



2SA1481/2SC2960

High-Speed Switching Applications

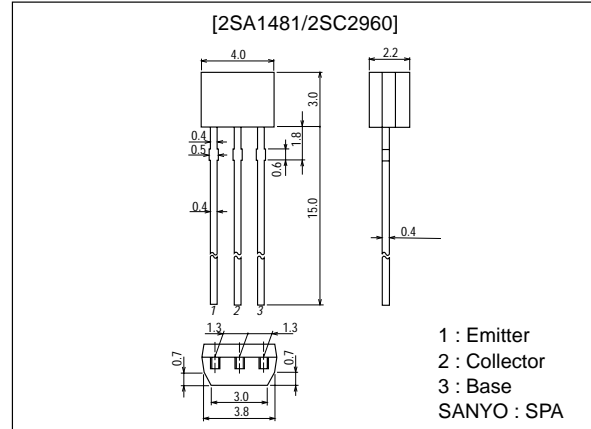
Features

- Fast switching speed.
- High breakdown voltage.

Package Dimensions

unit:mm

2033A



() : 2SA1481

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)-60	V
Collector-to-Emitter Voltage	V_{CEO}		(-)-50	V
Emitter-to-Base Voltage	V_{EBO}		(-)-5	V
Collector Current	I_C		(-)-150	mA
Peak Collector Current	I_{CP}		(-)-400	mA
Collector Dissipation	P_C		250	mW
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)400\text{V}, I_E = 0$			(-)-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)-0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = (-)6\text{V}, I_C = (-)1\text{mA}$	100*		560*	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)6\text{V}, I_C = (-)1\text{mA}$		100		MHz
Output Capacitance	C_{ob}	$V_{CB} = (-)6\text{V}, f = 1\text{MHz}$		2.7		pF
				(4.0)		pF

* ; The 2SA1481/2SC2960 are classified by 1mA h_{FE} as follows :

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Rank	E	F	G
h_{FE}	100 to 200	160 to 320	280 to 560

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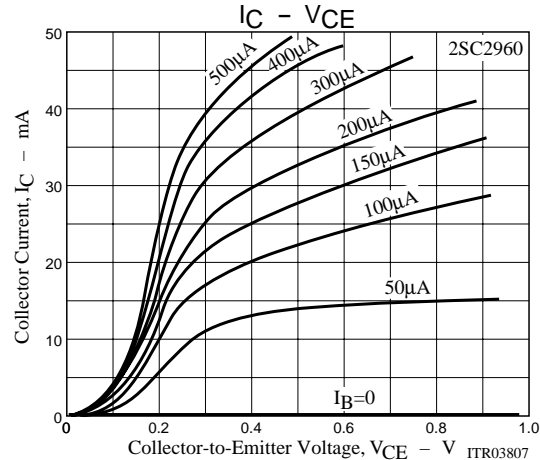
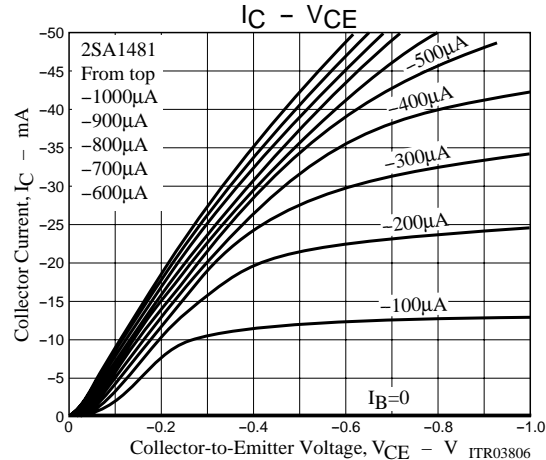
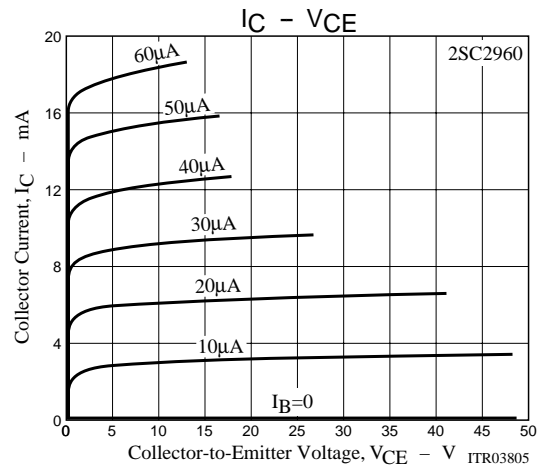
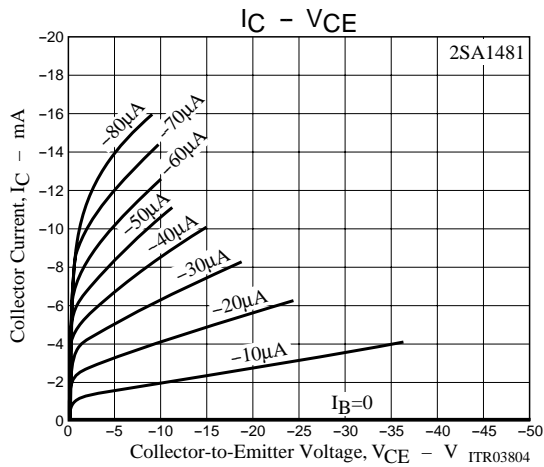
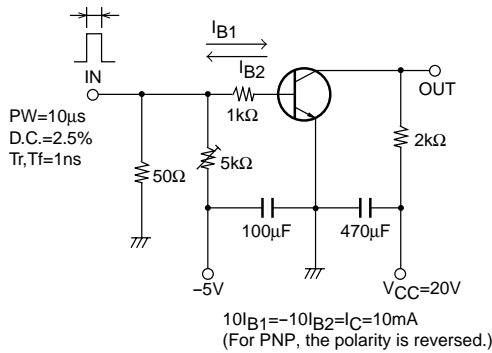
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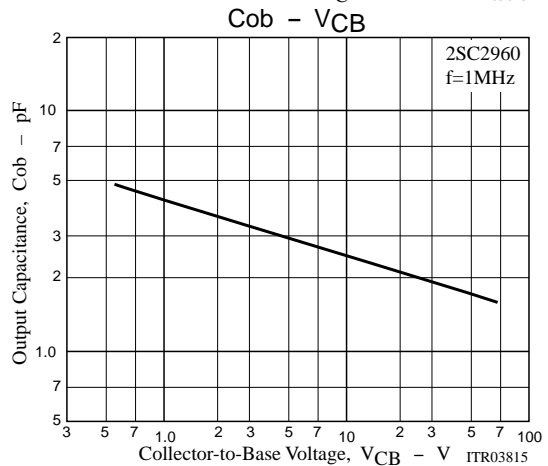
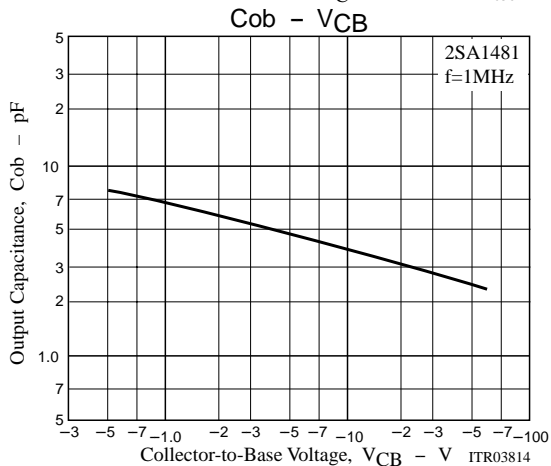
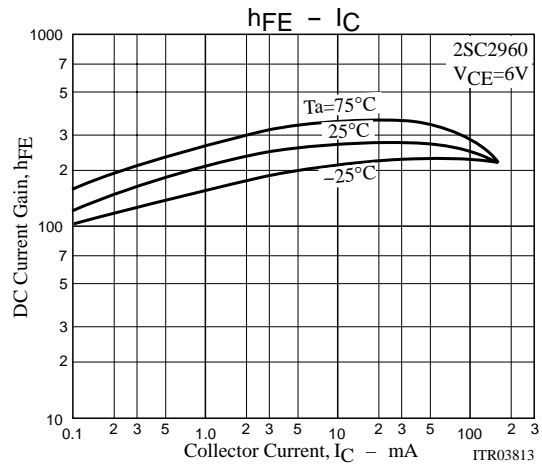
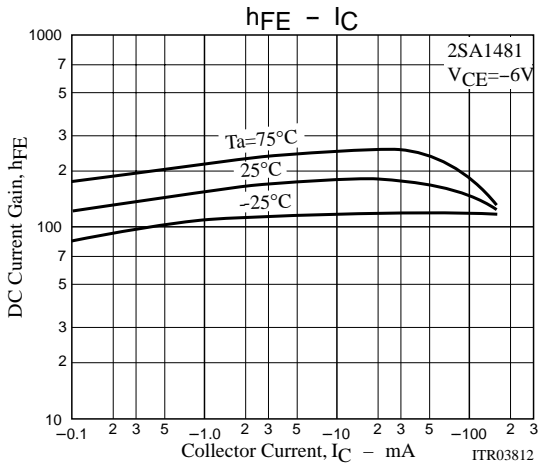
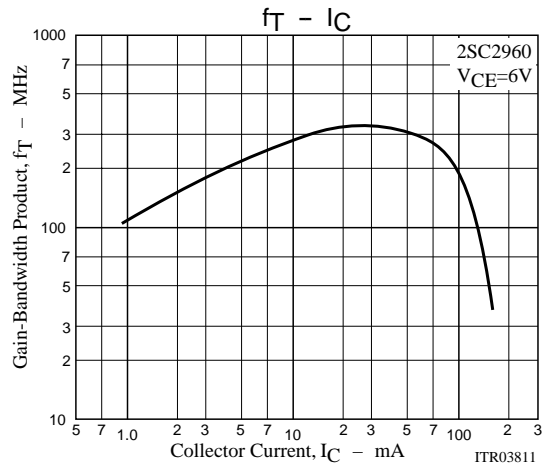
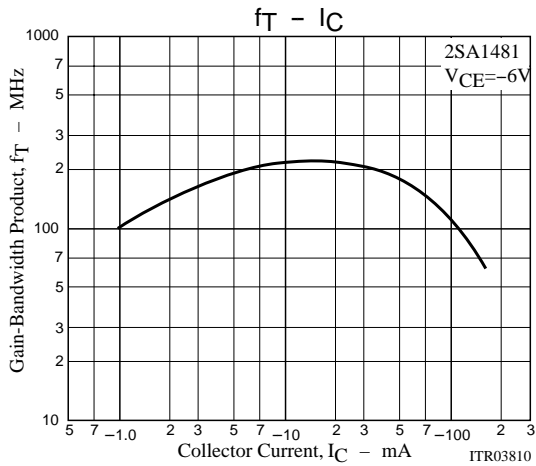
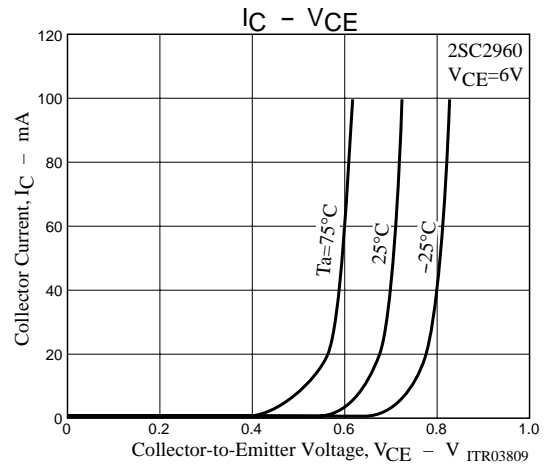
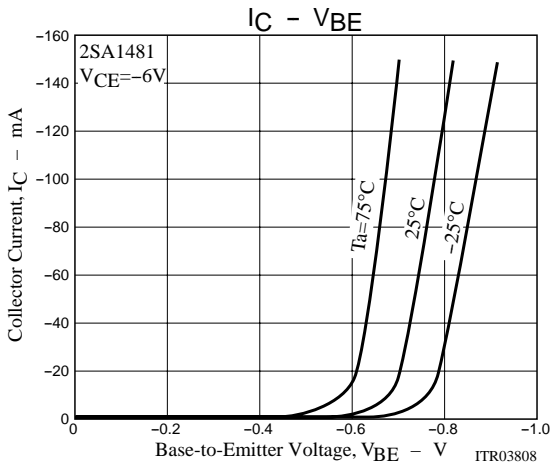
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)10mA, I_B=(-)1mA$		(-)0.1	(-)0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)10mA, I_B=(-)1mA$		(-)0.75	(-)1.1	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)5			V
Delay Time	t_d	See specified Test Circuit		40	60	ns
Rise Time	t_r	See specified Test Circuit		80	130	ns
				(120)	(230)	ns
Storage Time	t_{stg}	See specified Test Circuit		230	450	ns
				(190)	(700)	ns
Fall Time	t_f	See specified Test Circuit		160	250	ns
				(240)	(390)	ns

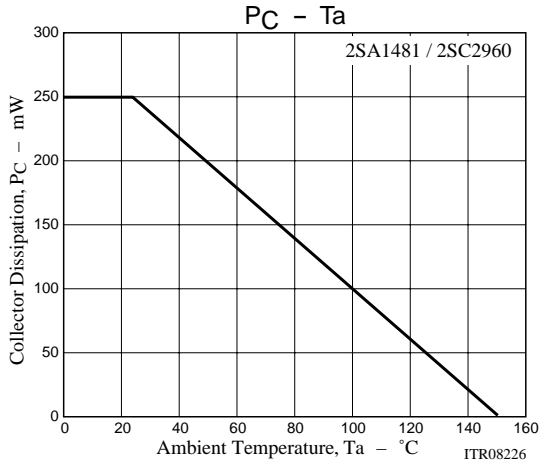
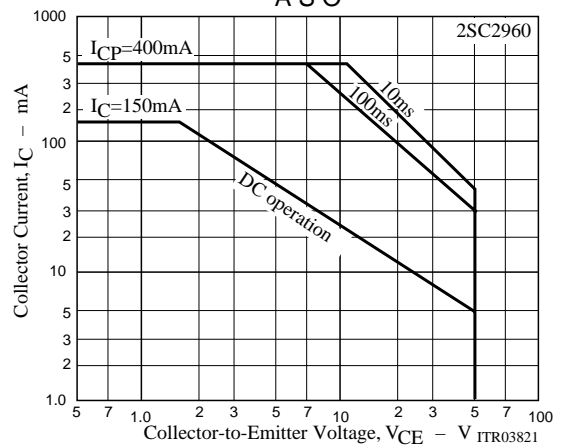
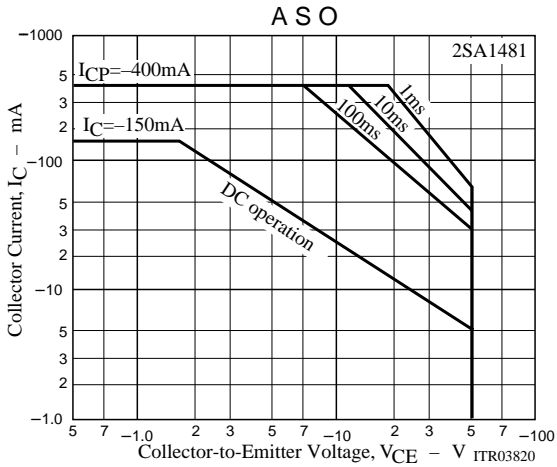
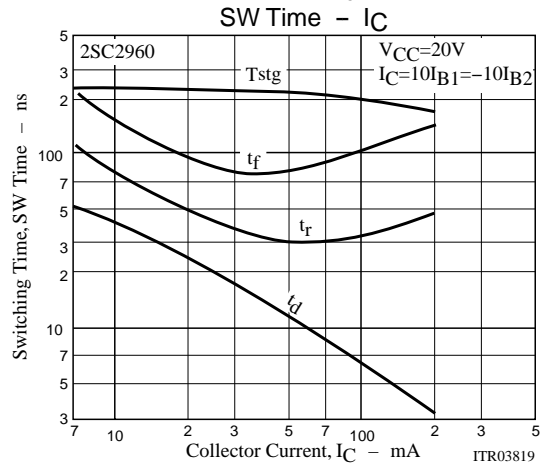
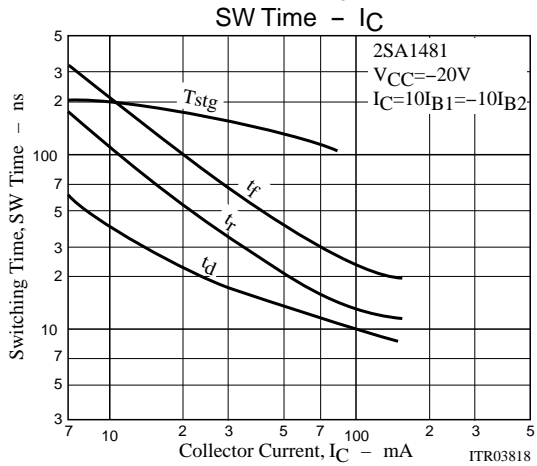
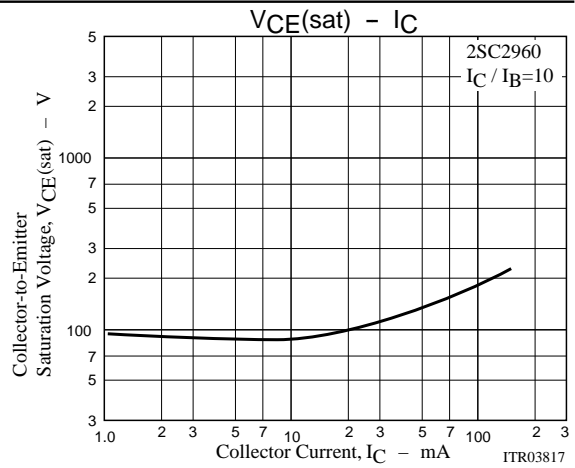
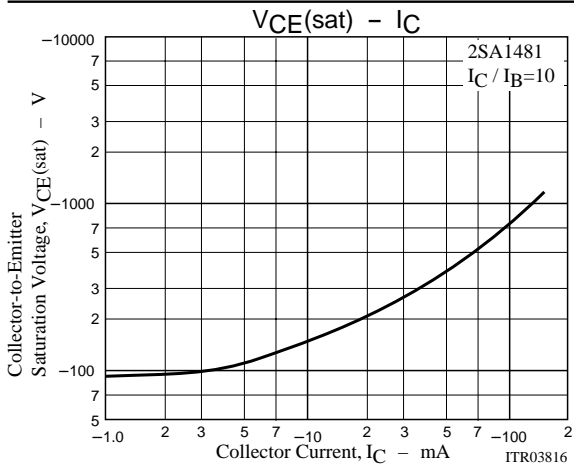
Switching Time Test Circuit



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