HTT1213E

Silicon NPN Epitaxial Twin Transistor

HITACHI

ADE-208-1449(Z)
Preliminary
Rev. 0
Aug. 2001

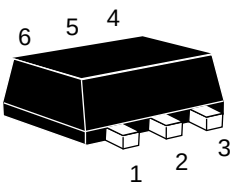
Features

- Include 2 transistors in a small size SMD package: EMFPAK–6 (6 Leads: 1.2 x 0.8 x 0.5 mm)

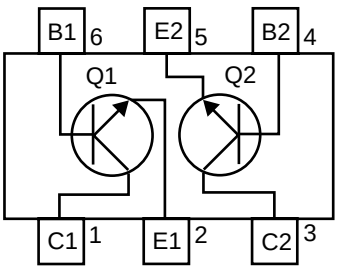
Q1: Equivalent Buffer Transistor	Q2: Equivalent OSC Transistor
2SC5700	2SC5700

Outline

EMFPAK-6



Internal Connection



1. Collector Q1
2. Emitter Q1
3. Collector Q2
4. Base Q2
5. Emitter Q2
6. Base Q1

Note: Marking is “E”.

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Absolute Maximum Ratings

(Ta = 25 °C)

Item	Symbol	Ratings Q1 and Q2	Unit
Collector to base voltage	V_{CBO}	15	V
Collector to emitter voltage	V_{CEO}	4	V
Emitter to base voltage	V_{EBO}	1.5	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	Total 200*	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

*Value on PCB. (FR–4(13 x 13 x 0.635 mm))

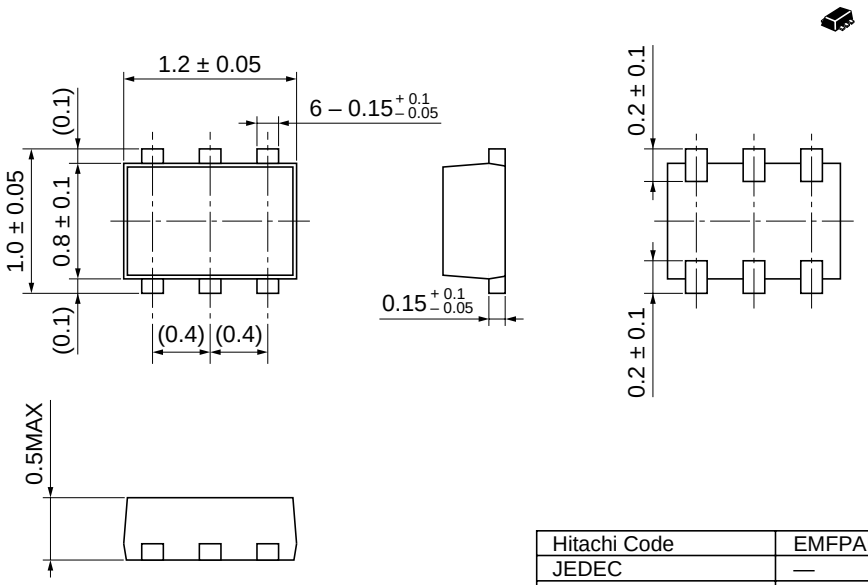
Electrical Characteristics (Q1 and Q2)

(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_{CBO}	—	—	0.1	mA	V_{CB} = 15 V, I_E = 0
Collector cutoff current	I_{CEO}	—	—	1	mA	V_{CE} = 4 V, R_{BE} = infinite
Emitter cutoff current	I_{EBO}	—	—	0.2	mA	V_{EB} = 0.8 V, I_C = 0
DC current transfer ratio	h_{FE}	100	130	170	—	V_{CE} = 1 V, I_C = 5 mA
Reverse transfer capacitance	C_{re}	—	0.30	0.45	pF	V_{CB} = 1 V, f = 1 MHz Emitter ground
Gain bandwidth product	f_T	10	12	—	GHz	V_{CE} = 1 V, I_C = 5 mA, f = 1 GHz
Forward transfer coefficient	$\|S_{21}\|^2$	13	16	—	dB	V_{CE} = 1 V, I_C = 5 mA, f = 900 MHz, $\Gamma_S = \Gamma_L$ = 50 Ω
Noise figure	NF	—	1.0	2.0	dB	

Package Dimensions

Unit: mm



Hitachi Code	EMFPAK-6
JEDEC	—
EIAJ	Conforms
Mass (reference value)	1.2 mg

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Sales Offices

HITACHI

Hitachi, Ltd.
Semiconductor & Integrated Circuits
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: (03) 3270-2111 Fax: (03) 3270-5109

URL http://www.hitachisemiconductor.com/

For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive
San Jose,CA 95134
Tel: <1> (408) 433-1990
Fax: <1>(408) 433-0223

Hitachi Europe Ltd.
Electronic Components Group
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 585200

Hitachi Europe GmbH
Electronic Components Group
Dornacher Straße 3
D-85622 Feldkirchen
Postfach 201, D-85619 Feldkirchen
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Asia Ltd.
Hitachi Tower
16 Collyer Quay #20-00
Singapore 049318
Tel : <65>-538-6533/538-8577
Fax : <65>-538-6933/538-3877
URL : http://semiconductor.hitachi.com.sg

Hitachi Asia Ltd.
(Taipei Branch Office)
4/F, No. 167, Tun Hwa North Road
Hung-Kuo Building
Taipei (105), Taiwan
Tel : <886>-(2)-2718-3666
Fax : <886>-(2)-2718-8180
Telex : 23222 HAS-TP
URL : http://www.hitachi.com.tw

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon Hong Kong
Tel : <852>-(2)-735-9218
Fax : <852>-(2)-730-0281
URL : http://semiconductor.hitachi.com.hk

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