2SC3652

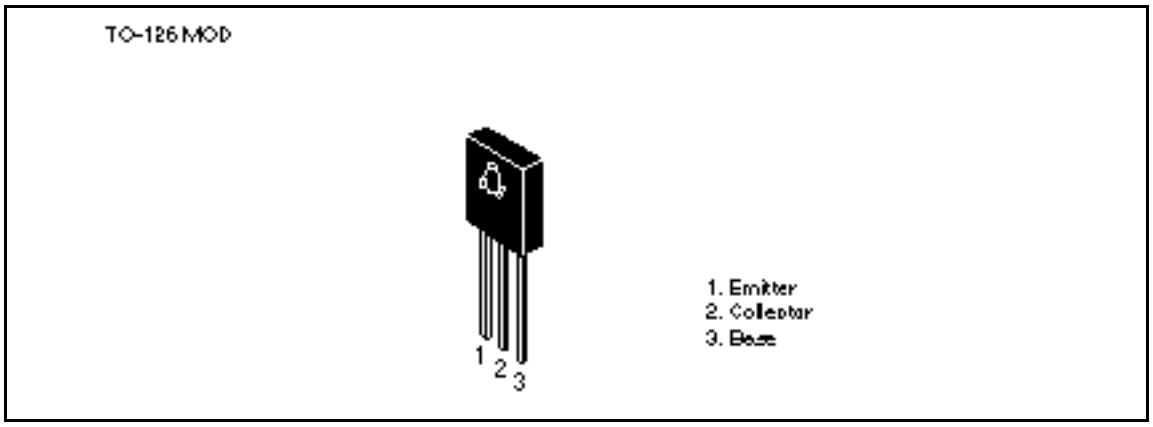
Silicon NPN Epitaxial

HITACHI

Application

High frequency amplifier

Outline



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}	3.5	V
Collector current	I_C	0.3	A
Collector peak current	$I_{C(peak)}$	0.5	A
Collector power dissipation	P_C	0.8	W
	P_C*[1]	5	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 1. Value at T_C = 25°C

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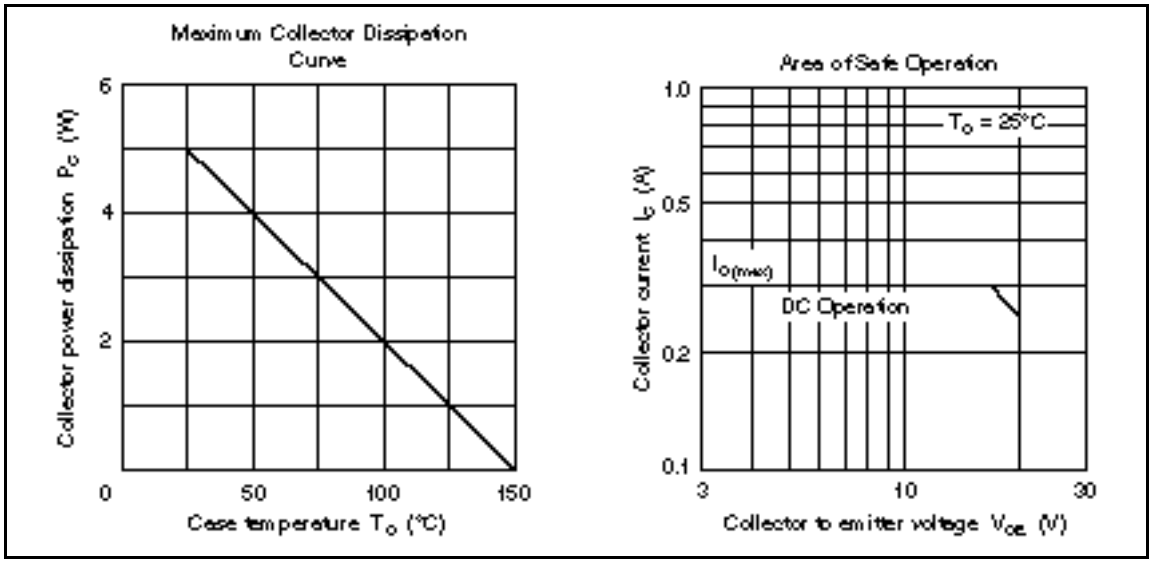
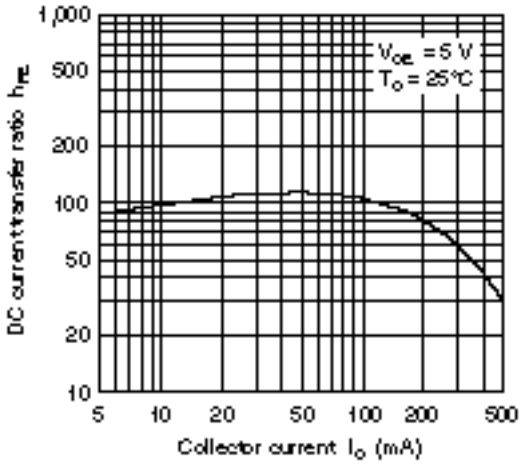
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	20	—	—	V	I_C = 10 mA, R_{BE} = ∞
Collector cutoff current	I_{CBO}	—	—	1	mA	V_{CB} = 25 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	1	mA	V_{EB} = 3 V, I_C = 0
DC current transfer ratio	h_{FE}	40	—	200		V_{CE} = 5 V, I_C = 50 mA*[1]
Base to emitter voltage	V_{BE}	—	—	1.2	V	V_{CE} = 5 V, I_C = 300 mA*[1]
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	2.0	V	I_C = 300 mA, I_B = 60 mA*[1]
Gain bandwidth product	f_T	—	1.2	—	GHz	V_{CE} = 5 V, I_C = 100 mA*[1]
Collector output capacitance	Cob	—	5	—	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz
Input capacitance	Cib	—	10	—	pF	V_{EB} = 2 V, I_C = 0, f = 1 MHz

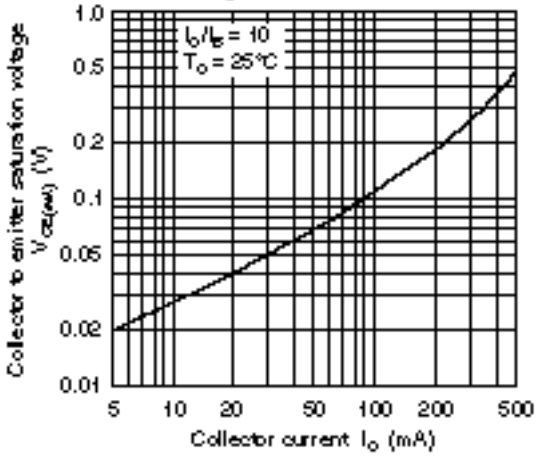
Note: 1. Pulse test



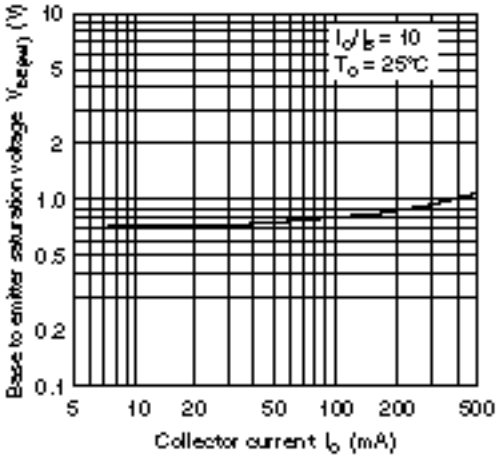
DC Current Transfer Ratio vs. Collector Current



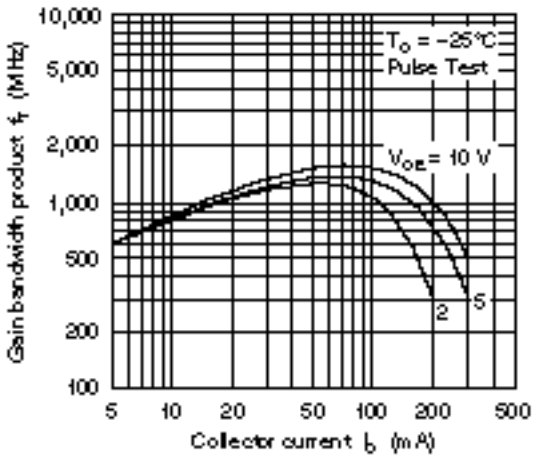
Collector to Emitter Saturation Voltage vs. Collector Current

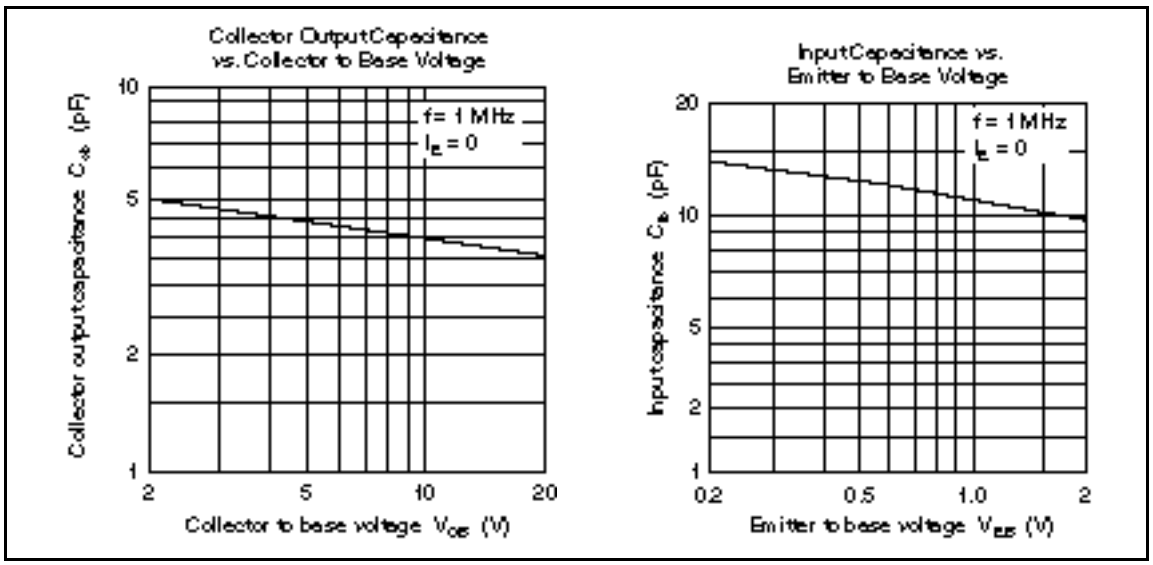


Base to Emitter Saturation Voltage vs. Collector Current



Gain Bandwidth Product vs. Collector Current




Collector Output Capacitance
vs. Collector to Base Voltage
f = 1 MHz
I_E = 0
Collector output capacitance C_{ob} (pF)
Collector to base voltage V_{CB} (V)
10
5
2
1
2
5
10
20
Input Capacitance vs.
Emitter to Base Voltage
f = 1 MHz
I_E = 0
Input capacitance C_{ib} (pF)
Emitter to base voltage V_{EB} (V)
20
10
5
2
1
0.2
0.5
1.0
2

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