HITACHI

2SC5120

Silicon NPN Epitaxial

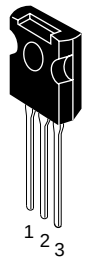
Application

High frequency amplifier

Features

- Excellent high frequency characteristics
  f_T = 500 MHz typ
- High voltage and low output capacitance
  V_{CEO} = 150 V, Cob = 5.0 pF typ
- Suitable for wide band video amplifier

TO–126FM



1. Emitter
2. Collector
3. Base

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	150	V
Collector to emitter voltage	V_{CEO}	150	V
Emitter to base voltage	V_{EBO}	3	V
Collector current	I_C	0.2	A
Collector peak current	ic(peak)	0.4	A
Collector power dissipation	P_C	1.4 8*[1]	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 1. Tc = 25°C

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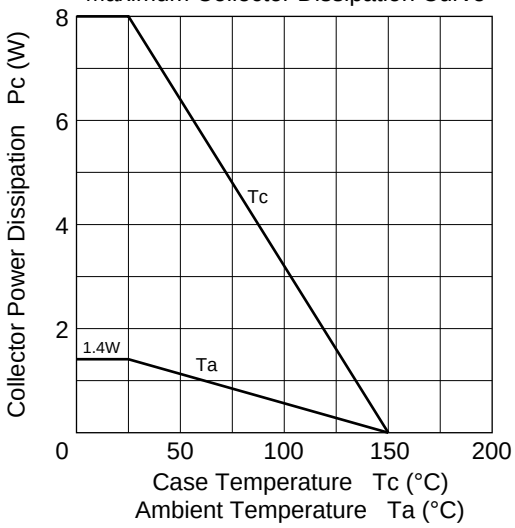
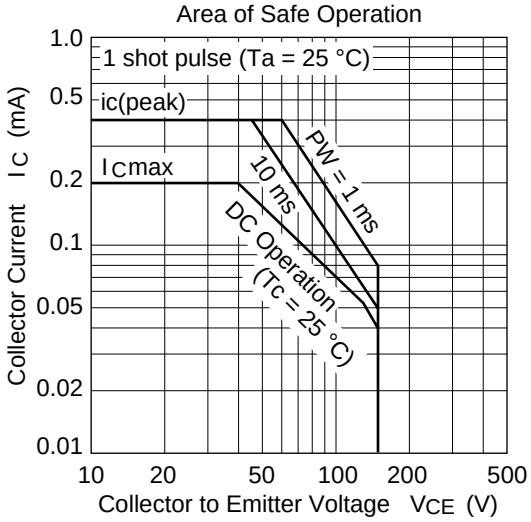
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	150	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	150	—	—	V	I_C = 1 mA, R_{BE} = ∞
Collector cutoff current	I_{CBO}	—	—	10	µA	V_{CB} = 100 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	10	µA	V_{EB} = 3 V, I_C = 0
DC current transfer ratio	h_{FE}	50	—	150	—	V_{CE} = 10 V, I_C = 10 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	I_C = 50 mA I_B = 5 mA
Gain bandwidth product	f_T	400	500	—	MHz	V_{CE} = 20 V I_C = 50 mA
Collector output capacitance	Cob	—	5.0	6.0	pF	V_{CB} = 30 V, I_E = 0 f=1MHz

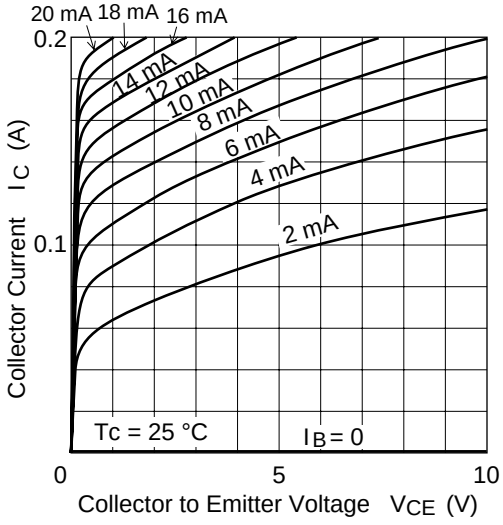
Maximum Collector Dissipation Curve



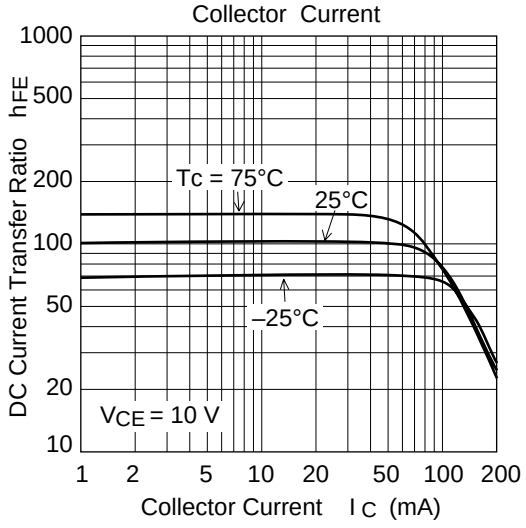
Area of Safe Operation



Typical Output Characteristics



DC Current Transfer Ratio vs. Collector Current



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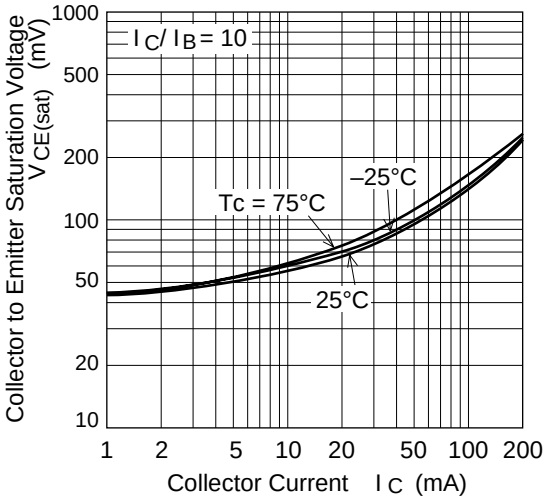
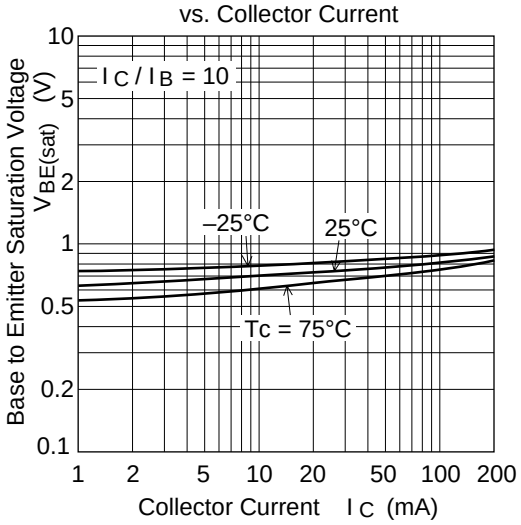
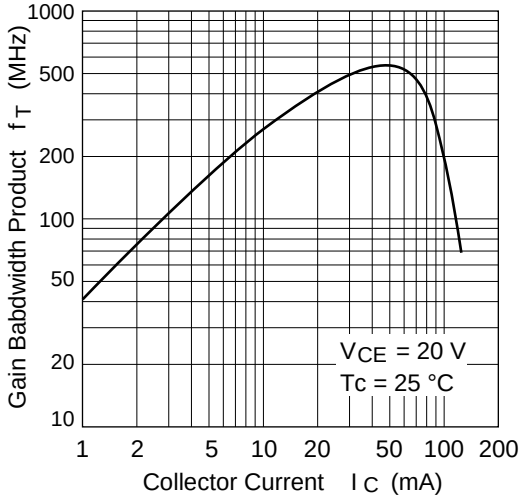
Collector to Emitter Saturation Voltage vs. Collector Current



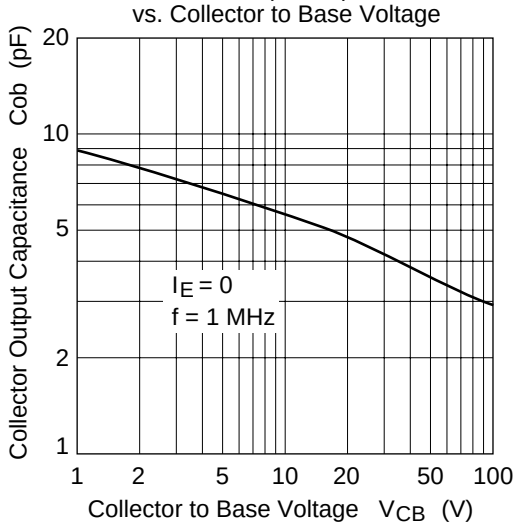
Base to Emitter Saturation Voltage vs. Collector Current



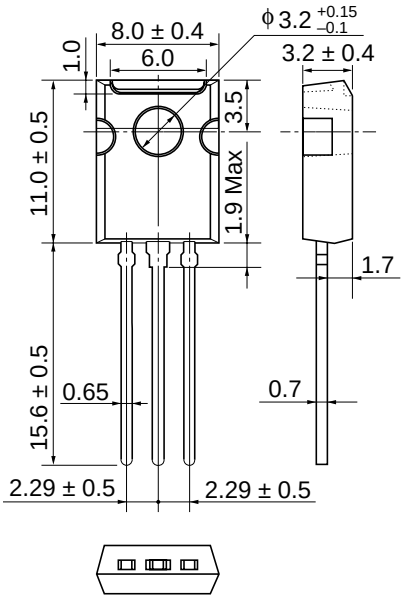
Gain Bandwidth Product vs. Collector Current

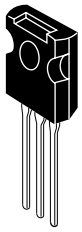


Collector Output Capacitance vs. Collector to Base Voltage



Package Outline





Hitachi Code	TO–126FM
EIAJ	—
JEDEC	—