

To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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PNP SILICON TRIPLE DIFFUSED TRANSISTOR

DESCRIPTION

The 2SA1412-Z is designed for High Voltage Switching, especially in Hybrid Integrated Circuits.

FEATURES

- High Voltage: $V_{CE0} = -400$ V
- High Speed: $t_r \leq 0.7$ μ s
- Complement to 2SC3631-Z

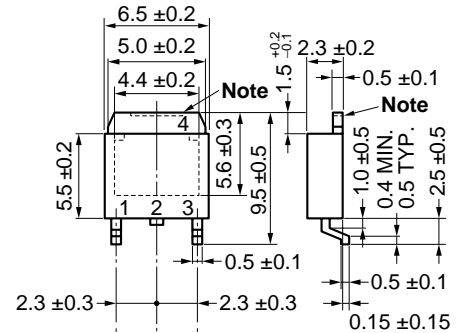
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Collector to base voltage	V_{CBO}	-400	V
Collector to emitter voltage	V_{CE0}	-400	V
Base to emitter voltage	V_{EBO}	-7	V
Collector current (DC)	$I_{C(DC)}$	-2.0	A
Collector current (pulse) ^{Note 1}	$I_{C(pulse)}$	-4.0	A
Total power dissipation ($T_A = 25^\circ\text{C}$) ^{Note 2}	P_T	2.0	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes 1. $PW \leq 10$ ms, Duty Cycle $\leq 50\%$

2. When mounted on ceramic substrate of $7.5\text{ cm}^2 \times 0.7$ mm

<R> PACKAGE DRAWING (Unit: mm)



1. Base
 2. Collector
 3. Emitter
 4. Collector Fin
- TO-252 (MP-3Z)

Note The depth of notch at the top of the fin is from 0 to 0.2 mm.

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ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

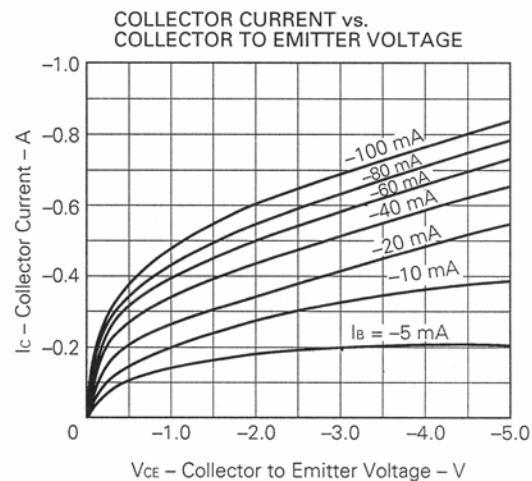
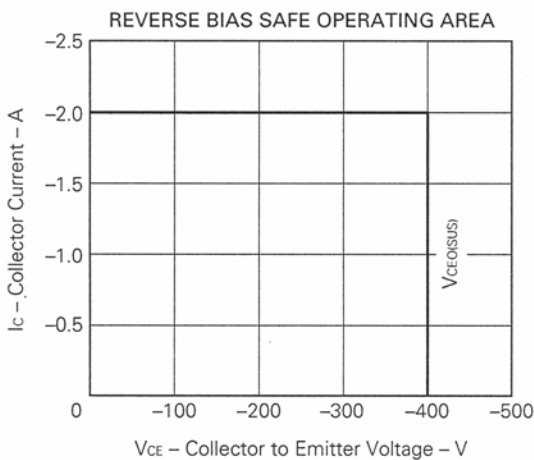
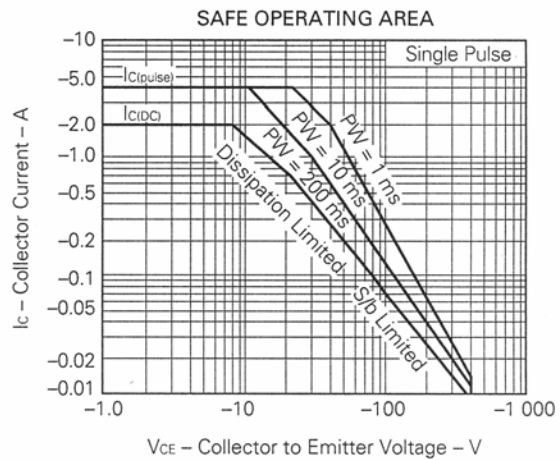
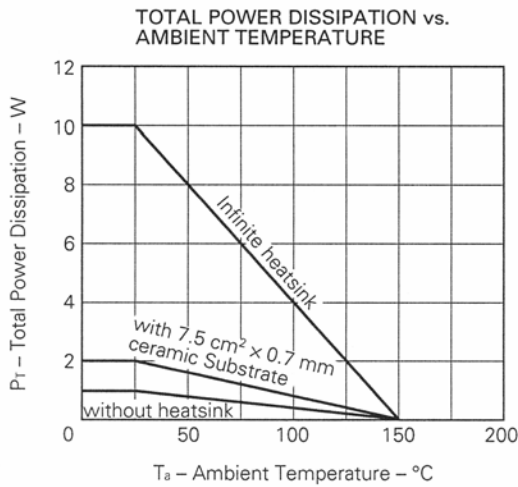
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I _{cBO}			-10	μA	V _{CE} = -400 V, I _E = 0
Emitter Cutoff Current	I _{EBO}			-10	μA	V _{EB} = -5.0 V, I _C = 0
DC Current Gain	h _{FE1} *	40	60	120		V _{CE} = -5.0 V, I _C = -0.1 A
DC Current Gain	h _{FE2} *	10	22			V _{CE} = -5.0 V, I _C = -1.0 A
Collector Saturation Voltage	V _{CE(sat)} *		-0.25	-0.5	V	I _C = -0.5 A, I _B = -0.1 A
Base Saturation Voltage	V _{BE(sat)} *		-0.85	-1.2	V	I _C = -0.5 A, I _B = -0.1 A
Gain Bandwidth Product	f _T		40		MHz	V _{CE} = -10 V, I _E = -100 mA
Output Capacitance	C _{ob}		30		pF	V _{CB} = -10 V, I _E = 0, f = 1.0 MHz
Turn-on Time	t _{on}		0.03	0.5	μs	I _C = -1.0 A, R _L = 150 Ω I _{B1} = -1B ₂ = -0.2 A, V _{CC} = -150 V
Storage Time	t _{stg}		1.4	2.0	μs	
Fall time	t _f		0.1	0.7	μs	

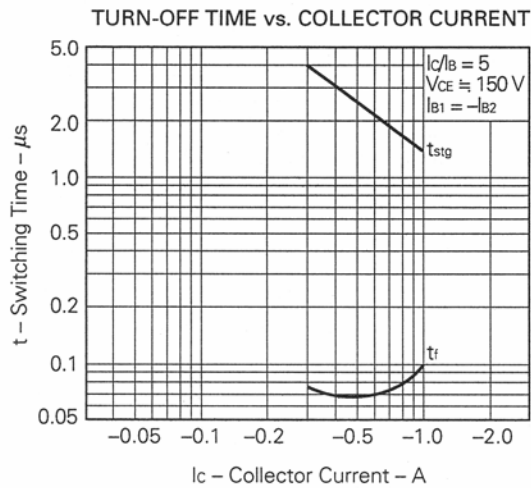
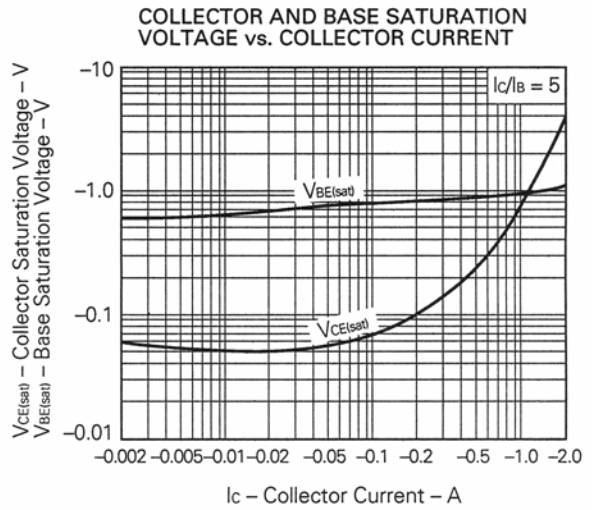
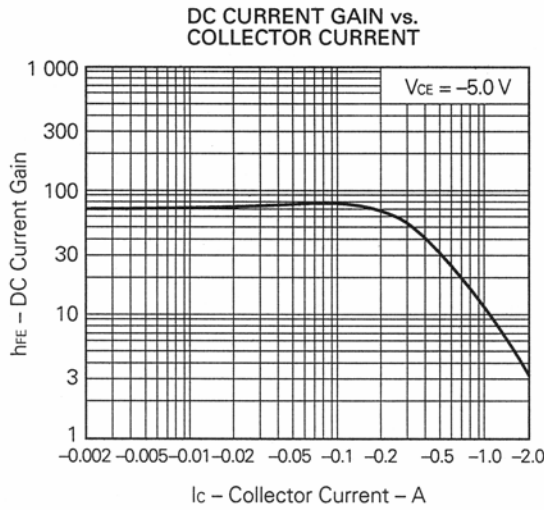
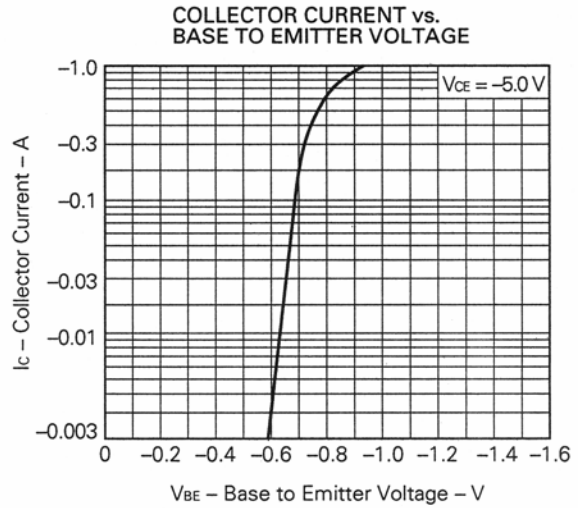
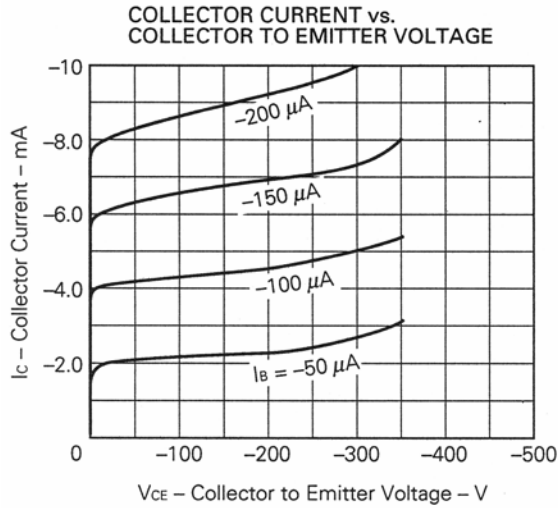
* Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2 %

h_{FE} Classification

MARKING	L	K
h _{FE1}	40 to 80	60 to 120

TYPICAL CHARACTERISTICS (T_a = 25 °C)





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