2SC3867

Silicon NPN Epitaxial

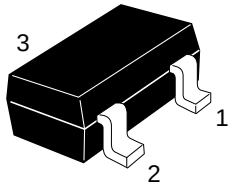
HITACHI

Application

- UHF frequency converter
- Wide band amplifier

Outline

MPAK



1. Base
2. Emitter
3. Collector

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Absolute Maximum Ratings (Ta = 25°C)

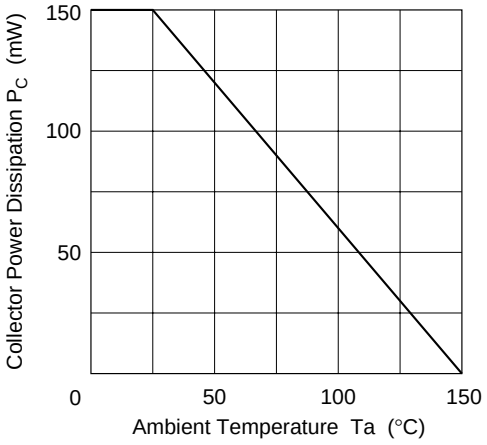
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	20	V
Collector to emitter voltage	V_{CEO}	11	V
Emitter to base voltage	V_{EBO}	3	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Electrical Characteristics (Ta = 25°C)

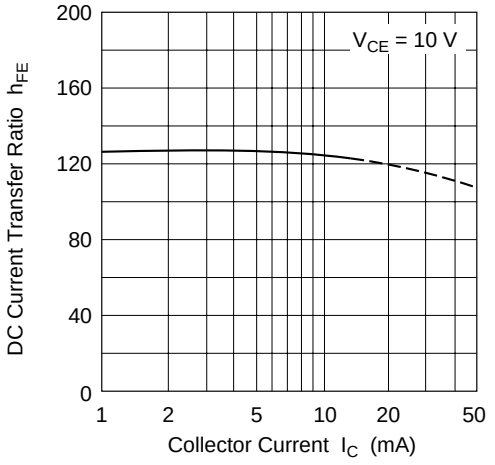
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	20	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	11	—	—	V	I_C = 1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	3	—	—	V	I_E = 10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	0.5	µA	V_{CB} = 15 V, I_E = 0
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	0.7	V	I_C = 10 mA, I_B = 5 mA
DC current transfer ratio	h_{FE}	45	—	200		V_{CE} = 10 V, I_C = 5 mA
Gain bandwidth product	f_T	2.5	3.8	—	GHz	V_{CE} = 10 V, I_C = 10 mA
Collector output capacitance	Cob	—	0.8	1.5	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz
Conversion gain	CG	10	14	—	dB	V_{CC} = 10 V, I_C = 1 mA, f = 900 MHz,
Noise figure	NF	—	10	14	dB	f_{osc} = 930 MHz, (–5dBm), f_{out} = 30 MHz

Note: Marking is “DI–”

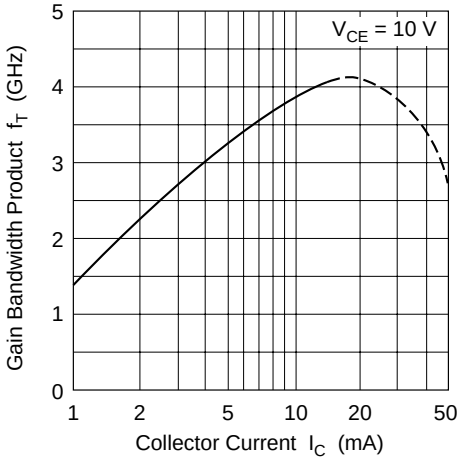
Maximum Collector Dissipation Curve



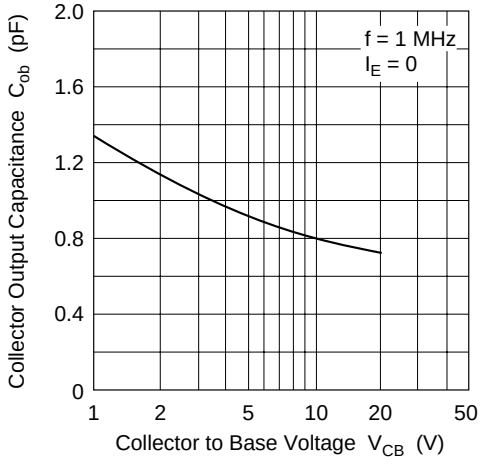
DC Current Transfer Ratio vs.Collector Current



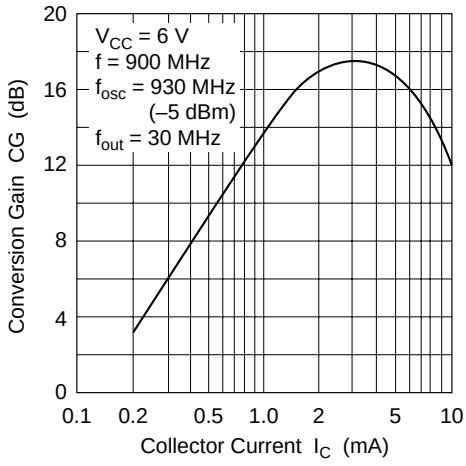
Gain Bandwidth Product vs.Collector Current



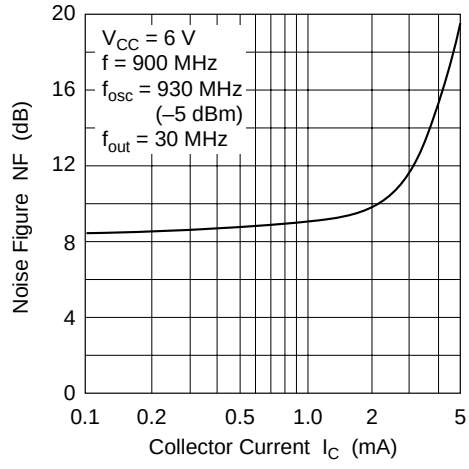
Collector Output Capacitance vs.
Collector to Base Voltage



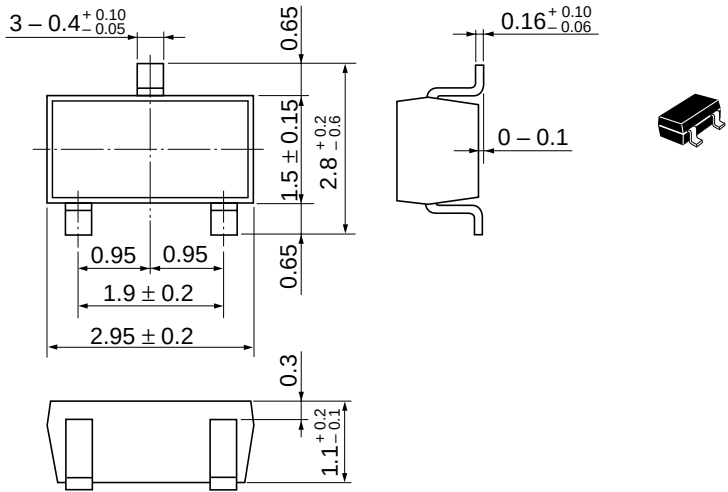
Conversion Gain vs. Collector Current



Noise Figure vs. Collector Current



Unit: mm



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

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