

2SC458, 2SC2308

Silicon NPN Epitaxial

REJ03G0681-0200
(Previous ADE-208-1043)
Rev.2.00
Aug.10.2005

Application

- Low frequency amplifier
- Complementary pair with 2SA1029 and 2SA1030

Outline

RENESAS Package code: PRSS0003DA-A
(Package name: TO-92 (1))



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	2SC458	2SC2308	Unit
Collector to base voltage	V_{CBO}	30	55	V
Collector to emitter voltage	V_{CEO}	30	50	V
Emitter to base voltage	V_{EBO}	5	5	V
Collector current	I_C	100	100	mA
Emitter current	I_E	-100	-100	mA
Collector power dissipation	P_C	200	200	mW
Junction temperature	T_j	150	150	°C
Storage temperature	T_{stg}	-55 to +150	-55 to +150	°C

Electrical Characteristics

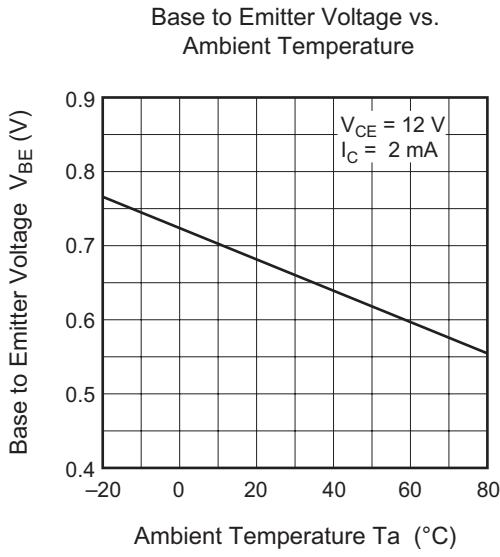
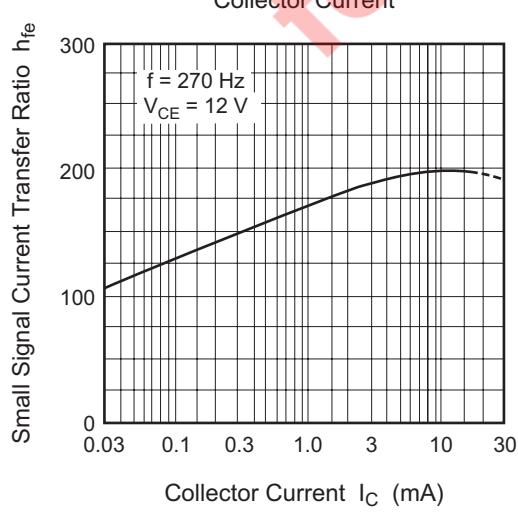
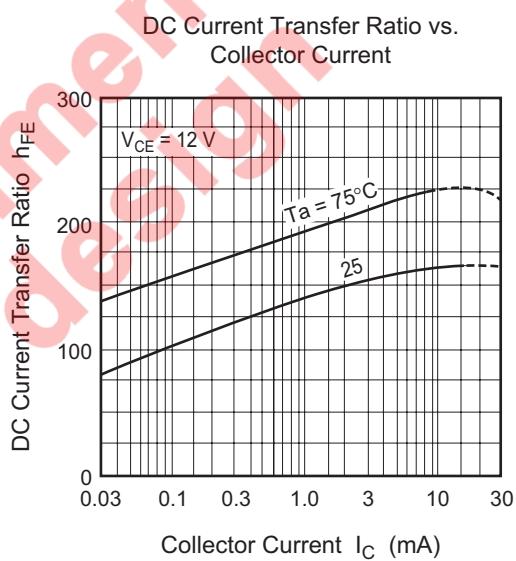
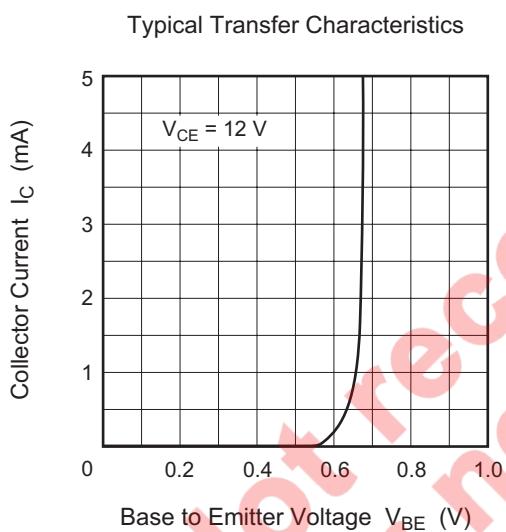
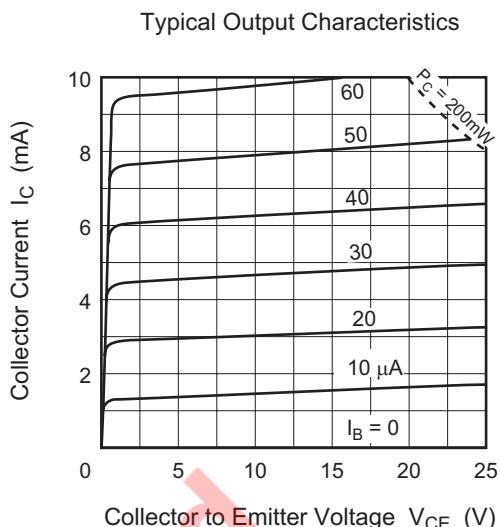
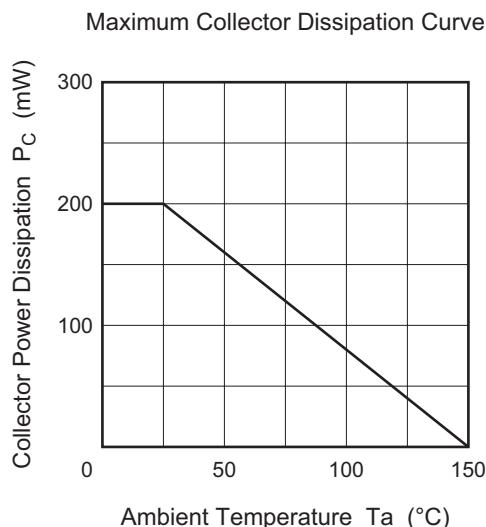
(Ta = 25°C)

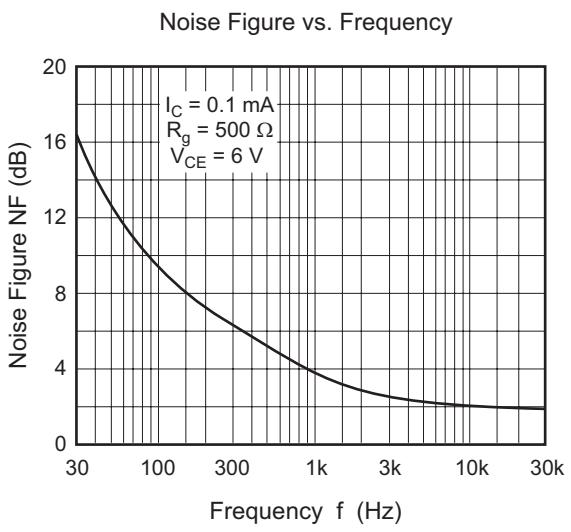
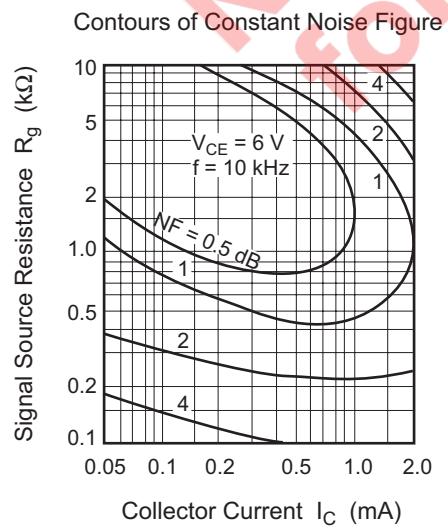
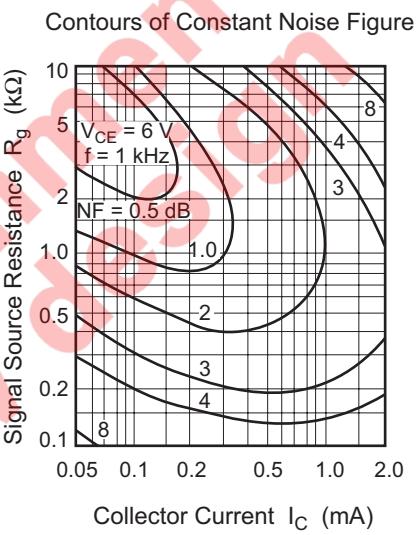
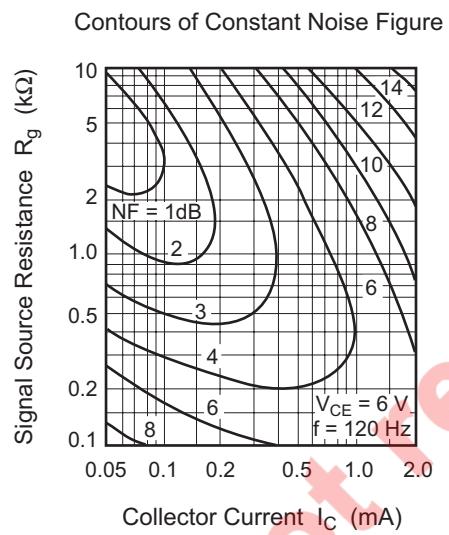
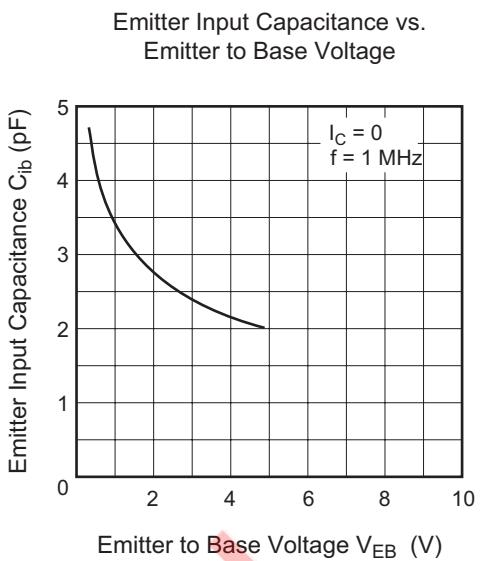
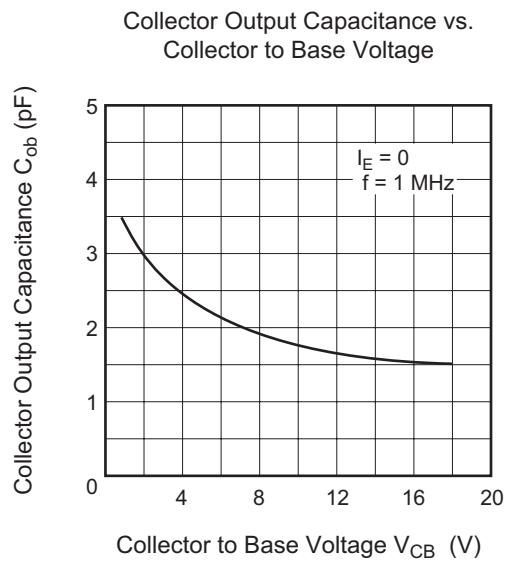
Item	Symbol	2SC458			2SC2308			Unit	Test conditions
		Min	Typ	Max	Min	Typ	Max		
Collector to base breakdown voltage	V _{(BR)CBO}	30	—	—	55	—	—	V	I _C = 10 μA, I _E = 0
Collector to emitter breakdown voltage	V _{(BR)CEO}	30	—	—	50	—	—	V	I _C = 1 mA, R _{BE} = ∞
Emitter to base breakdown voltage	V _{(BR)EBO}	5	—	—	5	—	—	V	I _E = 10 μA, I _C = 0
Collector cutoff current	I _{CBO}	—	—	0.5	—	—	0.5	μA	V _{CB} = 18 V, I _E = 0
Emitter cutoff current	I _{EBO}	—	—	0.5	—	—	0.5	μA	V _{EB} = 2 V, I _C = 0
DC current transfer ratio	h _{FE} * ¹	100	—	500	160	—	320		V _{CE} = 12 V, I _C = 2 mA
Collector to emitter saturation voltage	V _{CE(sat)}	—	—	0.2	—	—	0.2	V	I _C = 10 mA, I _B = 1 mA
Base to emitter voltage	V _{BE}	—	0.67	0.75	—	0.67	0.75	V	V _{CE} = 12 V, I _C = 2 mA
Gain bandwidth product	f _T	—	230	—	—	230	—	MHz	V _{CE} = 12 V, I _C = 2 mA
Collector output capacitance	C _{OB}	—	1.8	3.5	—	1.8	3.5	pF	V _{CB} = 10 V, I _E = 0, f = 1 MHz
Noise figure	NF	—	4	10	—	4	10	dB	V _{CE} = 6 V, I _C = 0.1 mA, f = 1 kHz, R _g = 500 Ω
Small signal input impedance	h _{ie}	—	16.5	—	—	16.5	—	kΩ	V _{CE} = 5V, I _C = 0.1mA, f = 270 Hz
Small signal voltage feedback ratio	h _{re}	—	70	—	—	70	—	× 10 ⁻⁶	
Small signal current transfer ratio	h _{fe}	—	130	—	—	130	—		
Small signal output admittance	h _{oe}	—	11.0	—	—	11.0	—	μS	

Note: 1. The 2SC458 is grouped by h_{FE} as follows.

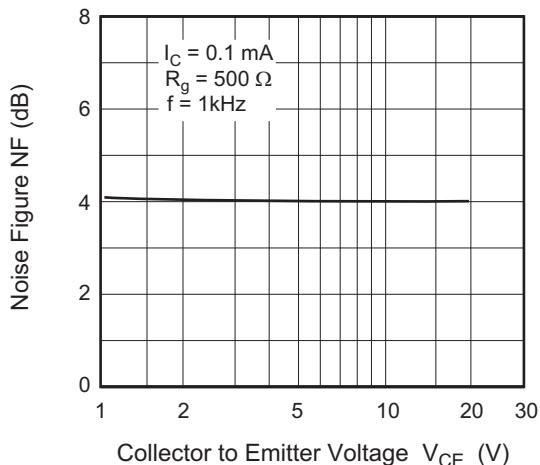
	B	C	D
2SC458	100 to 200	160 to 320	250 to 500

Main Characteristics

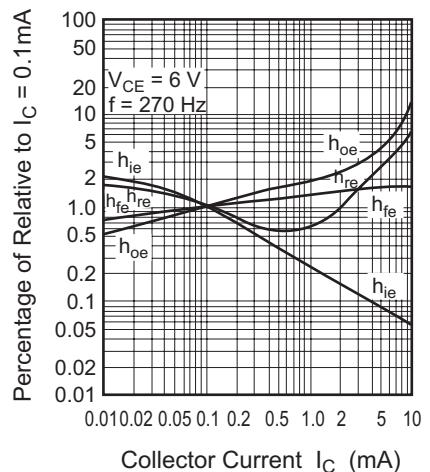




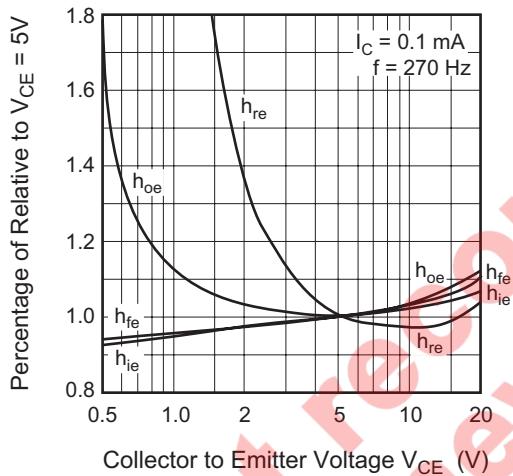
Noise Figure vs. Collector to Emitter Voltage



h Parameter vs. Collector Current

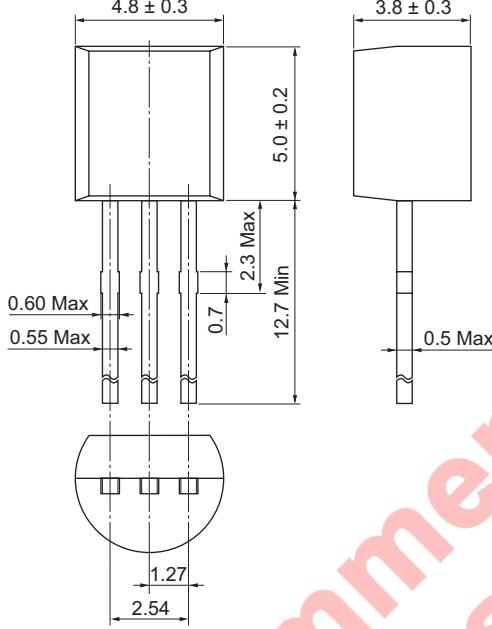


h Parameter vs. Collector to Emitter Voltage



Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS(Typ.)	Unit: mm
SC-43A	PRSS0003DA-A	TO-92(1) / TO-92(1)V	0.25g	



Ordering Information

Part Name	Quantity	Shipping Container
2SC458BTZ	2500	Hold Box, Radial Taping
2SC458CTZ		
2SC458DTZ		
2SC2308CTZ		

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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