



2SA1709/2SC4489

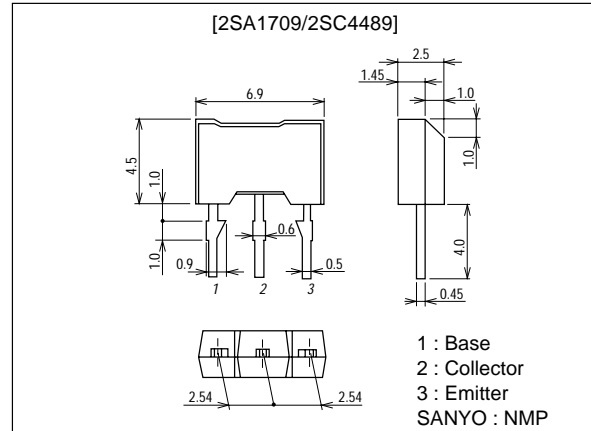
High-Voltage Switching Applications

Features

- Adoption of FBET, MBIT processes.
- High breakdown voltage, large current capacity.
- Fast switching speed.

Package Dimensions

unit:mm
2064A



() 2SA1709

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-120)	V
Collector-to-Emitter Voltage	V_{CEO}		(-100)	V
Emitter-to-Base Voltage	V_{EBO}		(-6)	V
Collector Current	I_C		(-2)	A
Collector Current (Pulse)	I_{CP}		(-3)	A
Collector Dissipation	P_C		1	W
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}	$V_{CB} = (-)100\text{V}, I_E = 0$			(-100)	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			(-100)	nA
DC Current Gain	h_{FE}	$V_{CE} = (-)5\text{V}, I_C = (-)100\text{mA}$	100*		400*	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10\text{V}, I_C = (-)100\text{mA}$		120		MHz

* : The 2SA1709/2SC4489 are classified by 100mA h_{FE} as follows :

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Rank	R	S	T
h_{FE}	100 to 200	140 to 280	200 to 400

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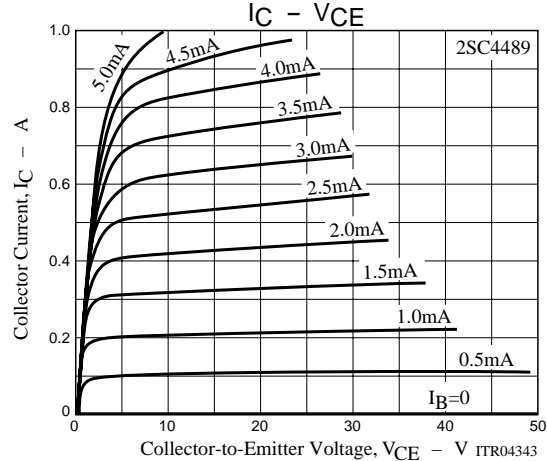
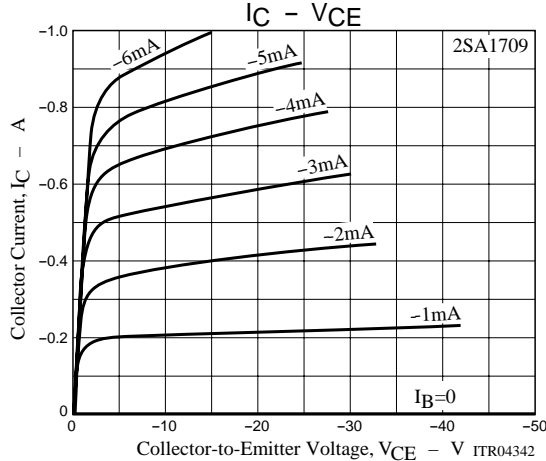
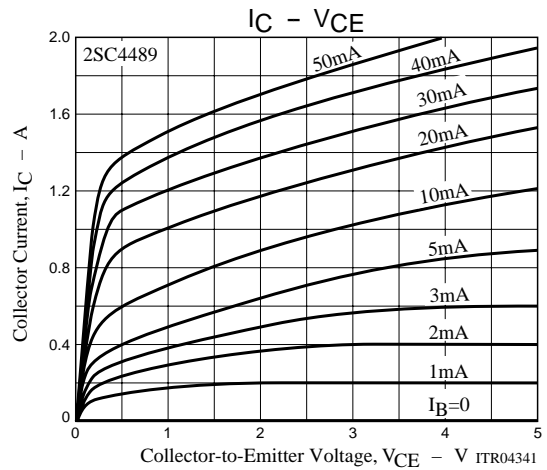
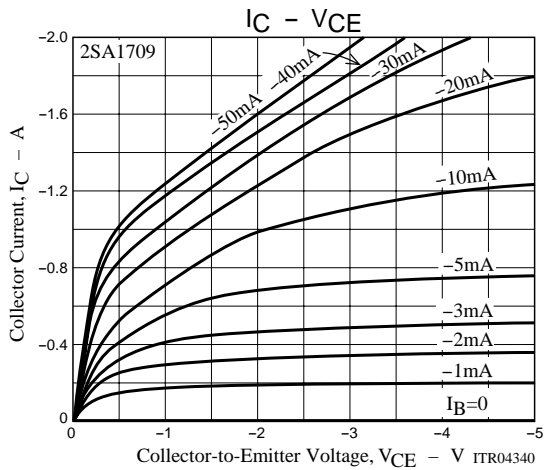
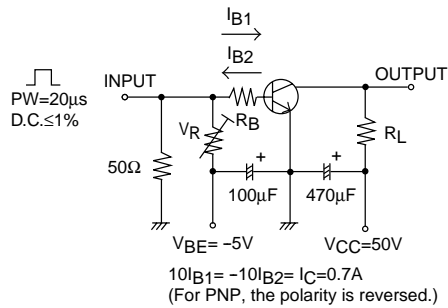
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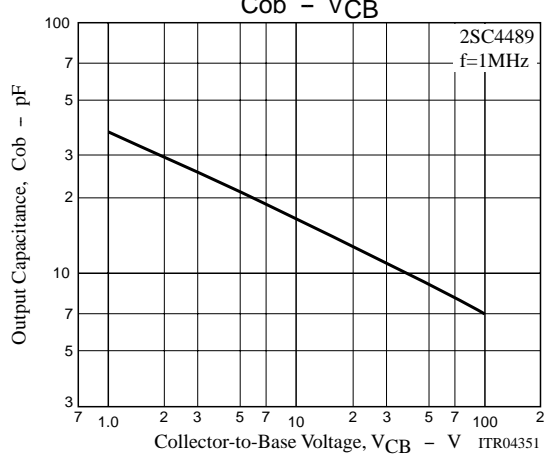
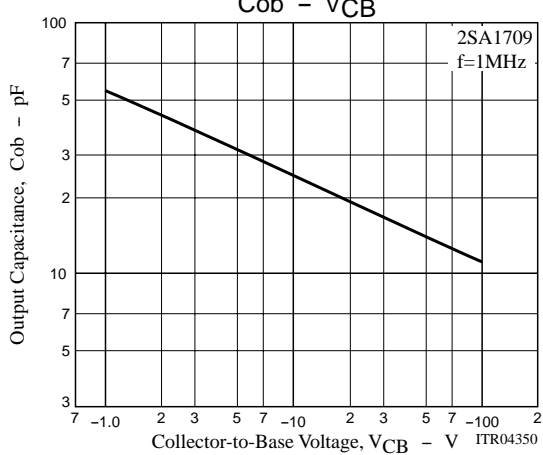
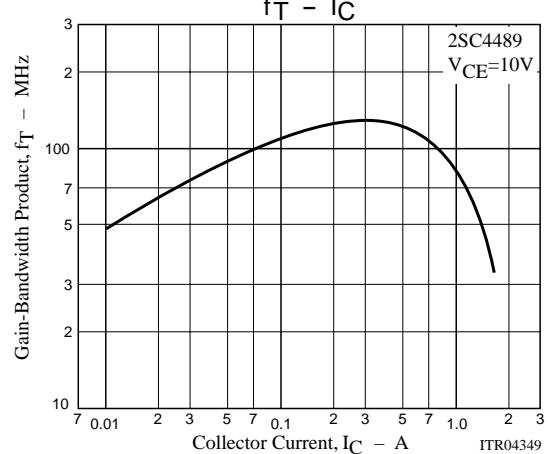
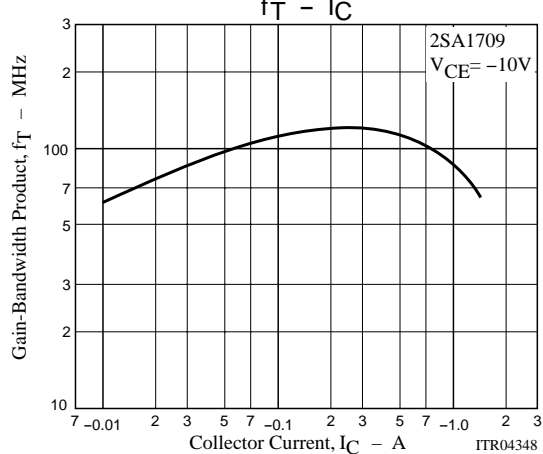
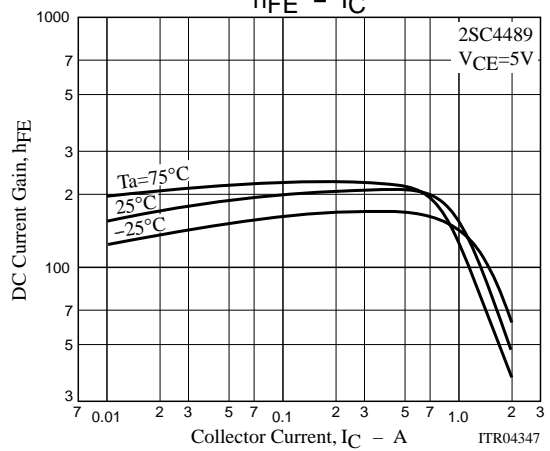
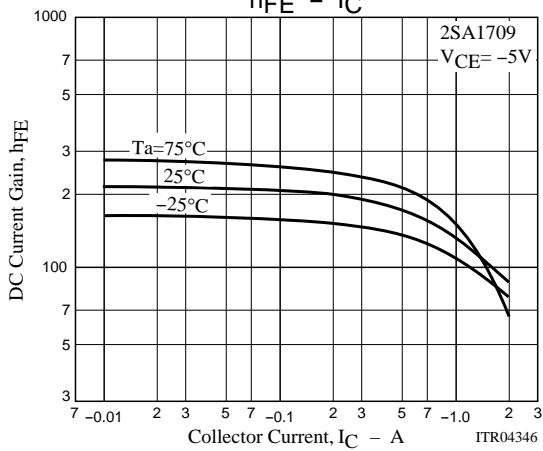
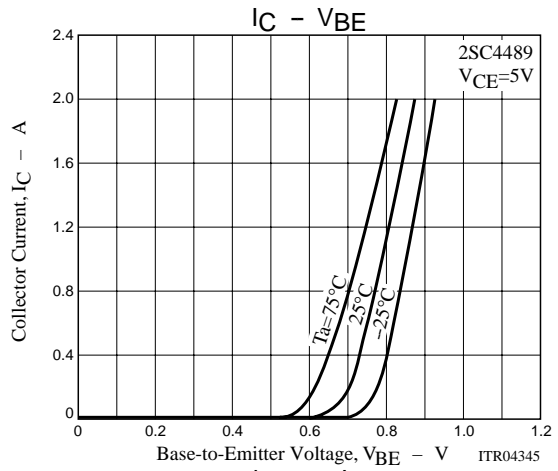
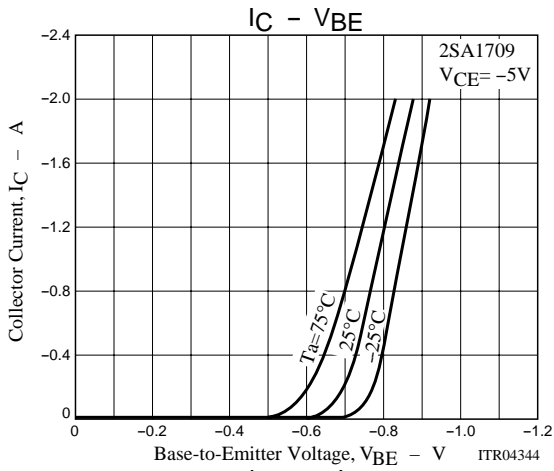
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)1A, I_B=(-)100mA$		(-0.22)	(-0.6)	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1A, I_B=(-)100mA$		(-0.85)	(-1.2)	V
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(25)16		pF
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-120)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-100)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)CEO}$	$I_E=(-)10\mu A, I_C=0$	(-6)			V
Turn-ON Time	t_{on}	See specified Test Circuit		80		ns
Storage Time	t_{stg}	See specified Test Circuit		(750)		ns
				1000		ns
Fall Time	t_f	See specified Test Circuit		(40)50		ns

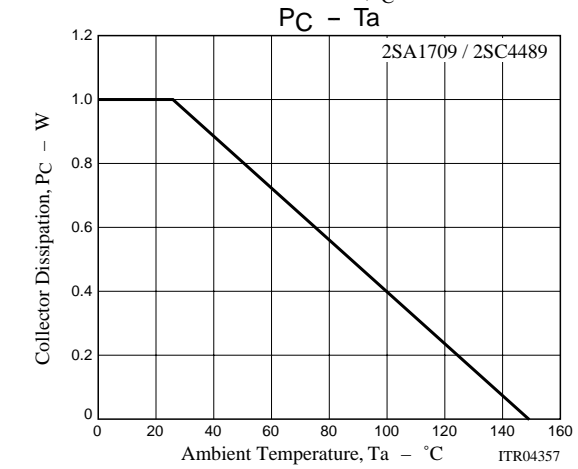
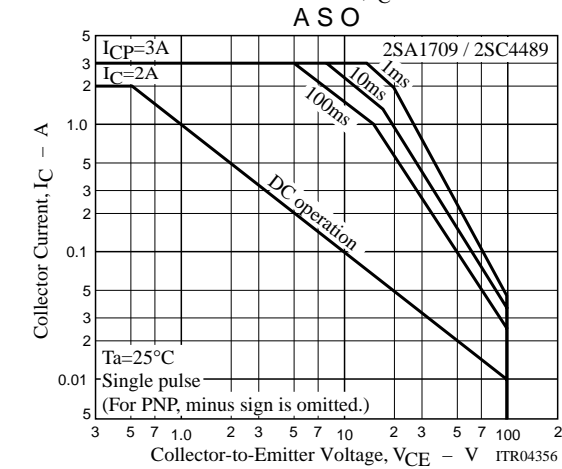
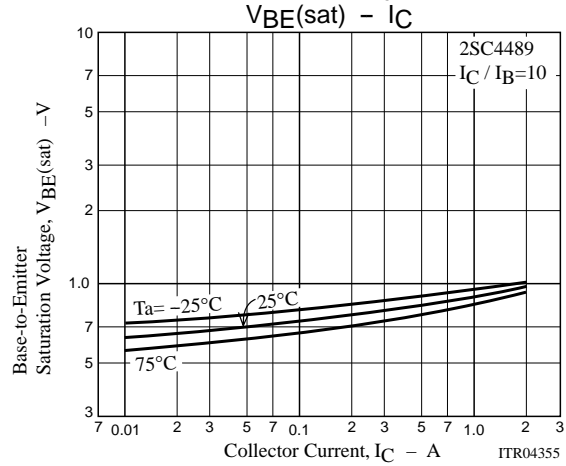
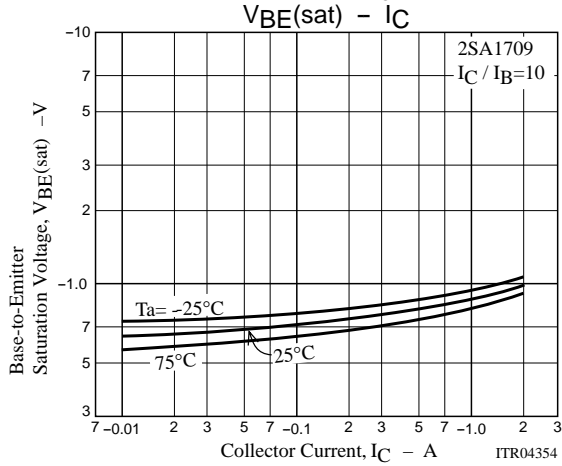
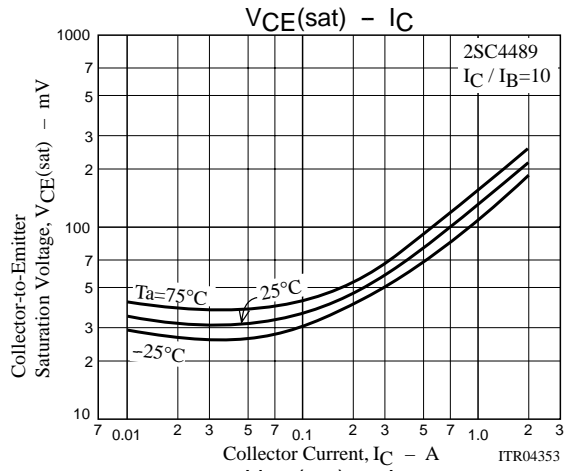
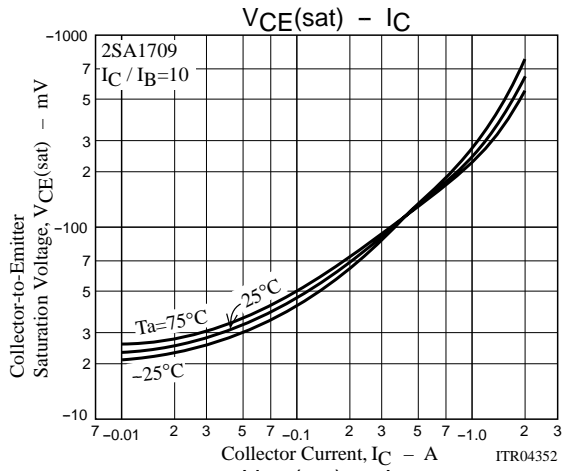
Switching Time Test Circuit



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