

Silicon Epitaxial Base Mesa Transistor

2SB713 (PNP)
2SD751 (NPN)

TOP-3 Package (See Page 36 For Dimensions)

2SB713 (PNP)

Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Collector-Base Voltage	-V _{CB0}	200	V
Collector-Emitter Voltage	-V _{CEO}	140	V
Emitter-Base Voltage	-V _{EB0}	5	V
Peak Collector Current	-I _{CM}	15	A
Collector Current	-I _C	9	A
Collector Power Dissipation	P _C *	100	W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55~+150	°C

*T_C=25°C

High Power Audio Frequency Amplifier
Complementary Pair with 2SD751

Feature:

• Large collector power dissipation: 100W(T_C=25°C)

**hFE Classification

hFE	100~200	60~120	40~80
Class	P	Q	R

Electrical Characteristics (Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector Cutoff Current	-I _{CB0}	-V _{CB} =140V, I _E =0			50	μA
Emitter Cutoff Current	-I _{EB0}	-V _{EB} =3V, I _C =0			50	μA
DC Current Gain	hFE1	-V _{CE} =5V, -I _C =0.02A	20			—
	hFE2**	-V _{CE} =5V, -I _C =1.0A	40		200	—
	hFE3	-V _{CE} =5V, -I _C =5.0A	15			—
Base-Emitter Voltage	-V _{BE}	-V _{CE} =5V, -I _C =7.0A			1.8	V
Collector-Emitter Saturation Voltage	-V _{CE(sat)}	-I _C =5A, -I _B =0.7A			2.0	V
Gain Bandwidth Product	f _T	-V _{CE} =5V, -I _C =0.5A		20		MHz

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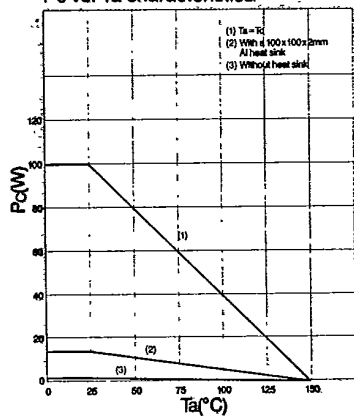
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T-33-2/

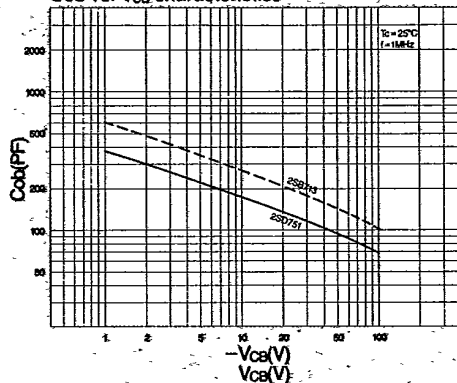
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Typical Characteristics

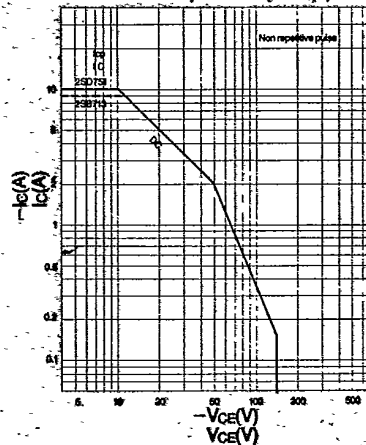
Pc vs. Ta characteristics



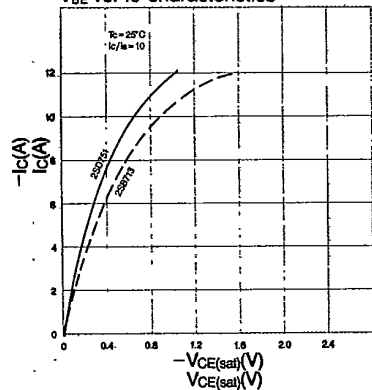
Cob vs. VCB characteristics



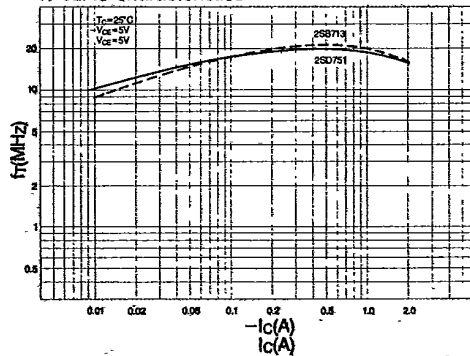
Area of Safe Operation (ASO) ($T_c = 25^\circ\text{C}$)



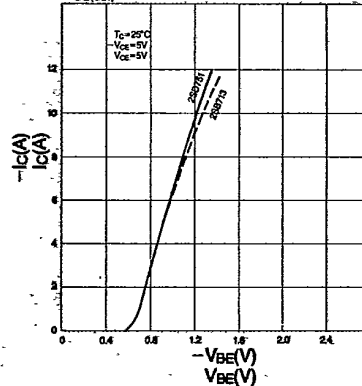
VBE vs. Ic characteristics



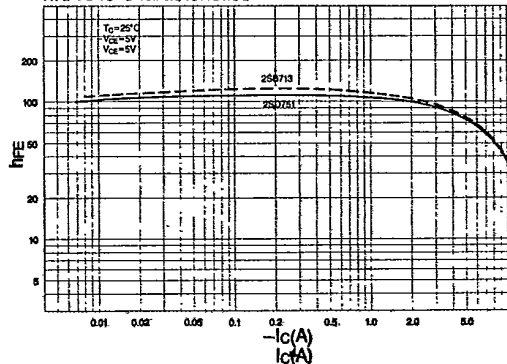
fT vs. Ic characteristics



VCE(sat) vs. Ic characteristics



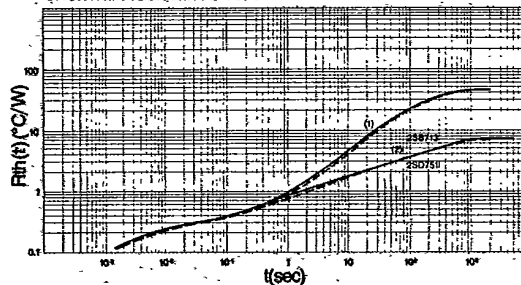
hFE vs Ic characteristics



Transient Thermal Resistance

Notes: Rth was measured at $T_c = 25^\circ\text{C}$ and under natural convection.

Thermal Resistance vs. t



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