

# HTT1129E

## Silicon NPN Epitaxial Twin Transistor

REJ03G0840-0200  
 (Previous ADE-208-1541A)  
 Rev.2.00  
 Aug.10.2005

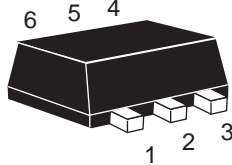
### Features

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

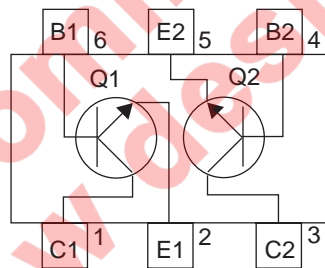
Q1: Equivalent Buffer transistor	Q2: Equivalent OSC transistor
2SC5849	2SC5872

### Outline

RENESAS Package code: PXSF0006LA-A  
 (Package name: EMFPAK-6)



Pin Arrangement



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

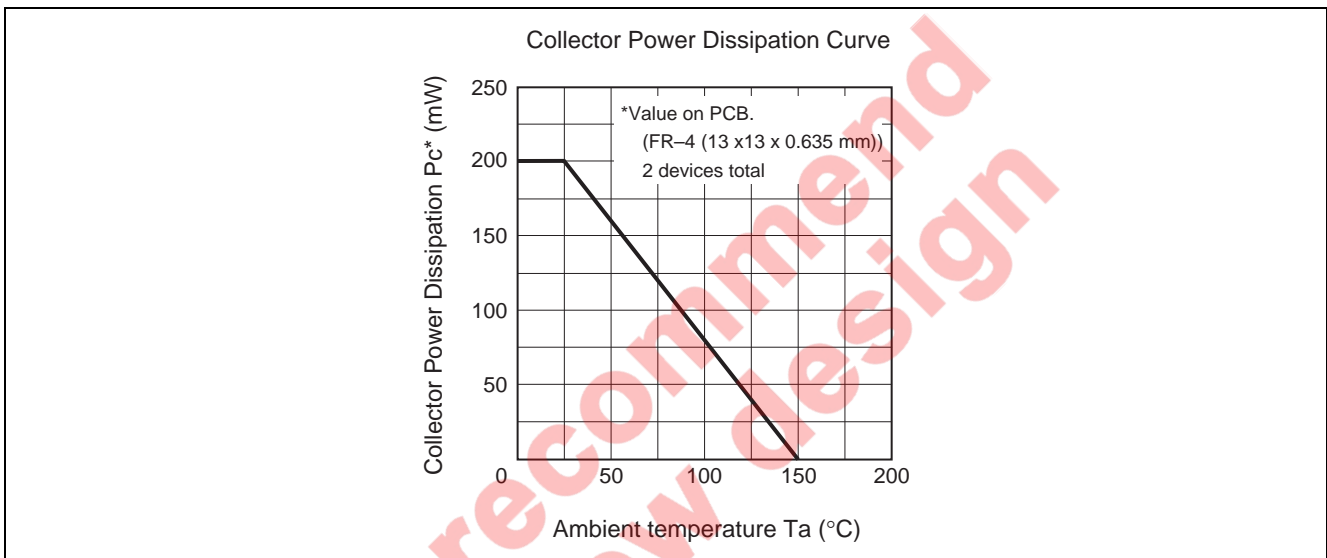
Note: Marking is "Z".

**Absolute Maximum Ratings**

(Ta = 25°C)

Item	Symbol	Ratings		Unit
		Q1	Q2	
Collector to base voltage	V <sub>CBO</sub>	15	15	V
Collector to emitter voltage	V <sub>CEO</sub>	6	6	V
Emitter to base voltage	V <sub>EBO</sub>	1.5	0.8	V
Collector current	I <sub>C</sub>	80	50	mA
Collector power dissipation	P <sub>C</sub>	Total 200*		mW
Junction temperature	T <sub>J</sub>	150	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	-50 to +150	°C

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



## Q1 Electrical Characteristics

(Ta = 25°C)

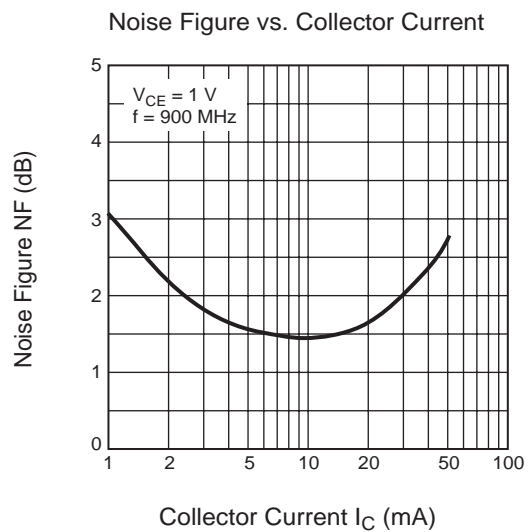
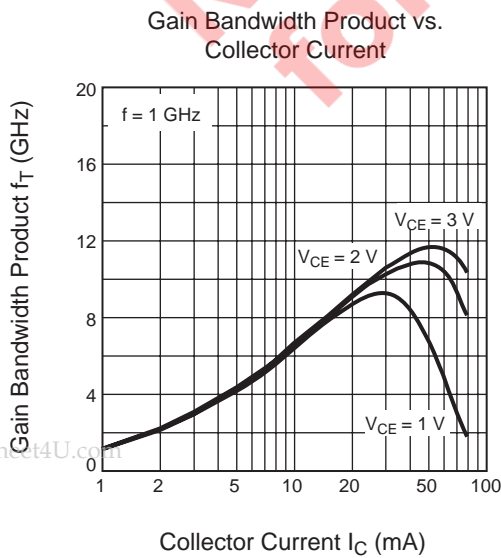
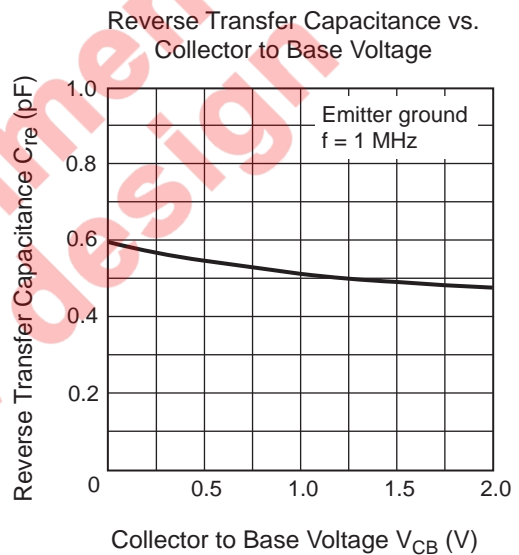
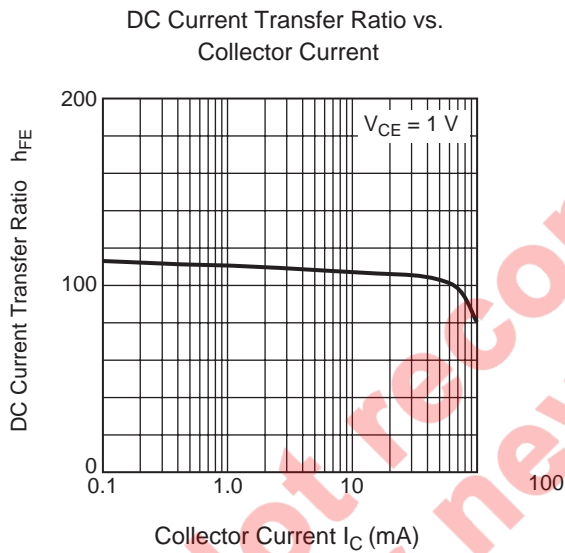
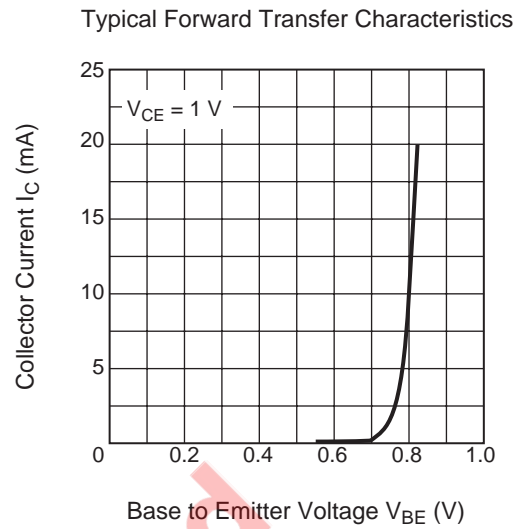
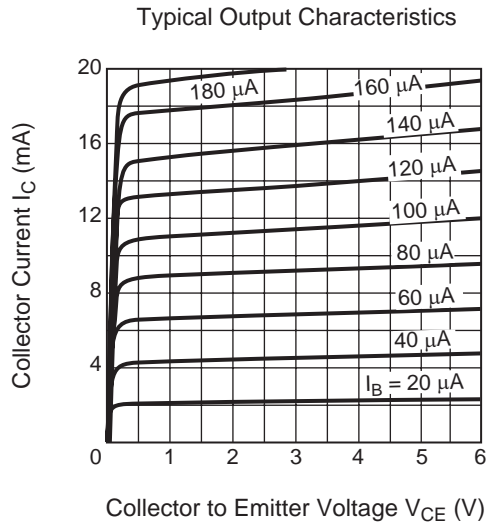
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	15	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector cutoff current	$I_{CBO}$	—	—	0.1	$\mu A$	$V_{CB} = 15 V, I_E = 0$
Collector cutoff current	$I_{CEO}$	—	—	0.1	$\mu A$	$V_{CE} = 6 V, R_{BE} = \text{infinite}$
Emitter cutoff current	$I_{EBO}$	—	—	0.1	$\mu A$	$V_{EB} = 1.5 V, I_C = 0$
DC current transfer ratio	$h_{FE}$	90	120	140	—	$V_{CE} = 1 V, I_C = 5 mA$
Reverse transfer capacitance	$C_{re}$	—	0.50	0.65	pF	$V_{CB} = 1 V, f = 1 MHz$ Emitter ground
Gain bandwidth product	$f_T$	2	4	—	GHz	$V_{CE} = 1 V, I_C = 5 mA, f = 1 GHz$
Forward transfer coefficient	$ S_{21} ^2$	7	11	—	dB	$V_{CE} = 1 V, I_C = 5 mA,$
Noise figure	NF	—	1.7	2.3	dB	$f = 900 MHz,$ $\Gamma_S = \Gamma_L = 50 \Omega$

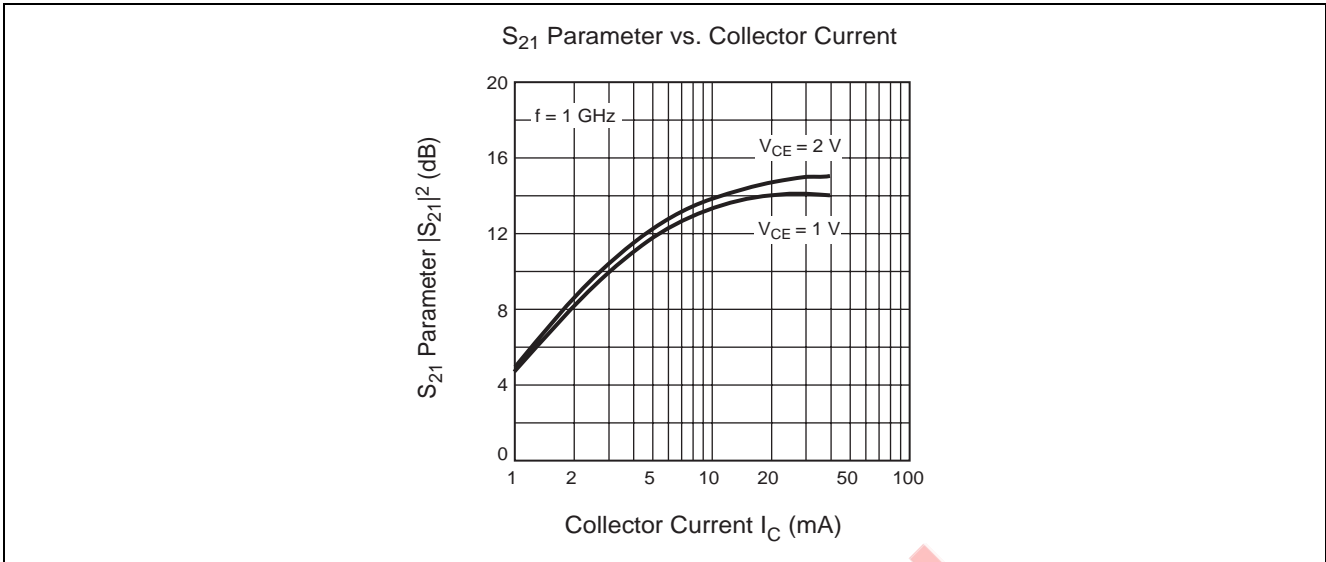
## Q2 Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	16	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector cutoff current	$I_{CBO}$	—	—	0.1	$\mu A$	$V_{CB} = 15 V, I_E = 0$
Collector cutoff current	$I_{CEO}$	—	—	0.1	$\mu A$	$V_{CE} = 6 V, R_{BE} = \text{infinite}$
Emitter cutoff current	$I_{EBO}$	—	—	0.1	$\mu A$	$V_{EB} = 0.8 V, I_C = 0$
DC current transfer ratio	$h_{FE}$	90	120	140	—	$V_{CE} = 1 V, I_C = 5 mA$
Reverse transfer capacitance	$C_{re}$	—	0.25	0.35	pF	$V_{CB} = 1 V, f = 1 MHz$ Emitter ground
Gain bandwidth product	$f_T$	8	10	—	GHz	$V_{CE} = 1 V, I_C = 5 mA, f = 1 GHz$
Forward transfer coefficient	$ S_{21} ^2$	13	16	—	dB	$V_{CE} = 1 V, I_C = 5 mA,$
Noise figure	NF	—	1.0	1.6	dB	$f = 900 MHz$ $\Gamma_S = \Gamma_L = 50 \Omega$

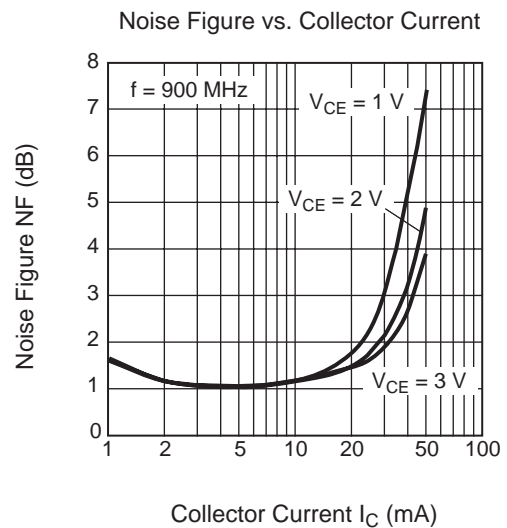
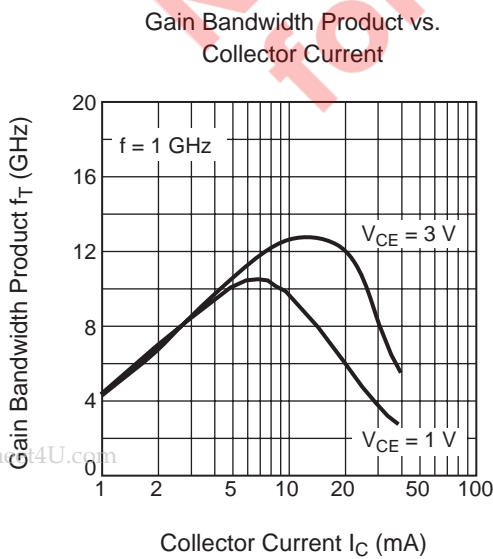
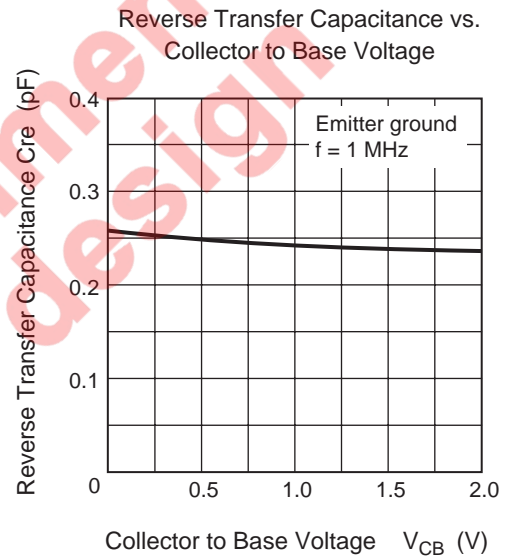
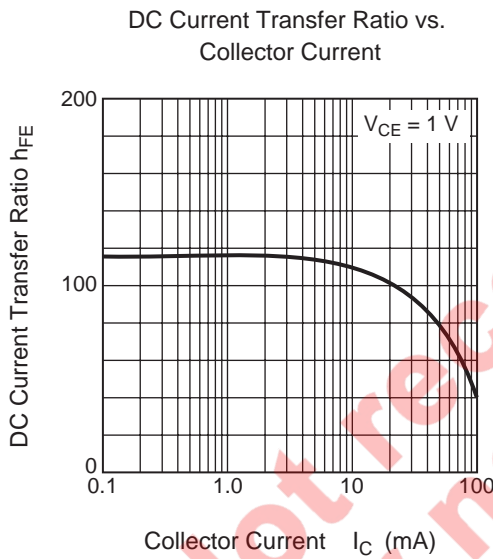
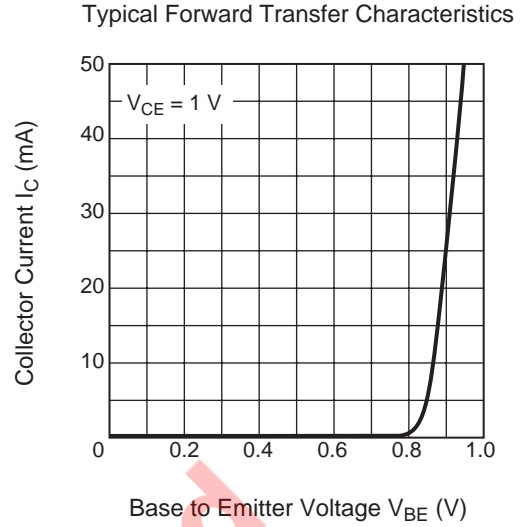
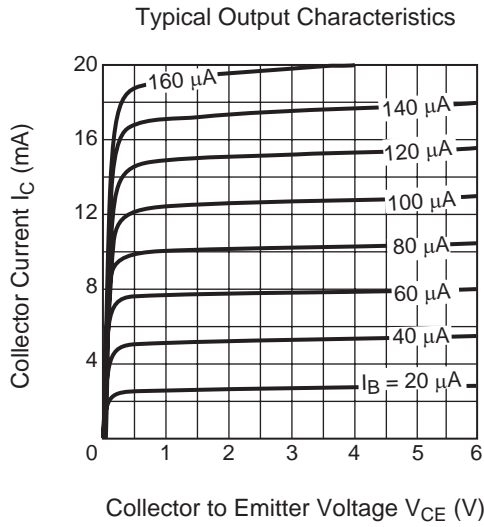
Q1 Main Characteristics



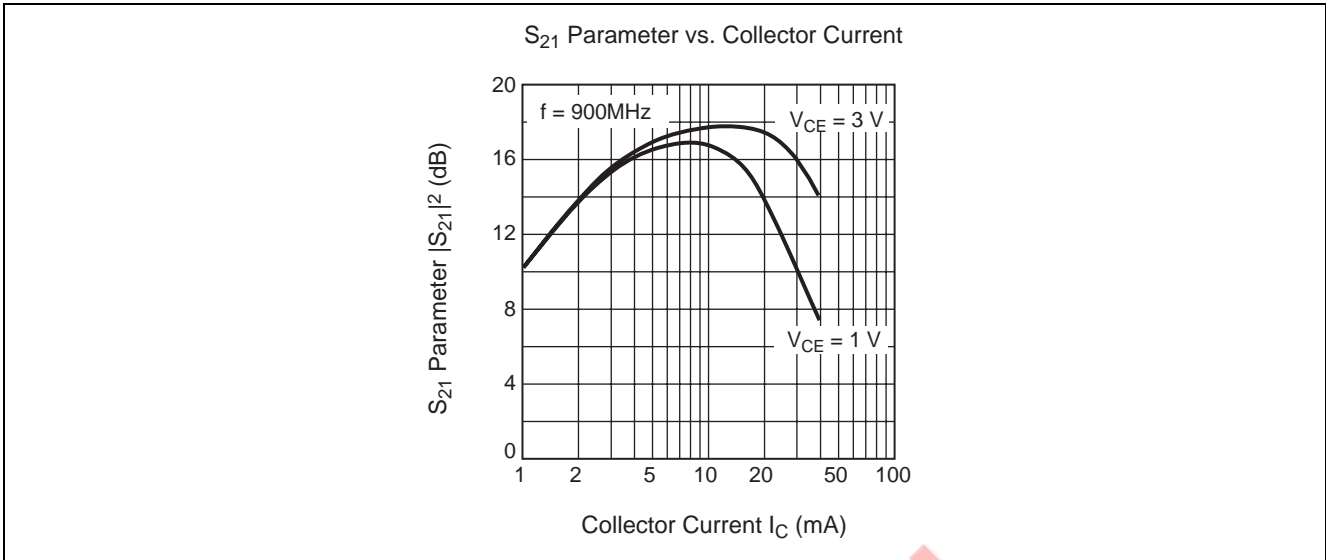


Not recommended for new design

Q2 Main Characteristics

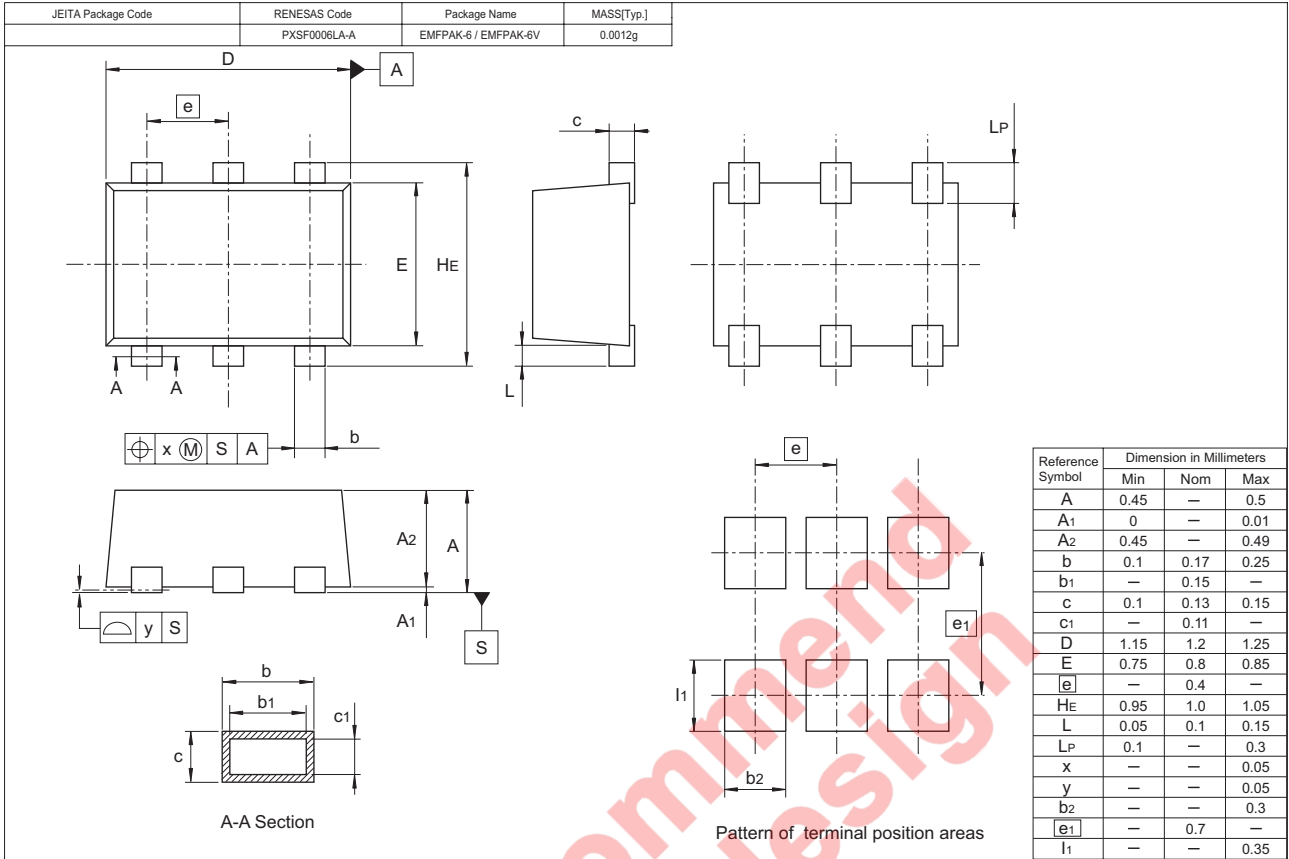


www.DataSheet4U.com



Not recommended for new design

### Package Dimensions



### Ordering Information

Part Name	Quantity	Shipping Container
HTT1129EZTL-E	5000	φ 178 mm Reel, 8 mm Emboss Taping

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.



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