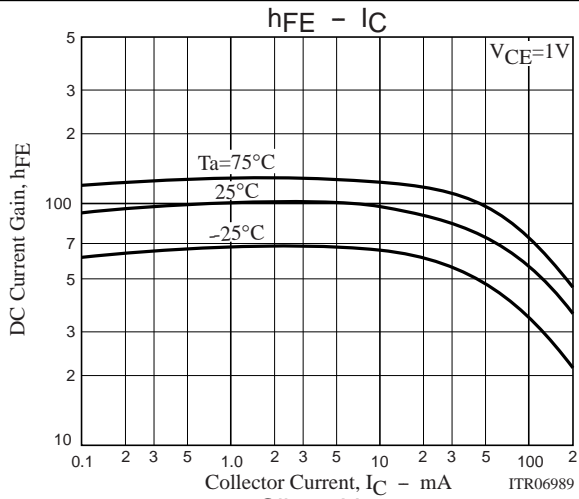
### ton, toff Test Circuit



### tstg Test Circuit



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