2SB1691

Silicon PNP Epitaxial Planer
Low Frequency Power Amplifier

HITACHI

ADE-208-1387A (Z)

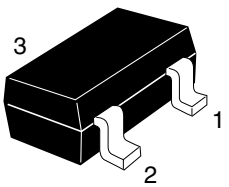
Rev.1
Jun. 2001

Features

- Small size package: MPAK (SC–59A)
- Large Maximum current: I_C = –1 A
- Low collector to emitter saturation voltage: $V_{CE(sat)}$ = –0.3 V max.(at I_C/I_B = –0.5 A/–0.05 A)
- High power dissipation: P_C = 800 mW (when using alumina ceramic board (25 x 60 x 0.7 mm))
- Complementary pair with 2SD2655

Outline

MPAK



1. Emitter
2. Base
3. Collector

Note: Marking is “WL-“.

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Absolute Maximum Ratings

(Ta = 25 °C)

Item	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	–60	V
Collector to emitter voltage	V_{CEO}	–50	V
Emitter to base voltage	V_{EBO}	–6	V
Collector current	I_C	–1	A
Collector peak current	ic(peak)	–2	A
Collector power dissipation	P_C	800*	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

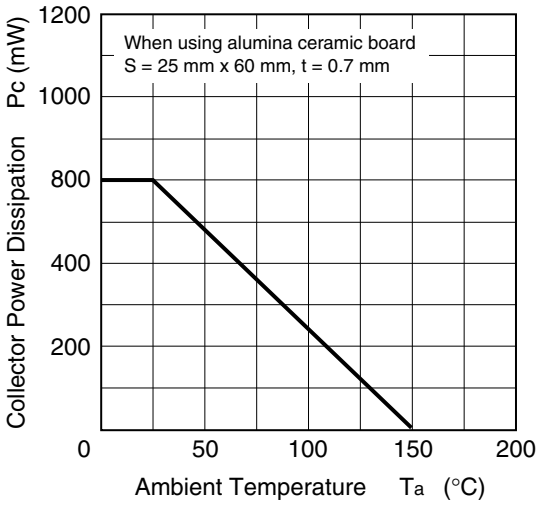
Note: *When using alumina ceramic board (25 x 60 x 0.7 mm)

Electrical Characteristics

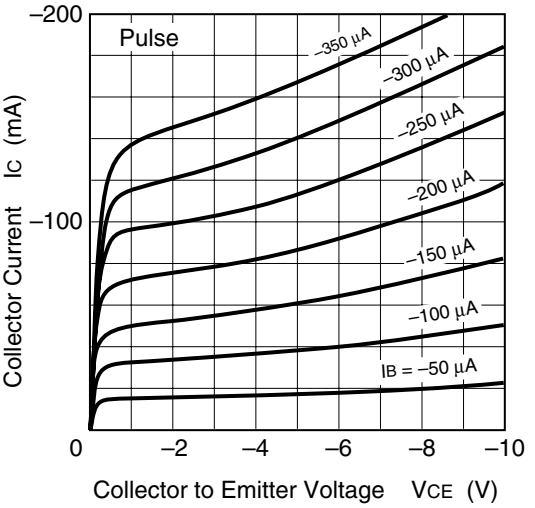
(Ta = 25 °C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Collector to base breakdown voltage	$V_{(BR)CBO}$	–60	—	—	V	I_C = –10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–50	—	—	V	I_C = –1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–6	—	—	V	I_E = –10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	–100	nA	V_{CB} = –50 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	–100	nA	V_{EB} = –5 V, I_C = 0
DC current transfer ratio	h_{FE}	200	—	500	—	V_{CE} = –2 V, I_C = –0.1 A
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	–0.2	–0.3	V	I_C = –0.5 A, I_B = –0.05 A, Pulse test
Base to emitter saturation voltage	$V_{BE(sat)}$	—	–0.95	–1.2	V	I_C = –0.5 A, I_B = –0.05 A, Pulse test
Gain bandwidth product	f_T	—	310	—	MHz	V_{CE} = –2 V, I_C = –0.1 A
Collector output capacitance	Cob	—	9.8	—	pF	V_{CB} = –10 V, I_E = 0, f = 1 MHz

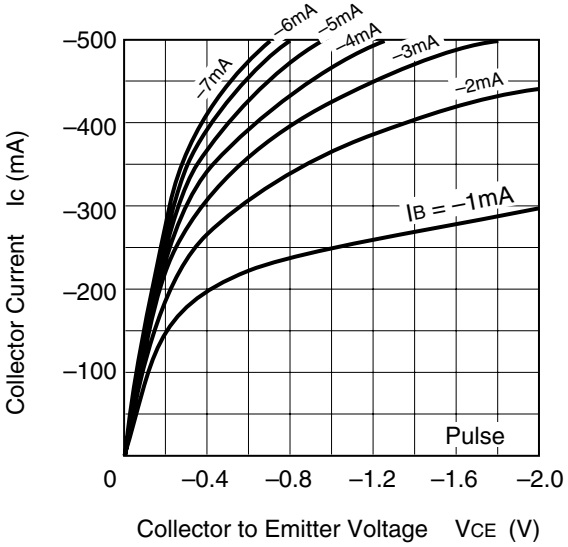
Maximum Collector Dissipation Curve



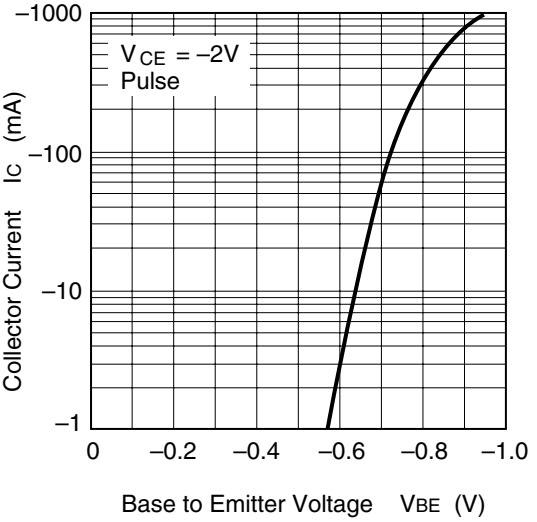
Typical Output Characteristics (1)



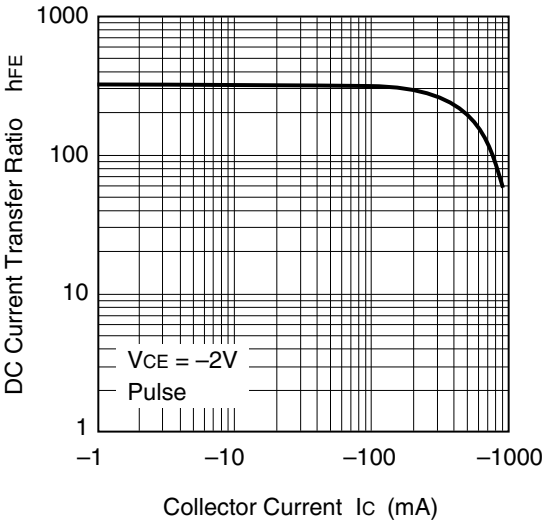
Typical Output Characteristics(2)



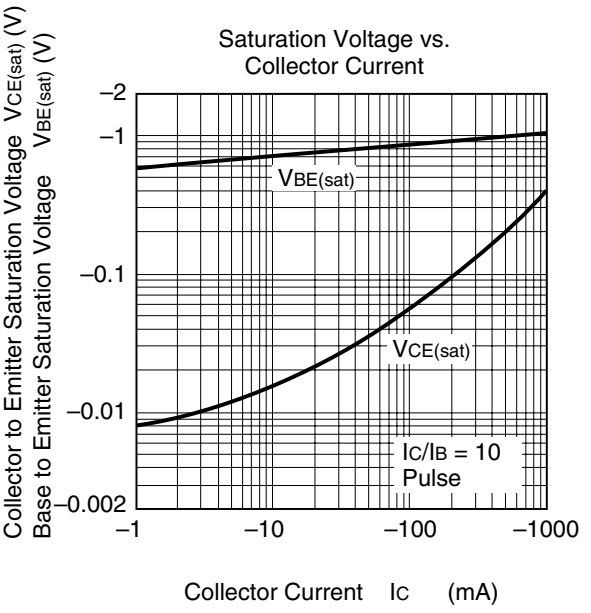
Typical Transfer Characteristics



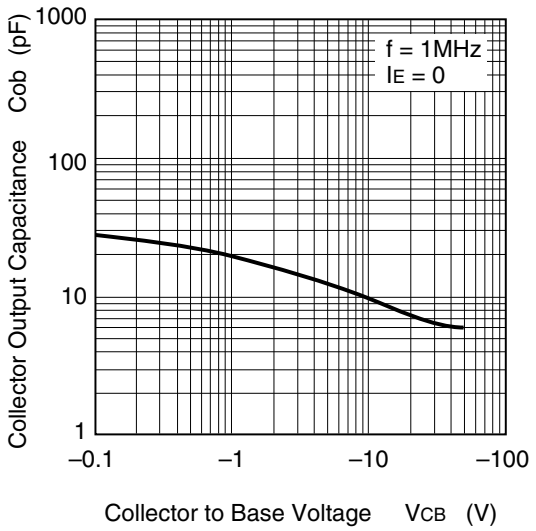
DC Current Transfer Ratio vs. Collector Current



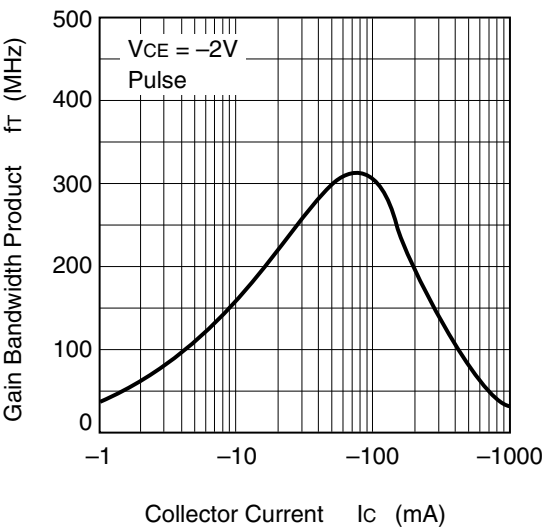
Saturation Voltage vs. Collector Current



Collector Output Capacitance vs. Collector to Base Voltage



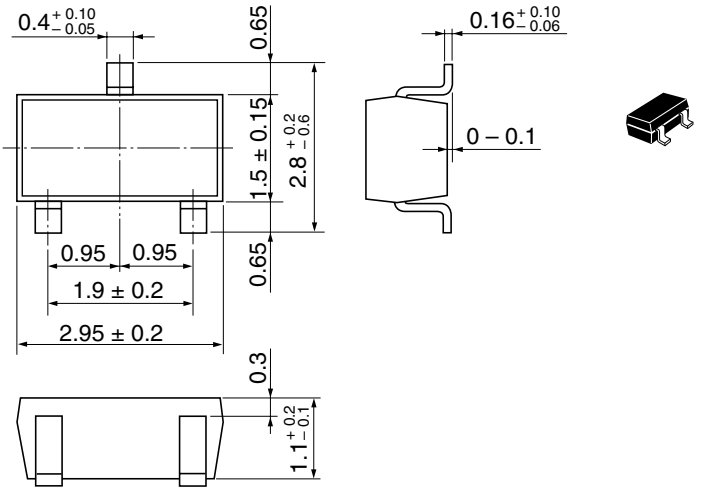
Gain Bandwidth Product vs. Collector Current



Package Dimensions

As of January, 2001

Unit: mm



Hitachi Code	MPAK
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.011 g

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