



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SA1708 / 2SC4488 — PNP / NPN Epitaxial Planar Silicon Transistors

High-Voltage Switching Applications

Features

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

Specifications () : 2SA1708

Absolute Maximum Ratings at Ta=25°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		(-)1	A
Collector Current (Pulse)	I _{CP}		(-)2	A
Collector Dissipation	P _C		1	W
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} =(-)100V, I _E =0A			(-)100	nA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)4V, I _C =0A			(-)100	nA
DC Current Gain	h _{FE}	V _{CE} =(-)5V, I _C =(-)100mA	100*		400*	
Gain-Bandwidth Product	f _T	V _{CE} =(-)10V, I _C =(-)100mA		120		MHz
Output Capacitance	C _{ob}	V _{CB} =(-)10V, f=1MHz		(13)8.5		pF

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* : The 2SA1708 / 2SC4488 are classified by 100mA h_{FE} as follows:

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

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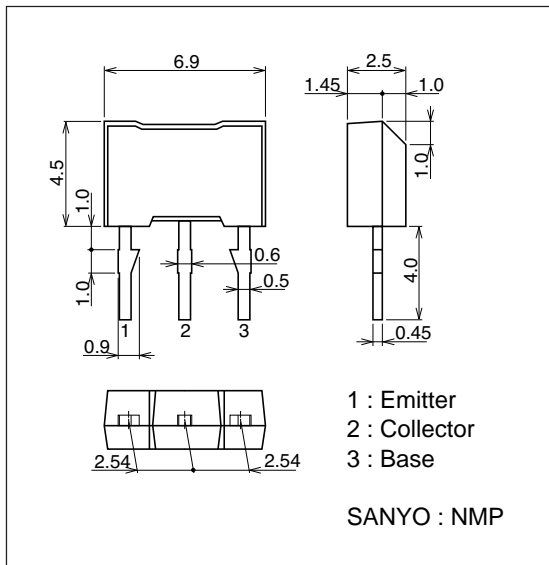
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)400mA, I_B=(-)40mA$		(-0.2)0.1	(-0.6)0.4	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)400mA, I_B=(-)40mA$		(-0.85)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-)120			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)100			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-)6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		(80)80		ns
Storage Time	t_{stg}	See specified Test Circuit.		(700)850		ns
Fall Time	t_f	See specified Test Circuit.		(40)50		ns

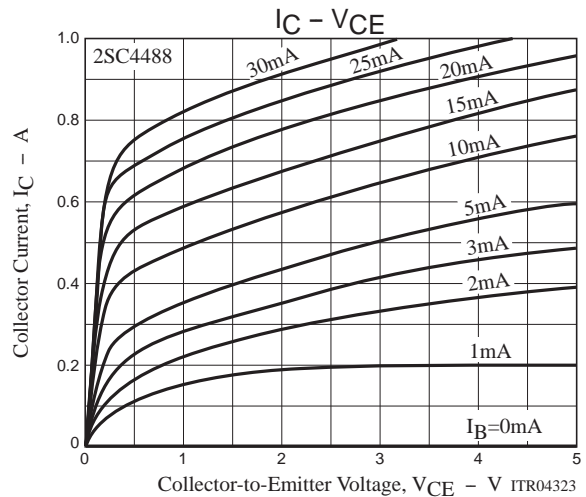
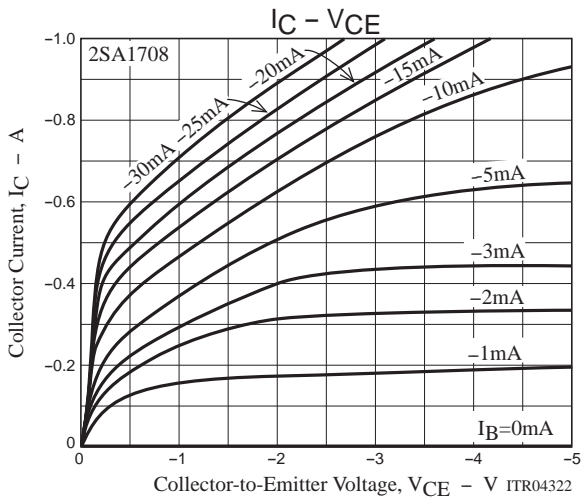
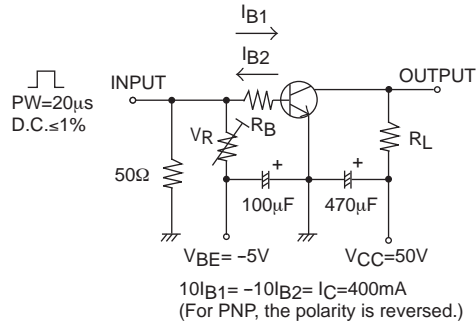
Package Dimensions

unit : mm (typ)

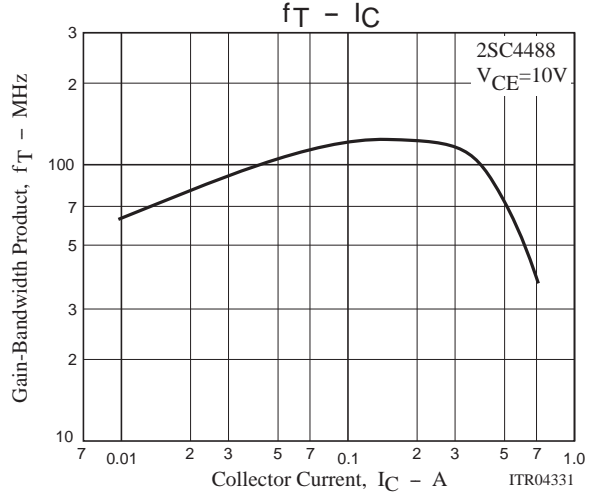
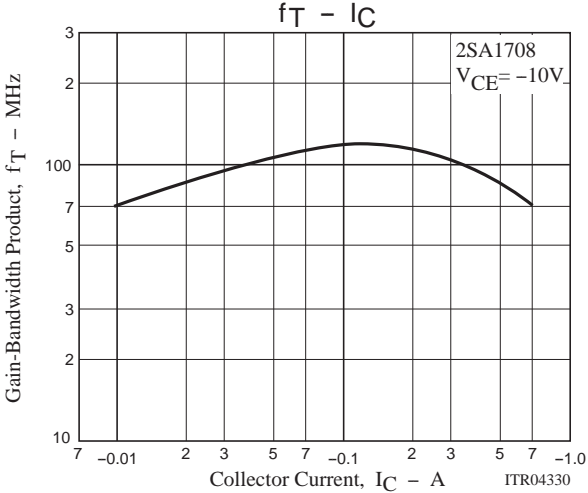
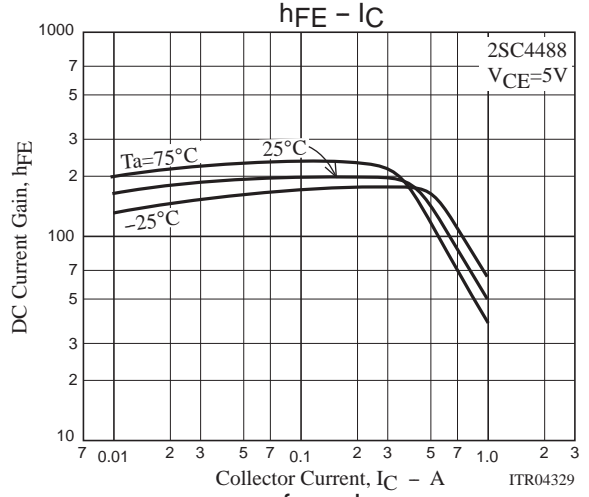
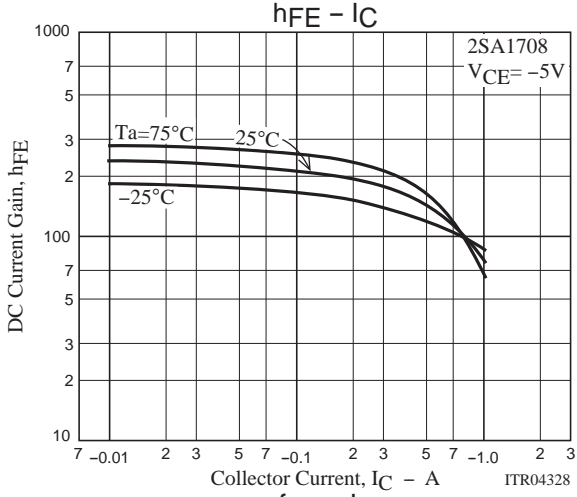
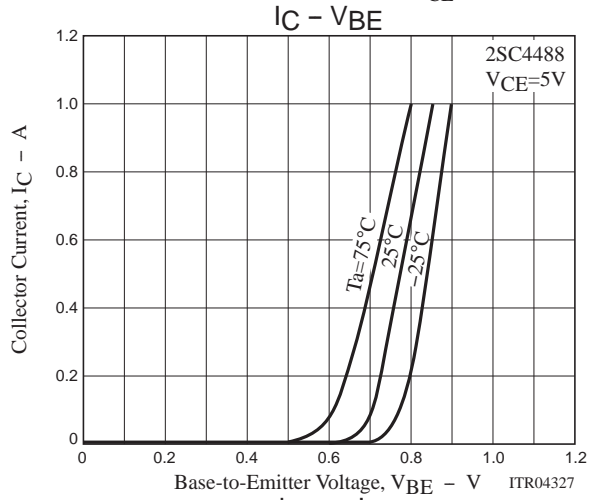
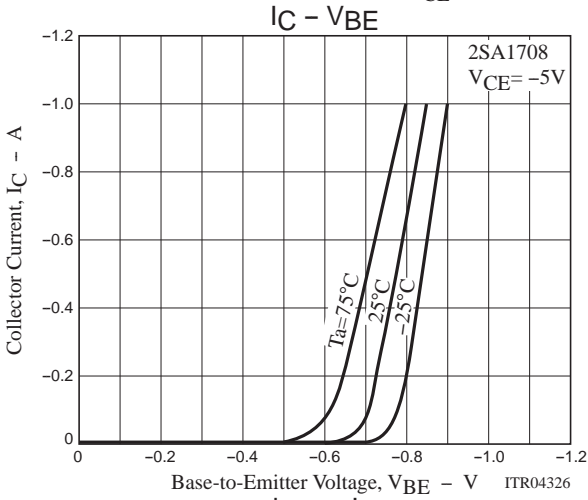
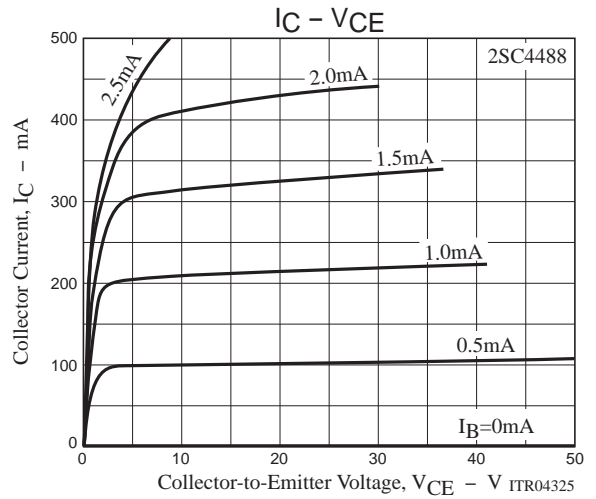
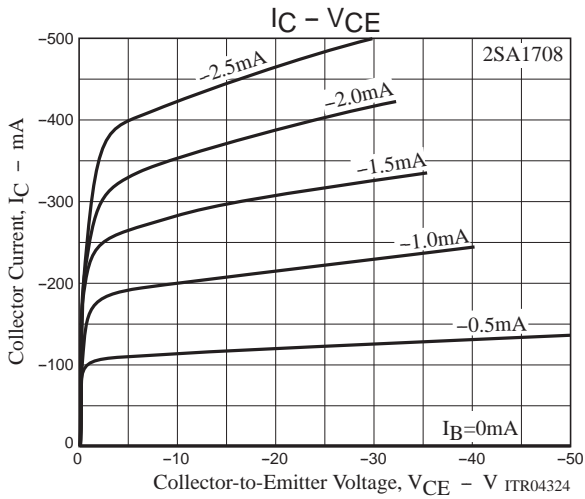
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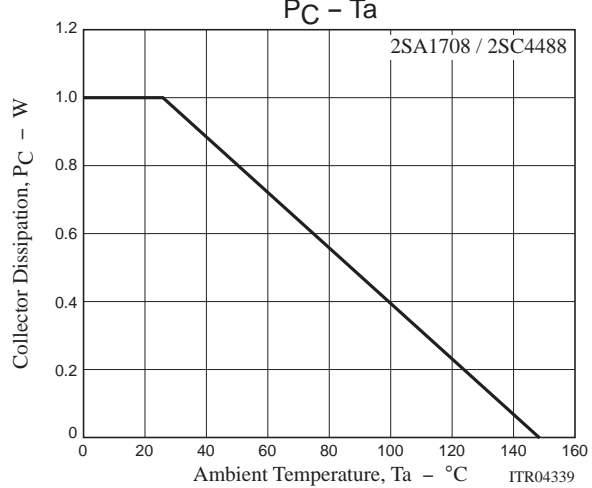
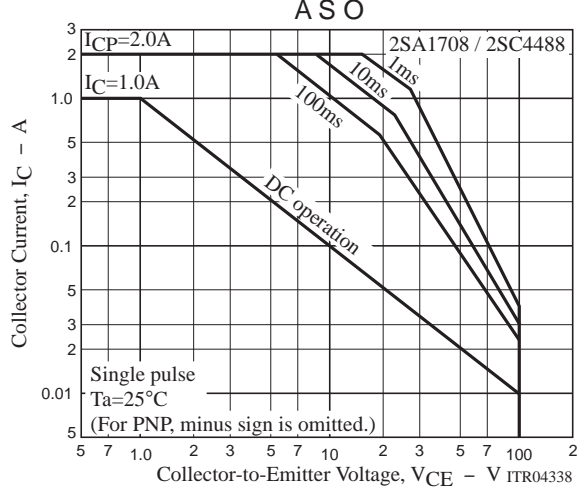
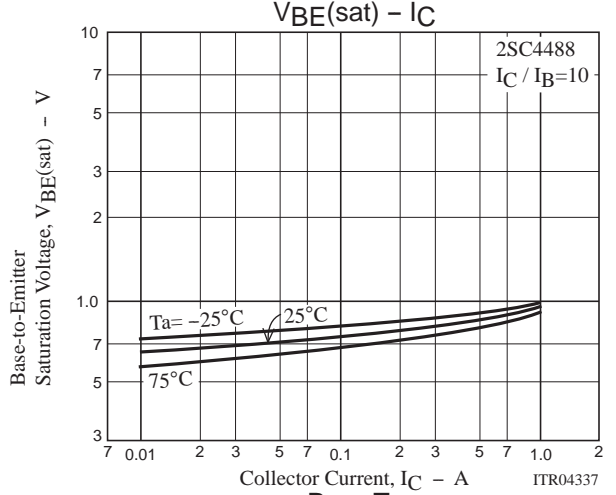
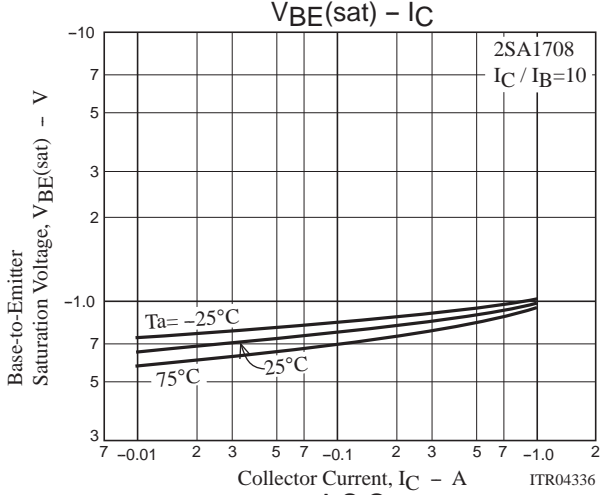
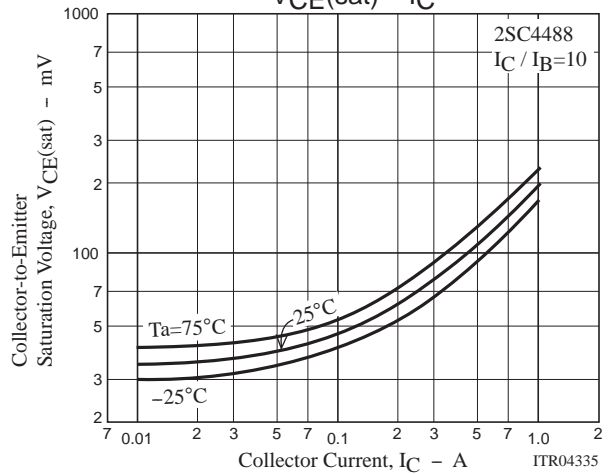
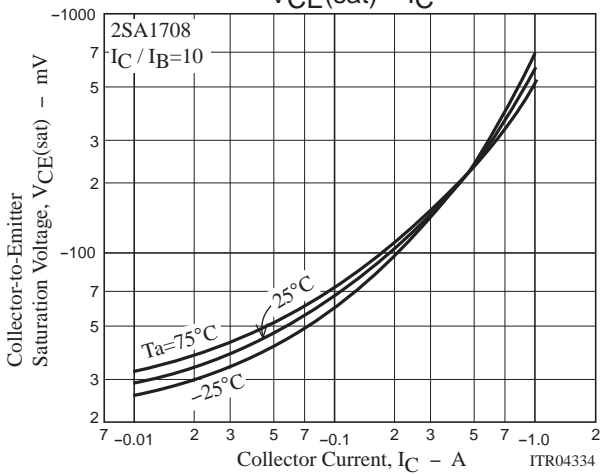
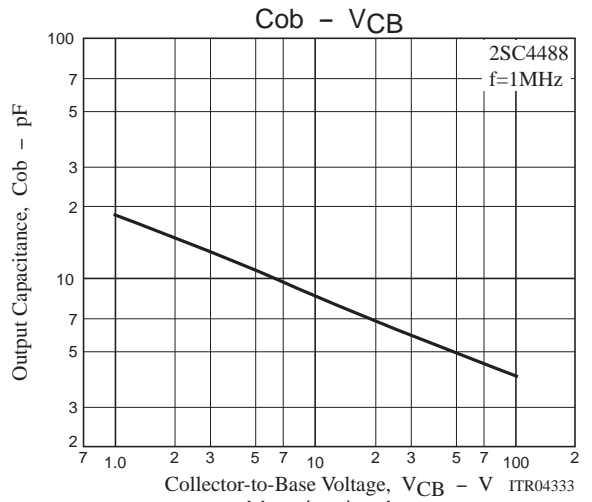
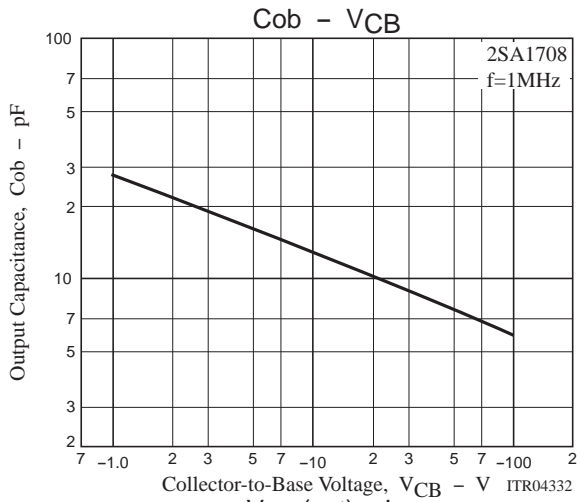
Switching Time Test Circuit



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