2SA1468

Silicon PNP Epitaxial

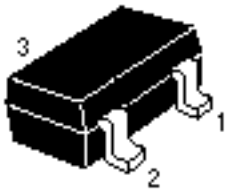
HITACHI

Application

High voltage amplifier

Outline

MPAK



1. Emitter
2. Base
3. Collector

Hitachi semiconductor

Absolute Maximum Ratings (Ta = 25°C)

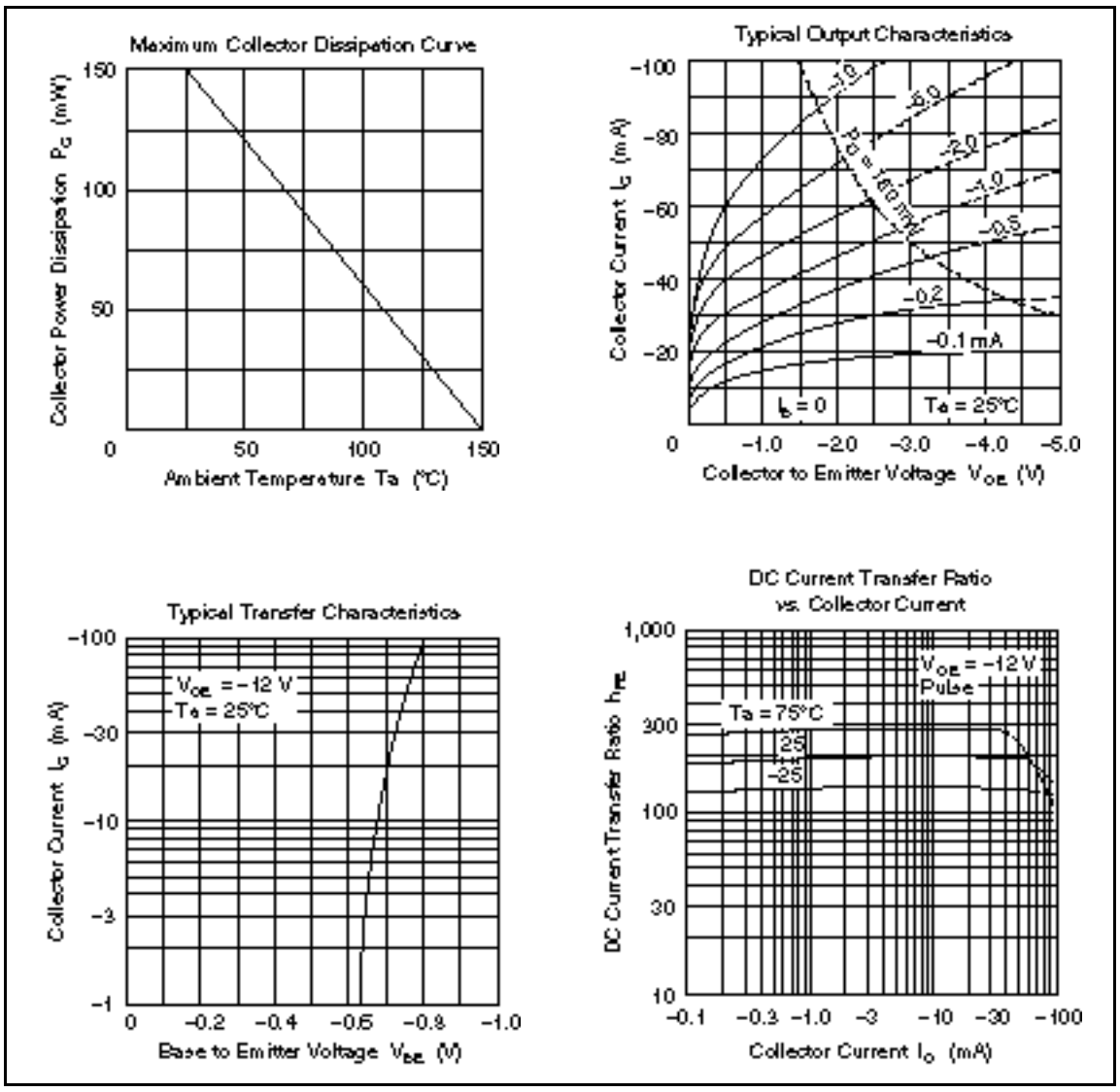
Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	–180	V
Collector to emitter voltage	V_{CEO}	–180	V
Emitter to base voltage	V_{EBO}	–5	V
Collector current	I_C	–100	mA
Collector power dissipation	P_C	150	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

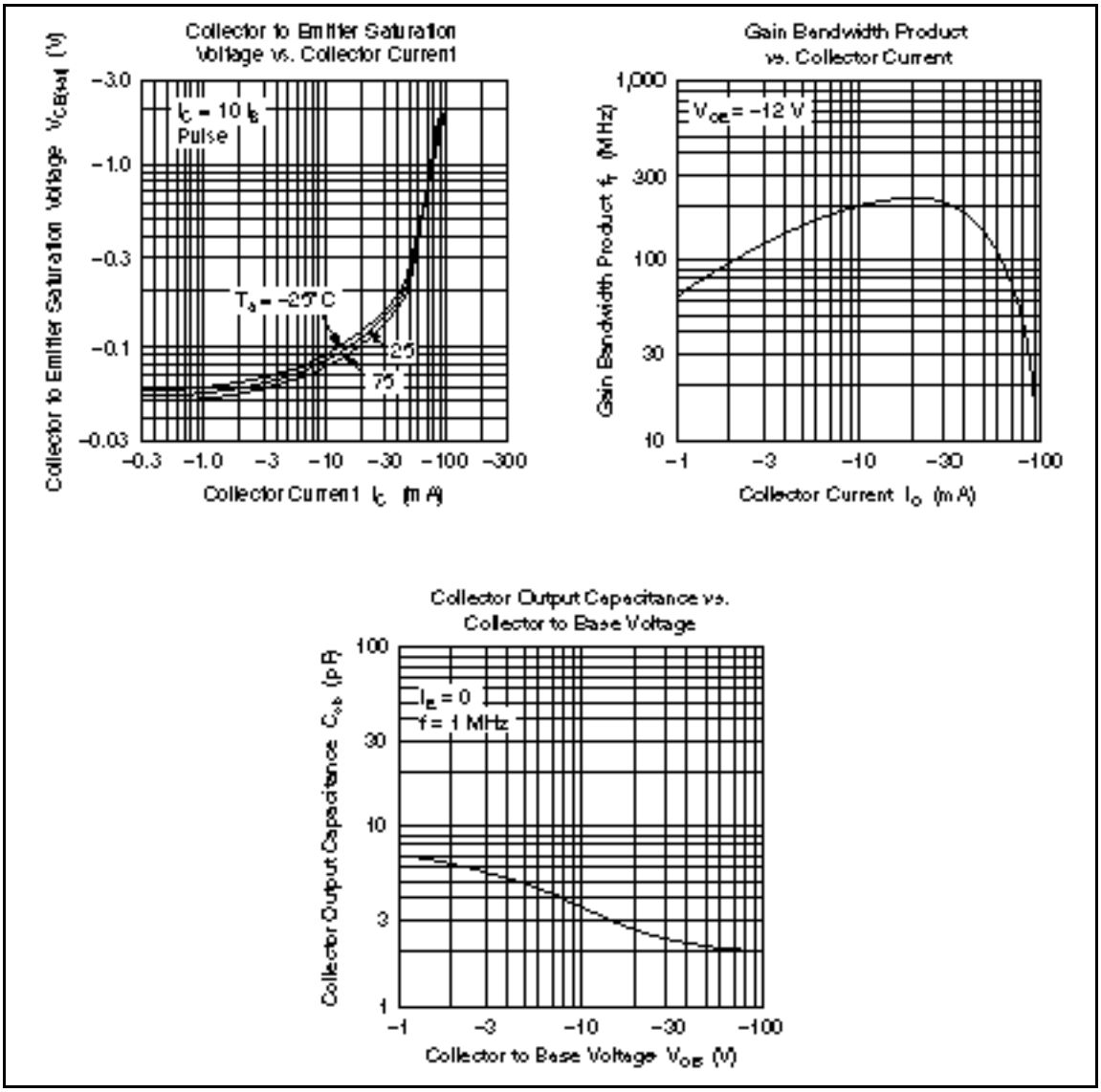
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	–180	—	—	V	I_C = –10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	–180	—	—	V	I_C = –0.5 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	–5	—	—	V	I_E = –10 µA, I_C = 0
DC current transfer ratio	h_{FE}*[1]	100	—	320		V_{CE} = –12 V, I_C = –2 mA*[2]
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	–0.5	V	I_C = –30 mA, I_B = –3 mA*[2]
Base to emitter voltage	V_{BE}	—	—	–1.0	V	V_{CE} = –12 V, I_C = –2 mA
Gain bandwidth product	f_T	—	200	—	MHz	V_{CE} = –12 V, I_C = –10 mA
Collector output capacitance	Cob	—	3.5	—	pF	V_{CB} = –10 V, I_E = 0, f = 1 MHz

Notes: 1. The 2SA1468 is grouped by h_{FE} as follows.
2. Pulse test

Grade	B	C
Mark	INB	INC
h_{FE}	100 to 200	160 to 320


Maximum Collector Dissipation Curve
Collector Power Dissipation P_C (mW)
150
100
50
0
50
100
150
Ambient Temperature Ta (°C)
Typical Output Characteristics
Collector Current I_C (mA)
−100
−80
−60
−40
−20
−10
−8.0
−6.0
−4.0
−2.0
−1.0
−0.5
−0.2
−0.1 mA
P_C = 150 mW
I_B = 0
Ta = 25°C
0
−1.0
−2.0
−3.0
−4.0
−5.0
Collector to Emitter Voltage V_{CE} (V)
Typical Transfer Characteristics
Collector Current I_C (mA)
−100
−30
−10
−3
−1
V_{CE} = −12 V
Ta = 25°C
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}
1,000
300
100
30
10
V_{CE} = −12 V
Pulse
Ta = 75°C
25
−25
−0.1
−0.3
−1.0
−3
−10
−30
−100
Collector Current I_C (mA)


Collector to Emitter Saturation Voltage vs. Collector Current
Collector to Emitter Saturation Voltage $V_{CE(sat)}$ (V)
I_C = 10 I_B
Pulse
T_a = −25°C
25
75
−3.0
−1.0
−0.3
−0.1
−0.03
−0.3 −1.0 −3 −10 −30 −100 −300
Collector Current I_C (mA)
Gain Bandwidth Product vs. Collector Current
Gain Bandwidth Product f_T (MHz)
V_{CE} = −12 V
1,000
300
100
30
10
−1 −3 −10 −30 −100
Collector Current I_C (mA)
Collector Output Capacitance vs. Collector to Base Voltage
Collector Output Capacitance C_{ob} (pF)
I_E = 0
f = 1 MHz
100
30
10
3
1
−1 −3 −10 −30 −100
Collector to Base Voltage V_{CB} (V)

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HITACHI

Hitachi, Ltd.
Semiconductor & IC Div.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100, Japan
Tel: Tokyo (03) 3270-2111
Fax: (03) 3270-5109

For further information write to:

Hitachi America, Ltd.
Semiconductor & IC Div.
2000 Sierra Point Parkway
Brisbane, CA. 94005-1835
U.S.A.
Tel: 415-589-8300
Fax: 415-583-4207

Hitachi Europe GmbH
Electronic Components Group
Continental Europe
Dornacher Straße 3
D-85622 Feldkirchen
München
Tel: 089-9 91 80-0
Fax: 089-9 29 30 00

Hitachi Europe Ltd.
Electronic Components Div.
Northern Europe Headquarters
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA
United Kingdom
Tel: 0628-585000
Fax: 0628-778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 0104
Tel: 535-2100
Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd.
Unit 706, North Tower,
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon
Hong Kong
Tel: 27359218
Fax: 27306071