Ordering number : EN2217B

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DATA SHEET

2SA1450 / 2SC3708

PNP / NPN Epitaxial Planar Silicon Transistors
Low-Frequency Driver Applications

Features

- Adoption of FBET process.
- AF amp, AF power amp.
- High breakdown voltage : V_{CEO} > 80V.

Specifications ( ) : 2SA1450

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)100	V
Collector-to-Emitter Voltage	V_{CEO}		(–)80	V
Emitter-to-Base Voltage	V_{EBO}		(–)5	V
Collector Current	I_C		(–)500	mA
Collector Current (Pulse)	I_{CP}		(–)800	mA
Base Current	I_B		(–)100	mA
Collector Dissipation	P_C		600	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		–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}=(–)60V, I_E=0A			(–)0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=(–)4V, I_C=0A			(–)0.1	μA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)5V, I_C=(–)50mA	100*		400*	
	$h_{FE}2$	V_{CE}=(–)5V, I_C=(–)400mA	60			

Continued on next page.

*: The 2SA1450 / 2SC3708 are classified by 50mA h_{FE} as follws:

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

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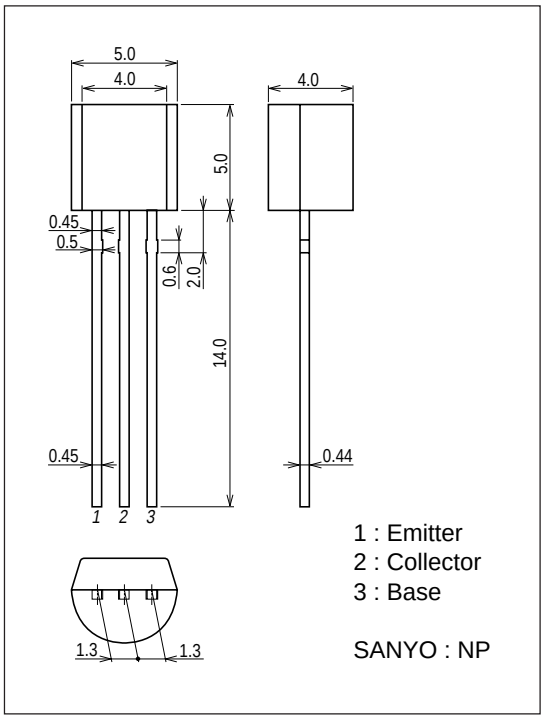
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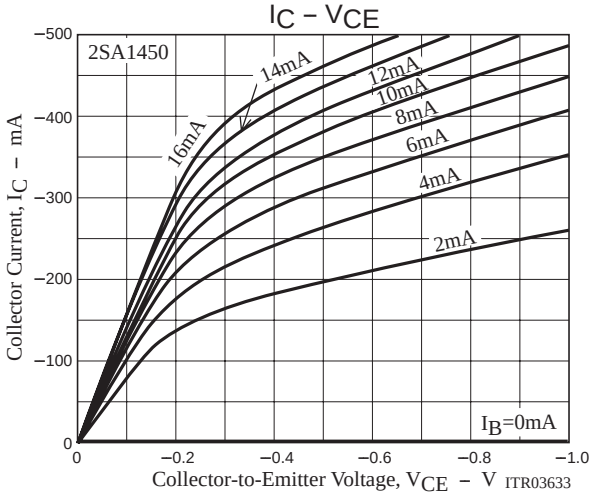
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	V_{CE}=(-)10V, I_C=(-)10mA		120		MHz
Output Capacitance	Cob	V_{CB}=(-)10V, f=1MHz		(7)5		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=(-)400mA, I_B=(-)40mA		(-0.2)0.16	(-)0.5	V
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=(-)400mA, I_B=(-)40mA		(-)0.9	(-)1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(-)10μA, I_E=0A	(-)100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(-)1mA, R_{BE}=∞	(-)80			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=(-)10μA, I_C=0A	(-)5			V

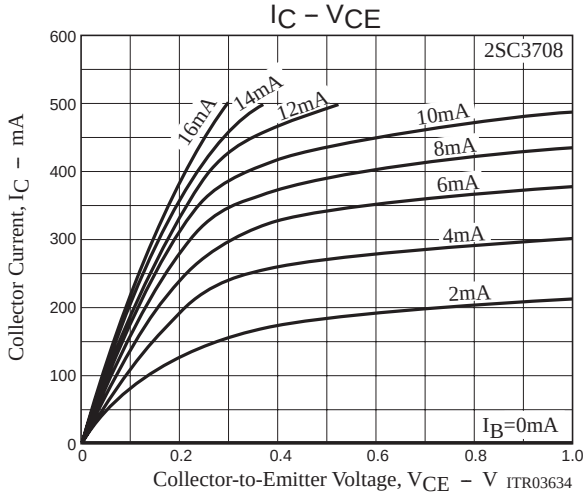
Package Dimensions

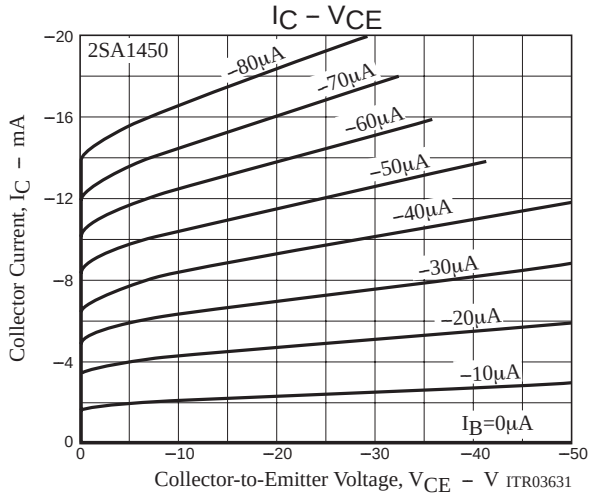
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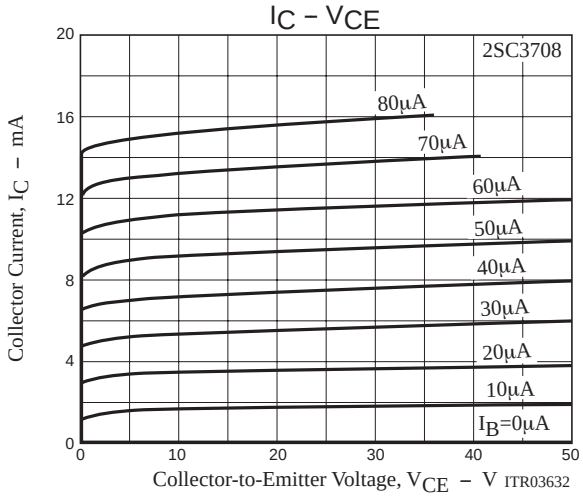
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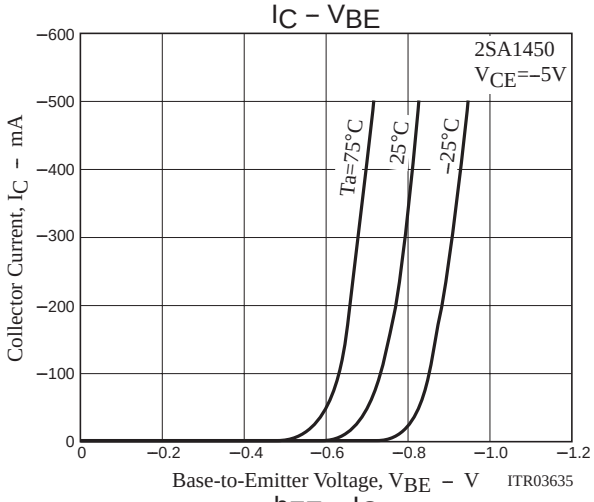


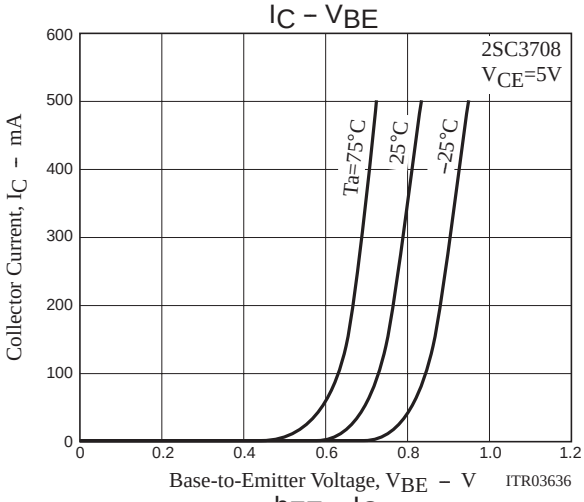


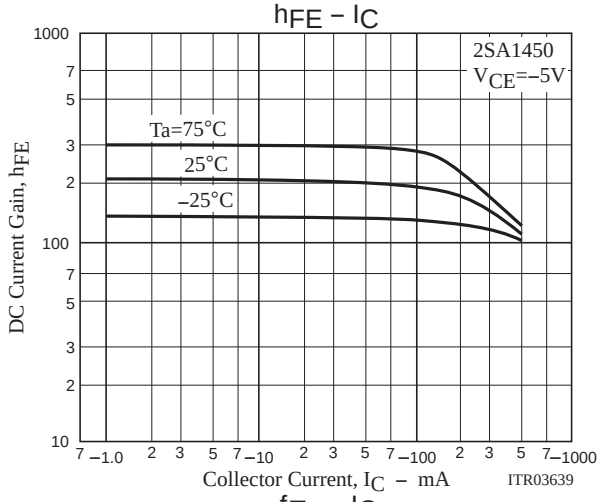


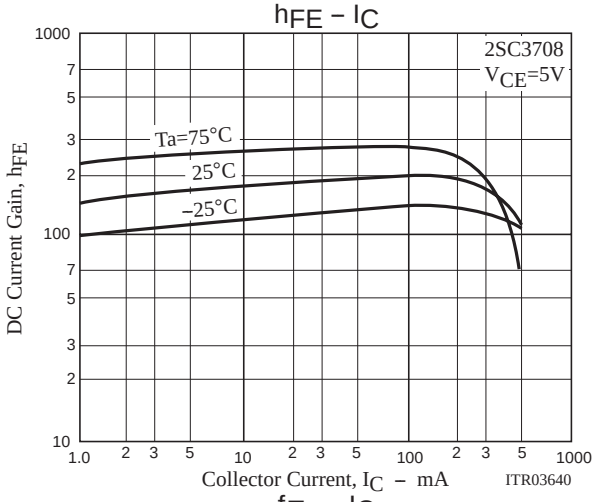

IC – VCE
2SA1450
–80μA
–70μA
–60μA
–50μA
–40μA
–30μA
–20μA
–10μA
IB=0μA
Collector Current, IC – mA
Collector-to-Emitter Voltage, VCE – V
ITR03631

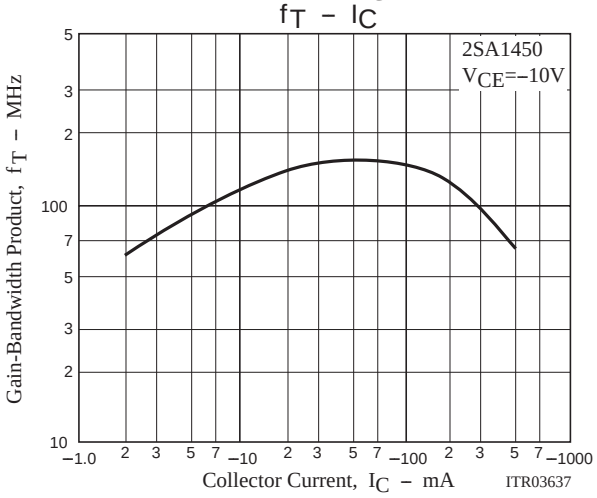

IC – VCE
2SC3708
80μA
70μA
60μA
50μA
40μA
30μA
20μA
10μA
IB=0μA
Collector Current, IC – mA
Collector-to-Emitter Voltage, VCE – V
ITR03632

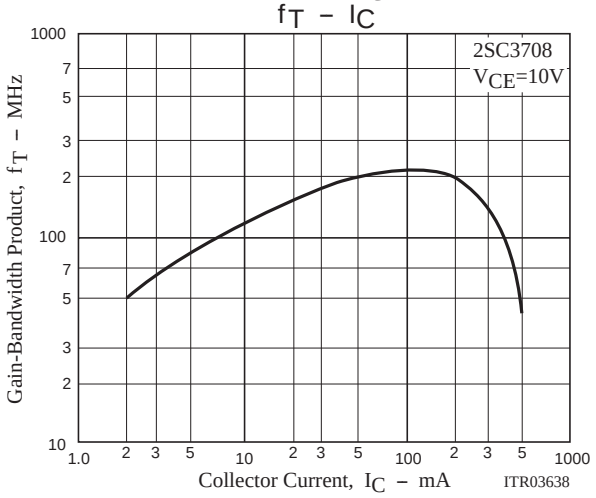

IC – VBE
2SA1450
VCE=–5V
Ta=75°C
25°C
–25°C
Collector Current, IC – mA
Base-to-Emitter Voltage, VBE – V
ITR03635


IC – VBE
2SC3708
VCE=5V
Ta=75°C
25°C
–25°C
Collector Current, IC – mA
Base-to-Emitter Voltage, VBE – V
ITR03636

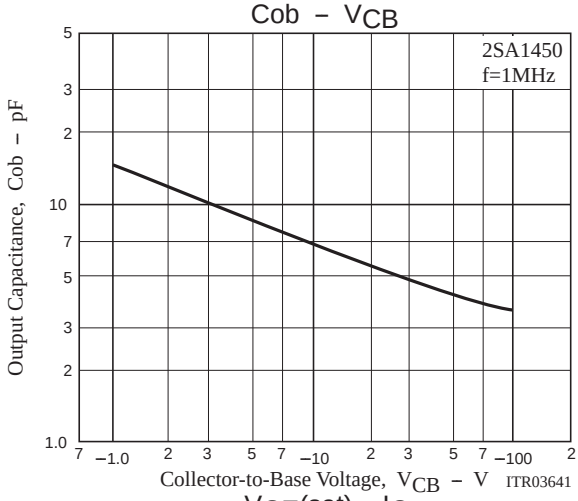

hFE – IC
2SA1450
VCE=–5V
Ta=75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – mA
ITR03639


hFE – IC
2SC3708
VCE=5V
Ta=75°C
25°C
–25°C
DC Current Gain, hFE
Collector Current, IC – mA
ITR03640

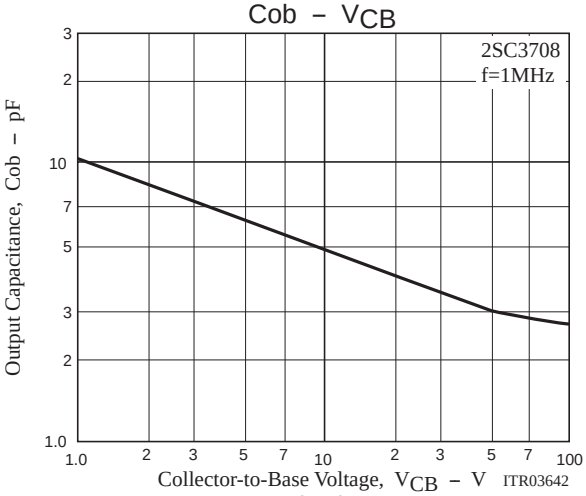

fT – IC
2SA1450
VCE=–10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR03637


fT – IC
2SC3708
VCE=10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
ITR03638

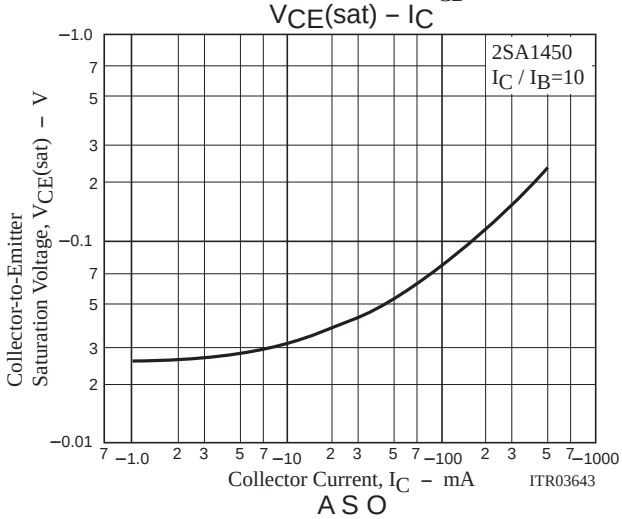
Cob – V_{CB}



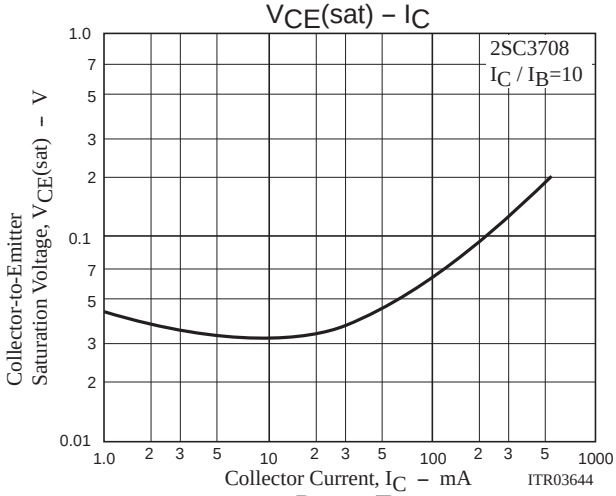
Cob – V_{CB}



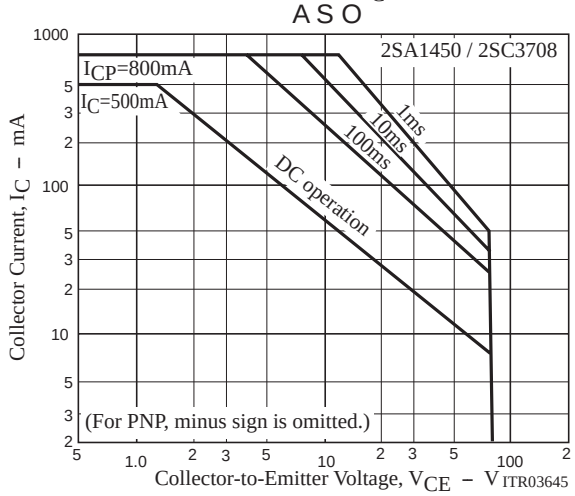
$V_{CE}(sat)$ – I_C



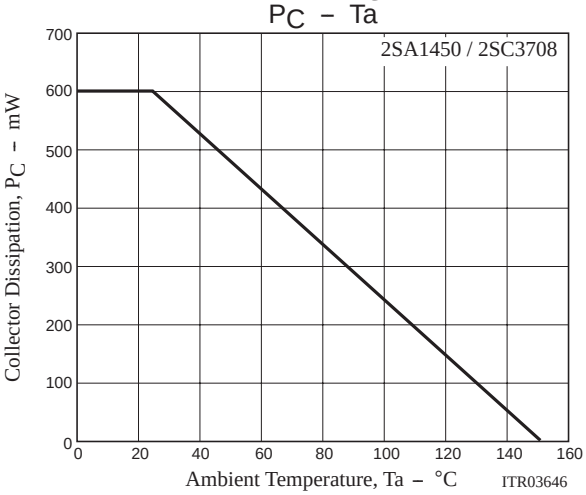
$V_{CE}(sat)$ – I_C



A S O



P_C – Ta



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