

2SD1421

Silicon NPN Epitaxial

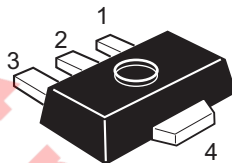
REJ03G0789-0200
(Previous ADE-208-1152)
Rev.2.00
Aug.10.2005

Application

Low frequency power amplifier

Outline

RENESAS Package code: PLZZ0004CA-A
(Package name: UPAK[®])



- 1. Base
- 2. Collector
- 3. Emitter
- 4. Collector (Flange)

*UPAK is a trademark of Renesas Technology Corp.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	180	V
Collector to emitter voltage	V_{CEO}	160	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	1.5	A
Collector peak current	$i_{C(peak)}^{*1}$	3	A
Collector power dissipation	P_C^{*2}	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 10$ ms, Duty cycle $\leq 20\%$

2. Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)

Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	180	—	—	V	$I_C = 1 \text{ mA}$, $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	160	—	—	V	$I_C = 10 \text{ mA}$, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 1 \text{ mA}$, $I_C = 0$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{CB} = 160 \text{ V}$, $I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	60	—	200		$V_{CE} = 5 \text{ V}$, $I_C = 0.15 \text{ A}$
	h_{FE2}	30	—	—		$V_{CE} = 5 \text{ V}$, $I_C = 0.5 \text{ A}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	$I_C = 0.5 \text{ A}$, $I_B = 50 \text{ mA}$, Pulse
Base to emitter voltage	V_{BE}	—	—	0.9	V	$V_{CE} = 5 \text{ V}$, $I_C = 0.15 \text{ A}$, Pulse

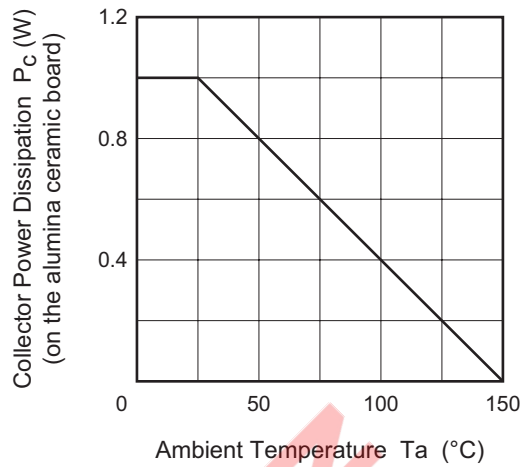
Note: 1. The 2SD1421 is grouped by h_{FE1} as follows.

Mark	ED	EE
h_{FE1}	60 to 120	100 to 200

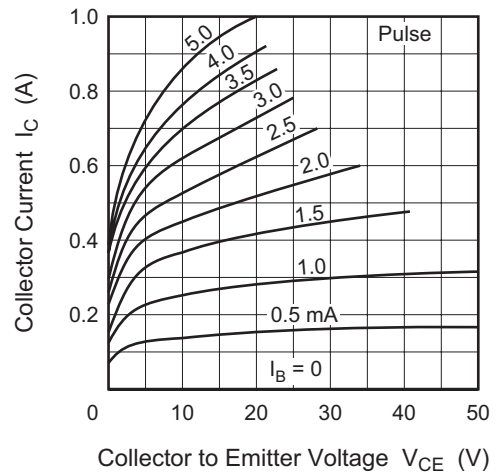
Not recommend
for new design

Main Characteristics

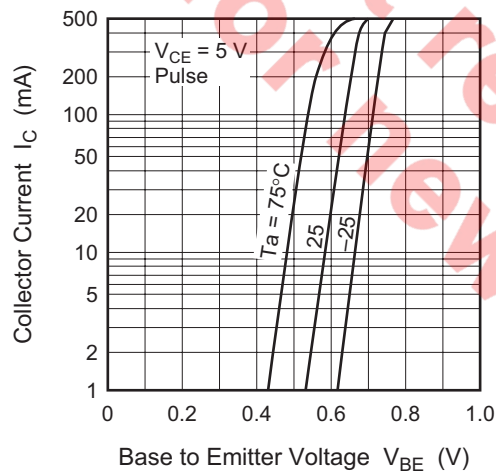
Maximum Collector Dissipation Curve



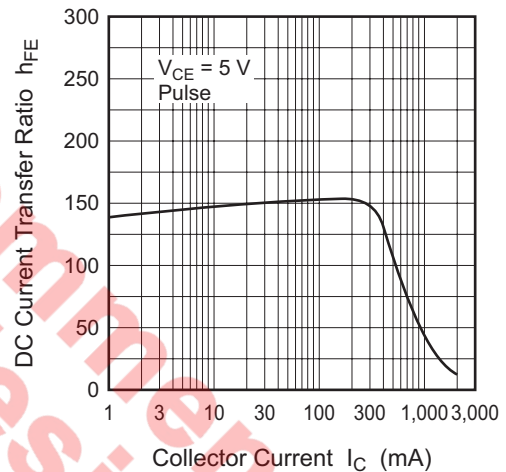
Typical Output Characteristics



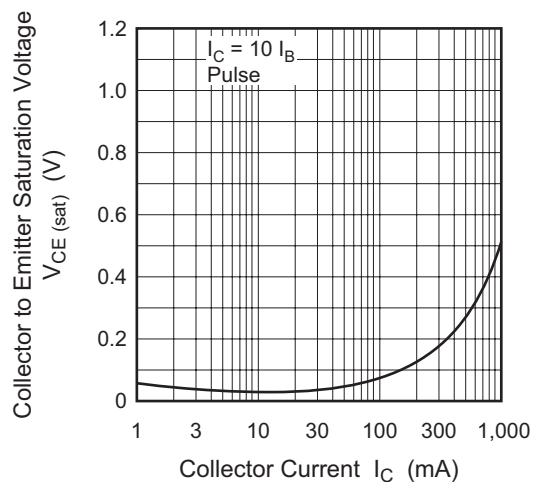
Typical Transfer Characteristics



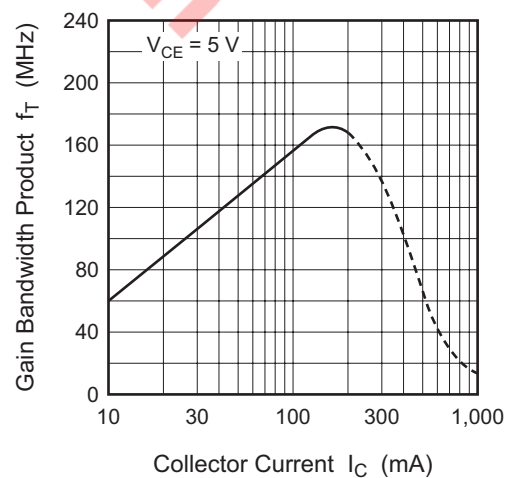
DC Current Transfer Ratio vs. Collector Current

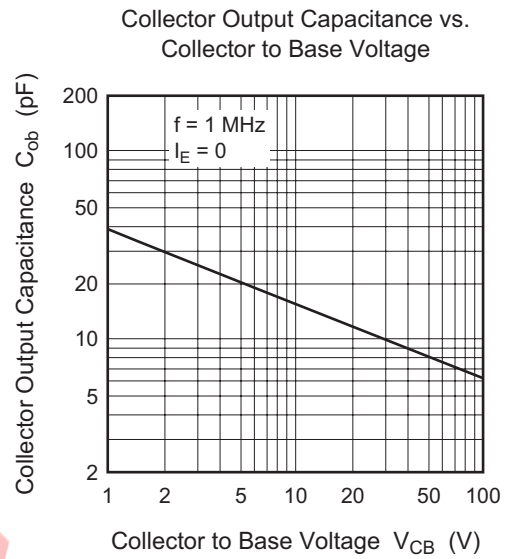


Collector to Emitter Saturation Voltage vs. Collector Current



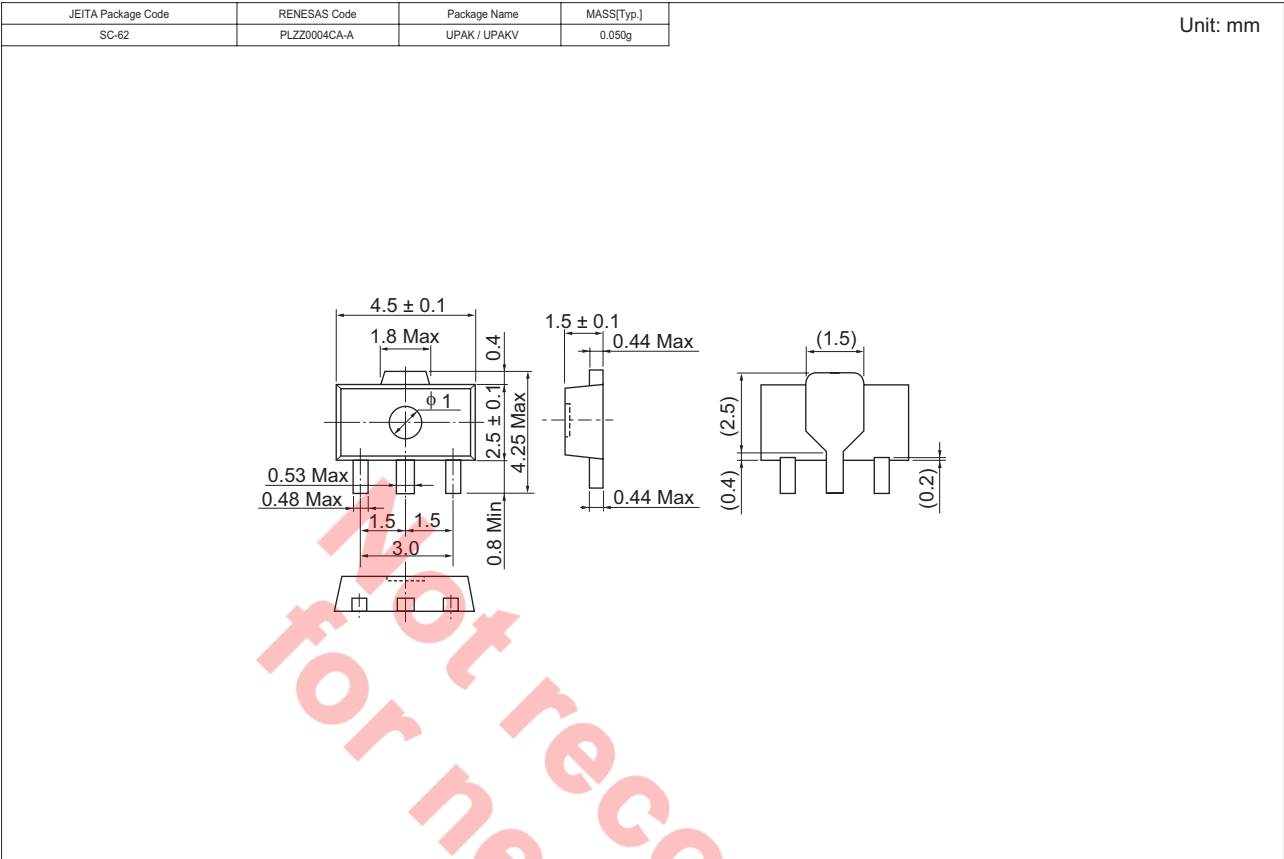
Gain Bandwidth Product vs. Collector Current





Not recommend
for new design

Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
2SD1421EDTR-E	1000	ϕ 178 mm Reel, 12 mm Emboss Taping
2SD1421EETR-E		

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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