2SC4308

Silicon NPN Epitaxial Planar

HITACHI

Application

VHF Wide band amplifier

Outline

TO-92 (2)

1. Base
2. Emitter
3. Collector

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	20	V
Emitter to base voltage	V_{EBO}	3	V
Collector current	I_C	300	mA
Collector peak current	$i_{C\ (peak)}$	500	mA
Collector power dissipation	P_C	600	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

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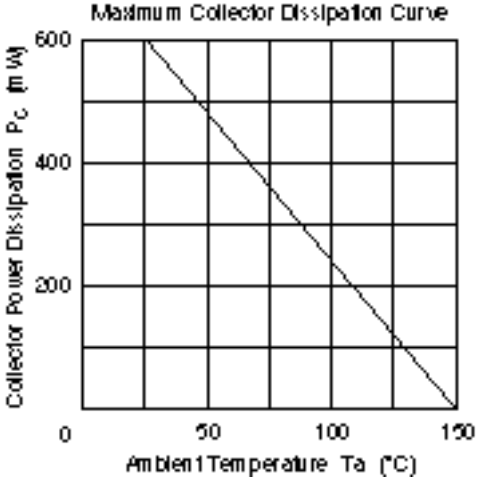
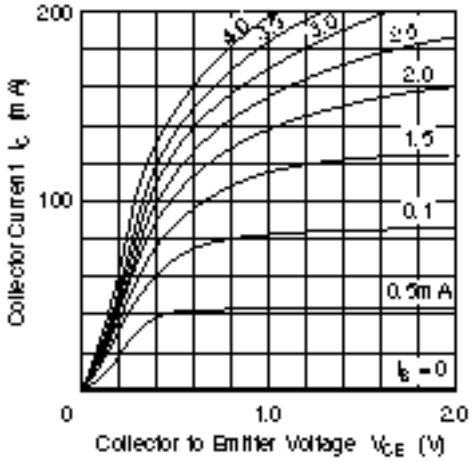
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	30	—	—	V	I_C = 100 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	20	—	—	V	I_C = 1 mA, R_{BE} = ∞
Collector cutoff current	I_{CBO}	—	—	1	µA	V_{CB} = 25 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	10	µA	V_{EB} = 3 V, I_E = 0
DC current transfer ratio	h_{FE}	50	—	200		V_{CE} = 5 V, I_C = 50 mA
Gain bandwidth product	f_T	1.5	2.5	—	GHz	V_{CE} = 5 V, I_C = 50 mA
Collector output capacitance	Cob	—	4.0	—	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz

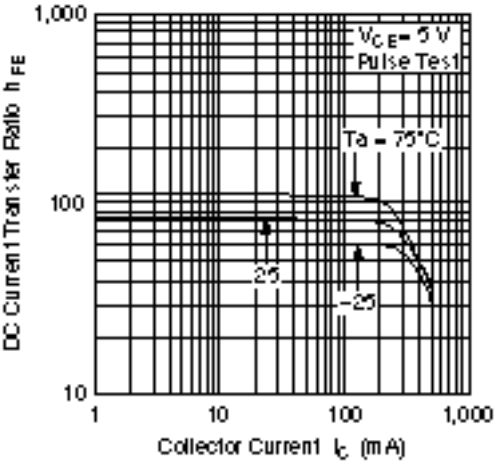
Maximum Collector Dissipation Curve



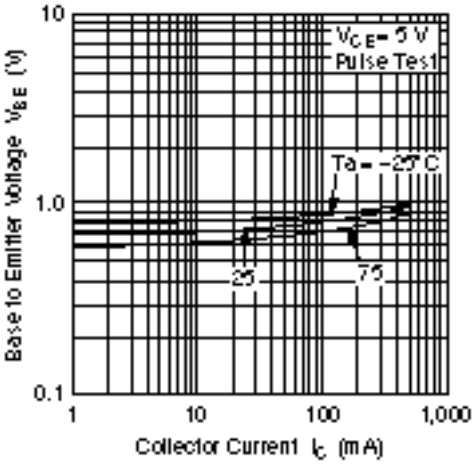
Typical Output Characteristics



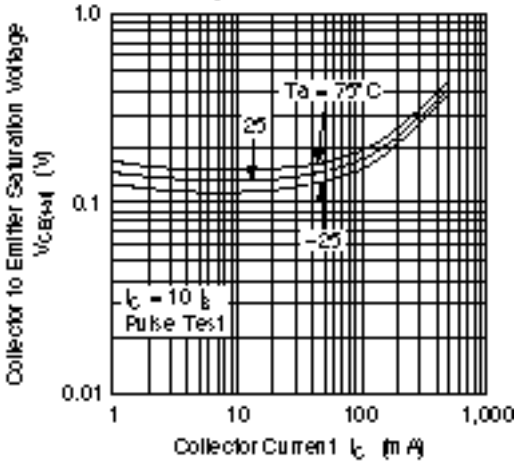
DC Current Transfer Ratio vs. Collector Current



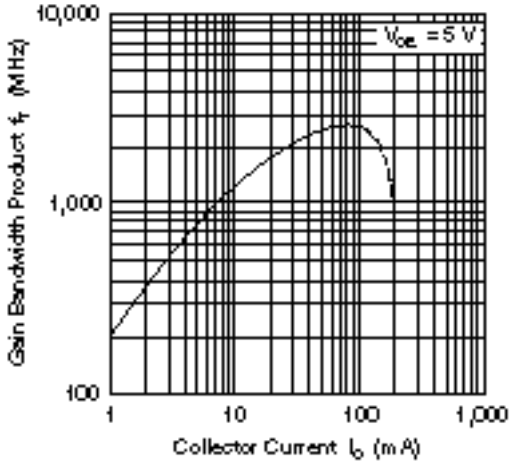
Base to Emitter Voltage vs. Collector Current

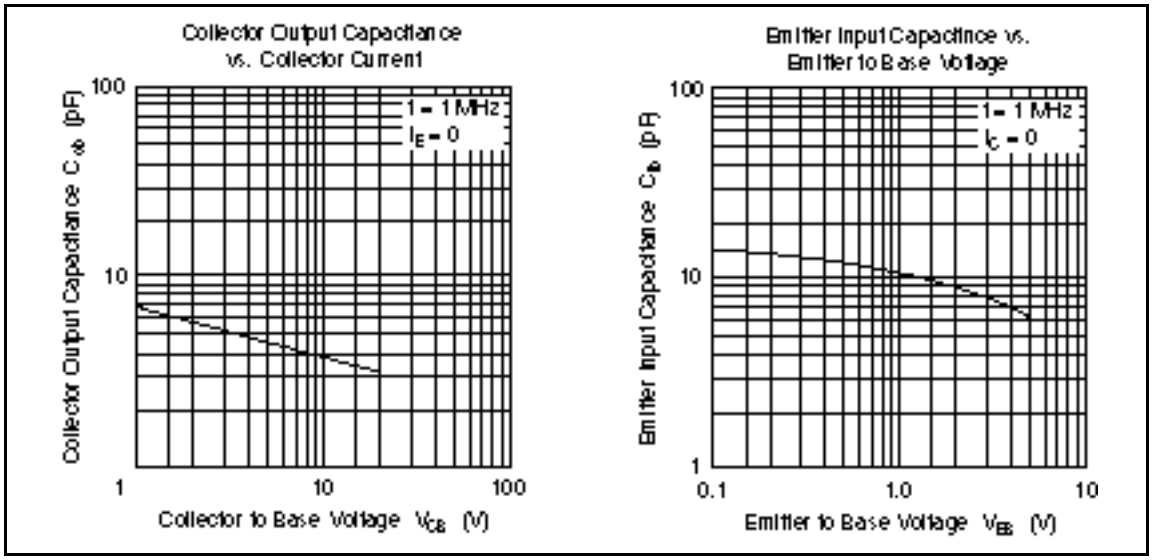


Collector to Emitter Saturation Voltage vs. Collector Current



Gain Bandwidth Product vs. Collector Current




Collector Output Capacitance
vs. Collector Current
Collector Output Capacitance C_{ob} (pF)
100
10
1
1 = 1 MHz
I_E = 0
1
10
100
Collector to Base Voltage V_{CB} (V)
Emitter Input Capacitance vs.
Emitter to Base Voltage
Emitter Input Capacitance C_{ib} (pF)
100
10
1
1 = 1 MHz
I_C = 0
0.1
1.0
10
Emitter to Base Voltage V_{EB} (V)

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