2SC3513

Silicon NPN Epitaxial

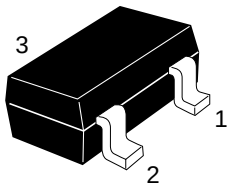
HITACHI

Application

UHF / VHF wide band amplifier

Outline

MPAK



1. Emitter
2. Base
3. Collector

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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	15	V
Collector to emitter voltage	V_{CEO}	11	V
Emitter to base voltage	V_{EBO}	2	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	$V_{(BR)CBO}$	15	—	—	V	I_C = 10 µA, I_E = 0
Collector cutoff current	I_{CEO}	—	—	1	µA	V_{CE} = 10 V, R_{BE} = ∞
Emitter cutoff current	I_{EBO}	—	—	1	µA	V_{EB} = 1 V, I_C = 0
Collector cutoff current	I_{CBO}	—	—	1	µA	V_{CB} = 12 V, I_E = 0
DC current transfer ratio	h_{FE}	50	120	250		V_{CE} = 5 V, I_C = 20 mA
Collector output capacitance	Cob	—	1.0	1.5	pF	V_{CB} = 5 V, I_E = 0, f = 1 MHz
Gain bandwidth product	f_T	—	6.0	—	GHz	V_{CE} = 5 V, I_C = 20 mA
Power gain	PG	—	10	—	dB	V_{CE} = 5 V, I_C = 20 mA, f = 900 MHz
Noise figure	NF	—	1.6	—	dB	V_{CE} = 5 V, I_C = 5 mA, f = 900 MHz

Note: Marking is “IS–”.

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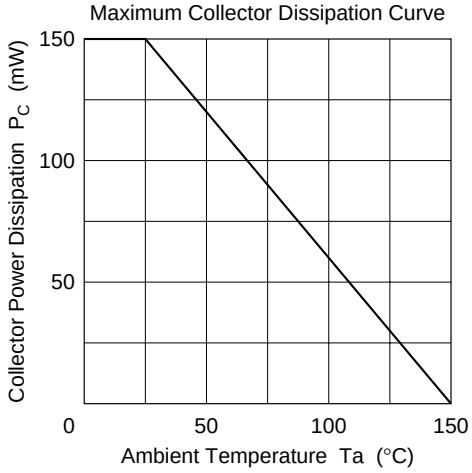
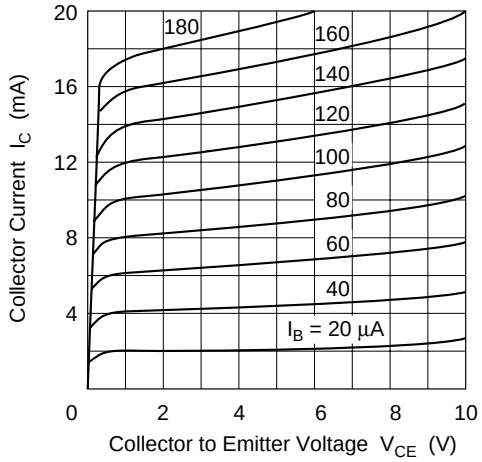
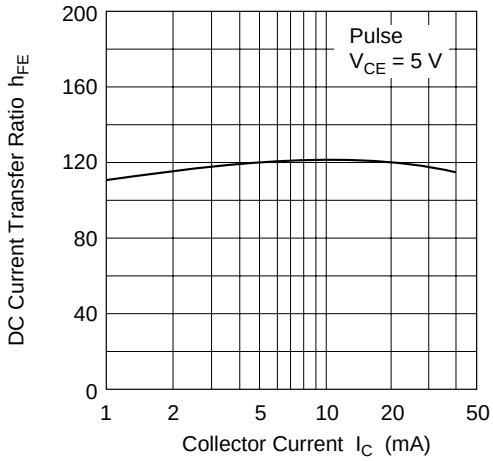
Maximum Collector Dissipation Curve



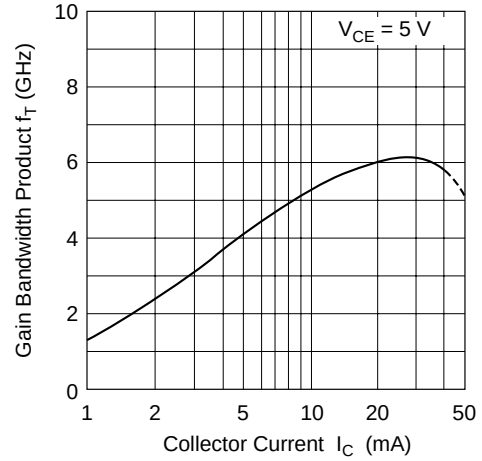
Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current



Gain Bandwidth Product vs. Collector Current



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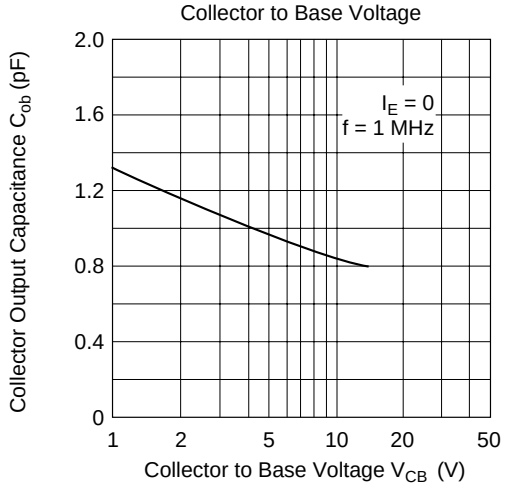
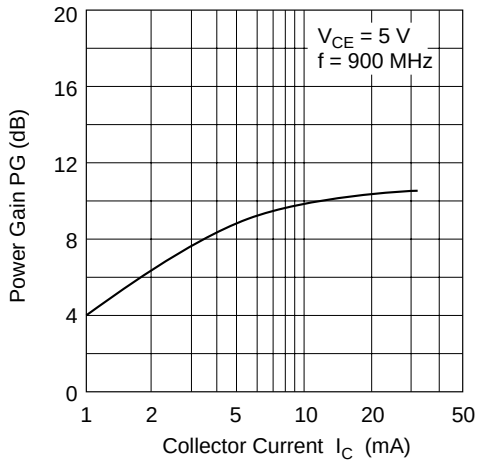
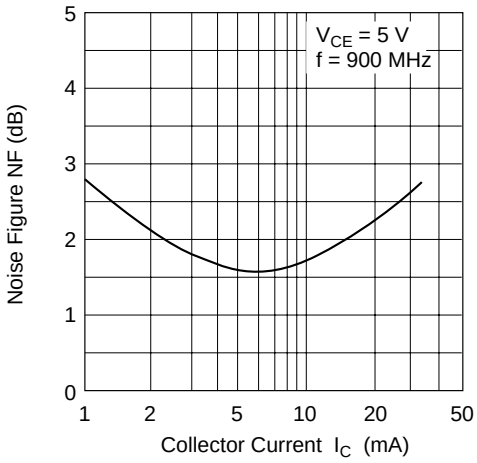
Collector Output Capacitance vs. Collector to Base Voltage



Power Gain vs. Collector Current



Noise Figure vs. Collector Current



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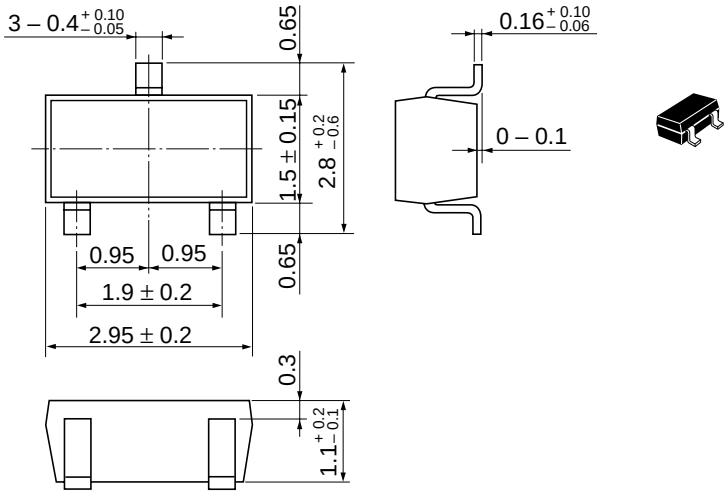
Unit: mm



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

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