2SA1566

Silicon PNP Epitaxial

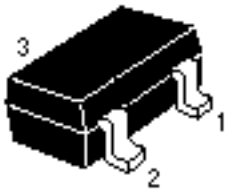
HITACHI

Application

Low frequency amplifier

Outline

MPAK



1. Emitter
2. Base
3. Collector

Hitachi semiconductor

Absolute Maximum Ratings (Ta = 25°C)

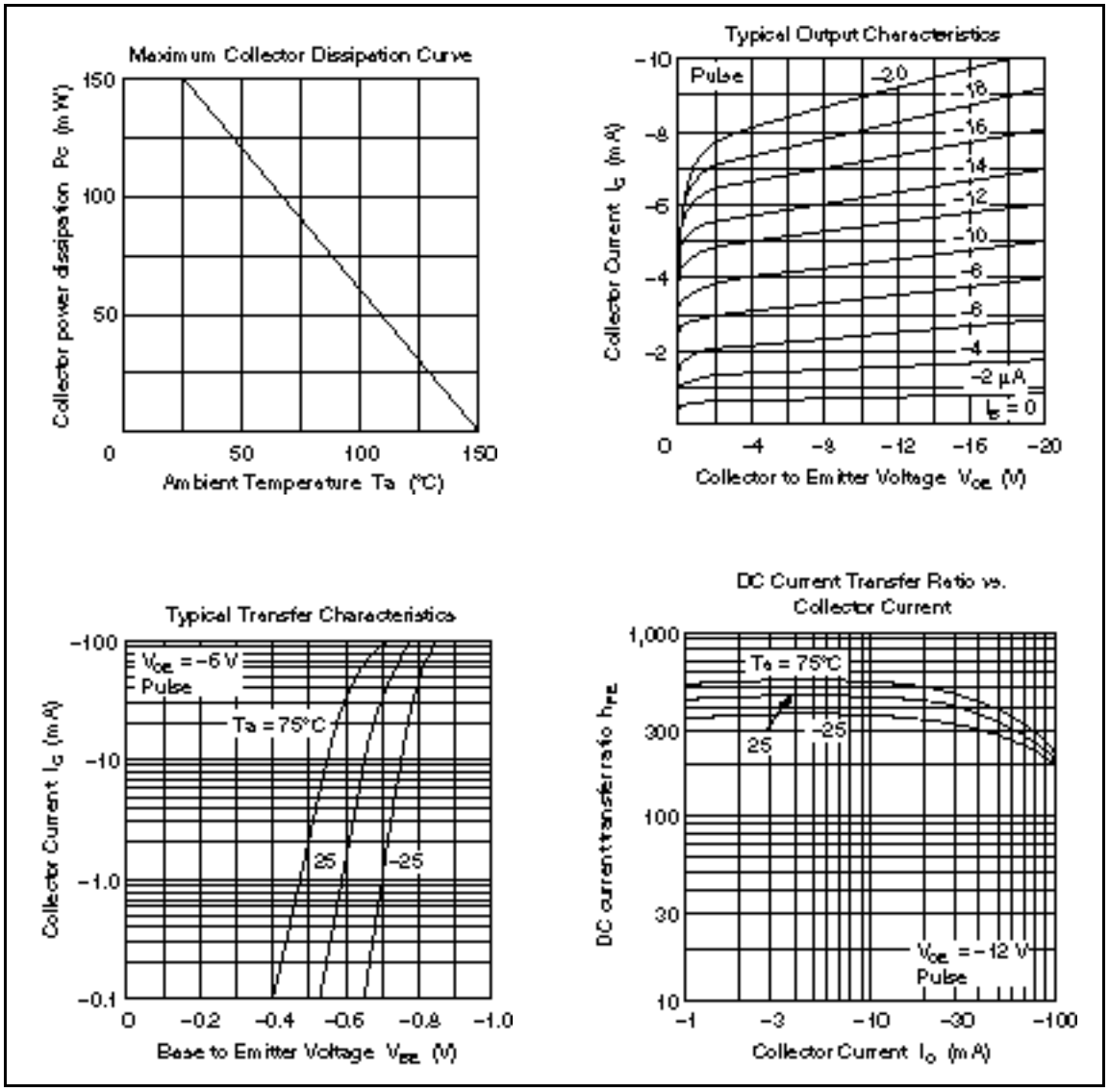
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	–120	V
Collector to emitter voltage	V_{CEO}	–120	V
Emitter to base voltage	V_{EBO}	–5	V
Collector current	I_C	–100	mA
Collector power dissipation	P_C	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Electrical Characteristics (Ta = 25°C)

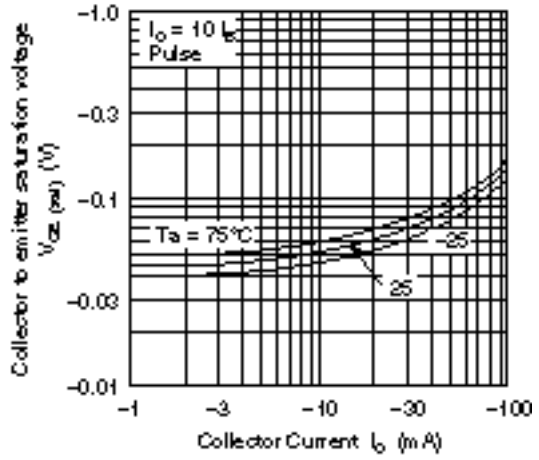
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	–120	—	—	V	I_C = –10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–120	—	—	V	I_C = –1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–5	—	—	V	I_E = –10 µA, I_C = 0
Collector cutoff current	I_{CBO}	—	—	–0.1	µA	V_{CB} = –70 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	–0.1	µA	V_{EB} = –2 V, I_C = 0
DC current transfer ratio	h_{FE}*[1]	250	—	800		V_{CE} = –12 V, I_C = –2 mA*[2]
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	–0.15	V	I_C = –10 mA, I_B = –1 mA*[2]
Base to emitter voltage	$V_{BE(sat)}$	—	—	–1.0	V	I_C = –10 mA, I_B = –1 mA*[2]

Notes: 1. The 2SA1566 is grouped by h_{FE} as follows.
2. Pulse test

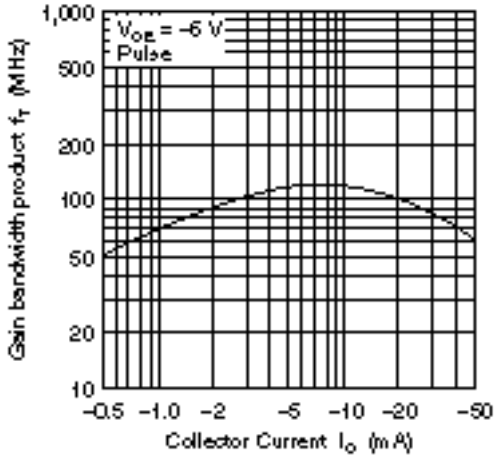
Grade	D	E
Mark	JID	JIE
h_{FE}	250 to 500	400 to 800


Maximum Collector Dissipation Curve
Collector power dissipation Pc (mW)
150
100
50
0
50
100
150
Ambient Temperature Ta (°C)
Typical Output Characteristics
Collector Current I_C (mA)
Pulse
−20
−18
−16
−14
−12
−10
−8
−6
−4
−2 µA
I_B = 0
−10
−8
−6
−4
−2
0
−4
−8
−12
−16
−20
Collector to Emitter Voltage V_{CE} (V)
Typical Transfer Characteristics
Collector Current I_C (mA)
V_{CE} = −6 V
Pulse
Ta = 75°C
25
−25
−100
−10
−1.0
−0.1
0
−0.2
−0.4
−0.6
−0.8
−1.0
Base to Emitter Voltage V_{BE} (V)
DC Current Transfer Ratio vs. Collector Current
DC current transfer ratio h_{FE}
Ta = 75°C
25
−25
V_{CE} = −12 V
Pulse
1,000
300
100
30
10
−1
−3
−10
−30
−100
Collector Current I_O (mA)

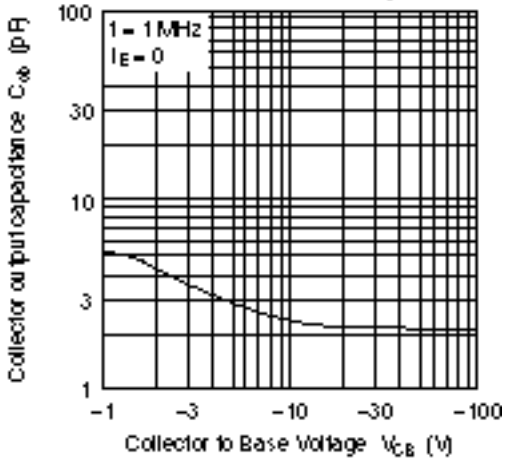
Collector to Emitter Saturation Voltage vs. Collector Current



Gain Bandwidth Product vs. Collector Current



Collector Output Capacitance v. Collector to Base Voltage



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