

HTT1213E

Silicon NPN Epitaxial Twin Transistor

REJ03G0526-0100
(Previous ADE-208-1449(Z))
Rev.1.00
Feb.07.2005

Features

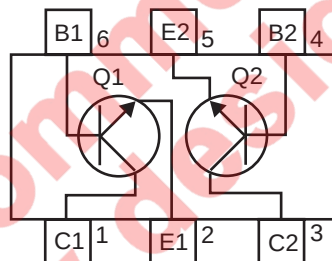
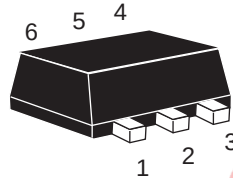
- Include 2 transistors in a small size SMD package: EMFPAK-6 (6 Leads: 1.2 x 0.8 x 0.5 mm)

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

Outline

PXS F0006LA-A
(Previous code: EMFPAK-6)

Pin Arrangement



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

Note: Marking is "E".

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
		Q1 and Q2	
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	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

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

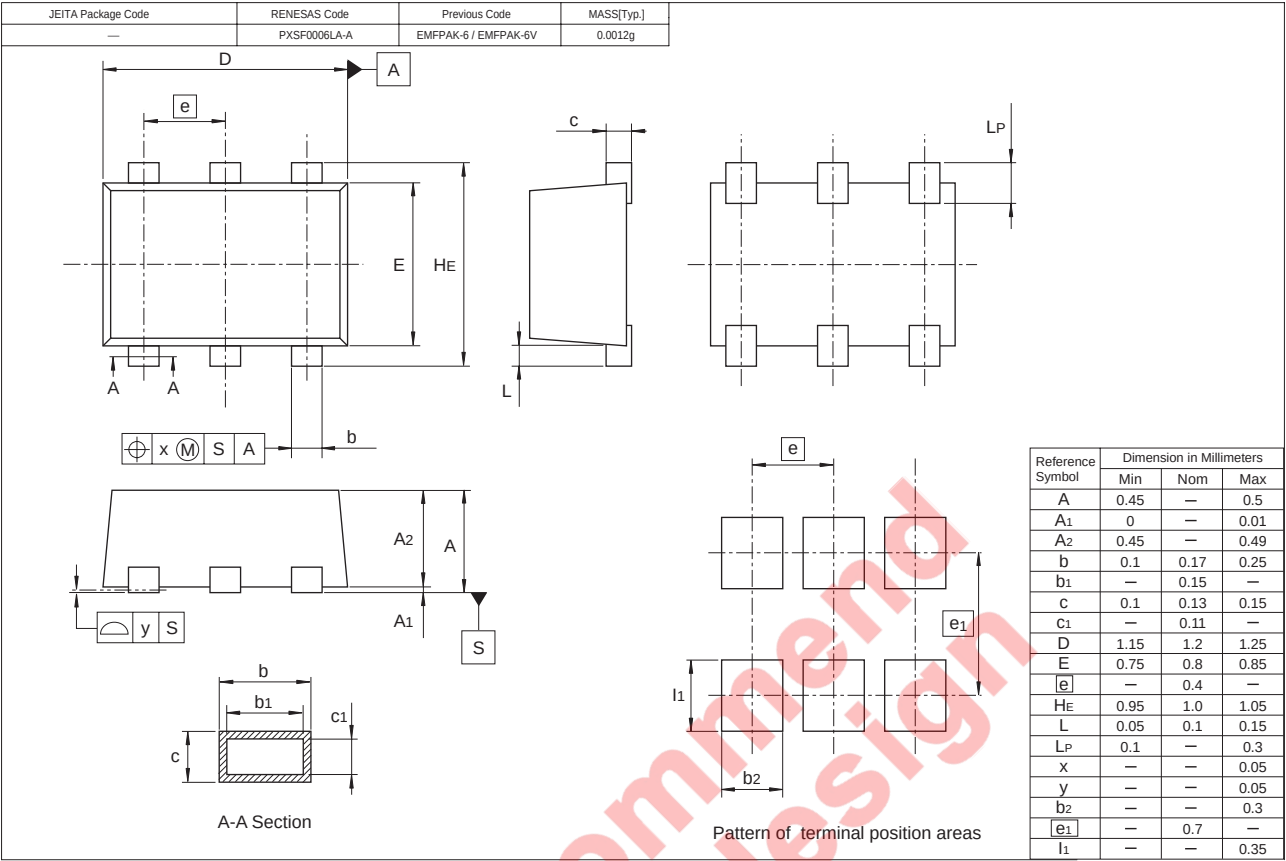
Electrical Characteristics (Q1 and Q2)

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	15	—	—	V	$I_C = 10\ \mu A$, $I_E = 0$
Collector cutoff current	I_{CBO}	—	—	0.1	μA	$V_{CB} = 15\ V$, $I_E = 0$
Collector cutoff current	I_{CEO}	—	—	1	μA	$V_{CE} = 4\ V$, $R_{BE} = \text{infinite}$
Emitter cutoff current	I_{EBO}	—	—	0.1	μA	$V_{EB} = 0.8\ V$, $I_C = 0$
DC current transfer ratio	h_{FE}	100	130	150	—	$V_{CE} = 1\ V$, $I_C = 5\ mA$
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	$V_{CE} = 1\ V$, $I_C = 5\ mA$, $f = 900\ MHz$, $\Gamma_S = \Gamma_L = 50\ \Omega$
Noise figure	NF	—	1.0	1.7	dB	

Not recommend
for new design

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
HTT1213EETL	5000	φ178Taping

Note: Therefore especially small contact area of terminal, miss contact may occur if inadequate soldering condition is applied.

Contact Renesas sales office for any question regarding recommended soldering condition of Renesas.

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