

PNP SILICON TRIPLE DIFFUSED TRANSISTOR

DESCRIPTION

The 2SA1400-Z is designed for High Voltage Switching, especially in Hybrid Integrated Circuits.

FEATURES

- High Voltage: $V_{CEO} = -400$ V
- High Speed: $t_r \leq 1.0$ μ s
- Complement to 2SC3588-Z

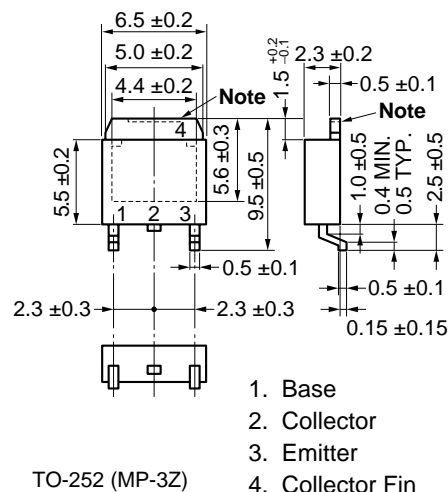
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Collector to base voltage	V_{CBO}	-400	V
Collector to emitter voltage	V_{CEO}	-400	V
Base to emitter voltage	V_{EBO}	-7	V
Collector current (DC)	$I_{C(DC)}$	-0.5	A
Collector current (pulse) ^{Note 1}	$I_{C(pulse)}$	-1.0	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. $PW \leq 300$ μ s, Duty Cycle $\leq 10\%$

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

<R> PACKAGE DRAWING (Unit: mm)



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

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ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

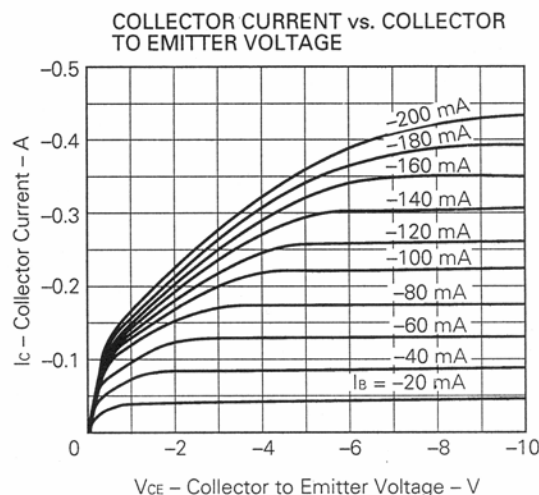
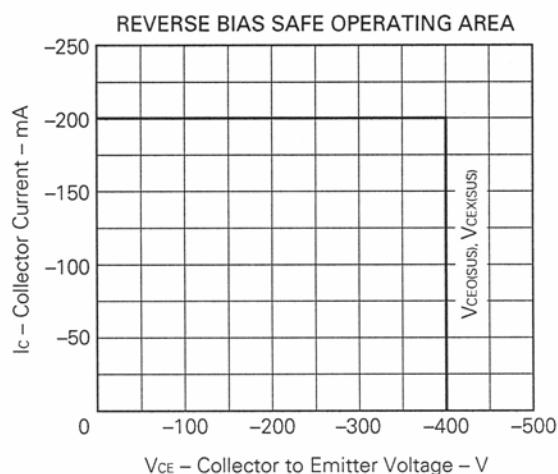
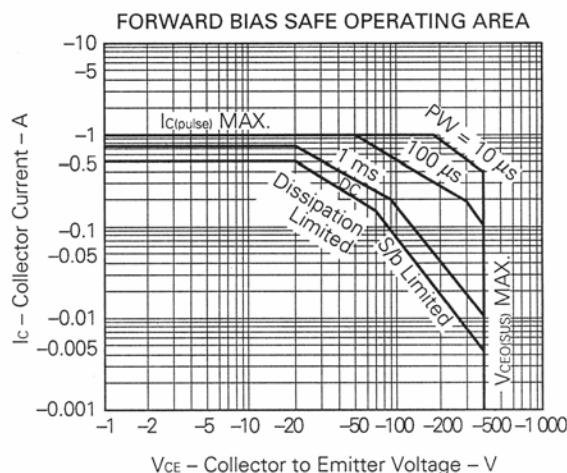
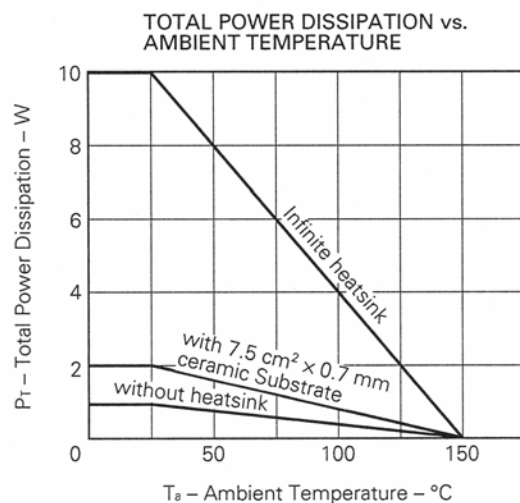
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			-100	μA	$V_{CB} = -400\text{ V}, I_E = 0$
Emitter Cutoff Current	I_{EBO}			-10	μA	$V_{EB} = -5.0\text{ V}, I_C = 0$
DC Current Gain	h_{FE}^*	30		200		$V_{CE} = -5.0\text{ V}, I_C = -50\text{ mA}$
Collector Saturation Voltage	$V_{CE(sat)}^*$			-1.0	V	$I_C = -100\text{ mA}, I_B = -10\text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}^*$			-1.2	V	$I_C = -100\text{ mA}, I_B = -10\text{ mA}$
Turn-on Time	t_{on}			1.0	μs	$I_C = -100\text{ mA}, R_L = 1.5\text{ k}\Omega$ $I_{B1} = -I_{B2} = -10\text{ mA}$ $V_{CC} = -150\text{ V}$ $PW \leq 50\text{ }\mu\text{s}, \text{Duty Cycle} \leq 2\%$
Storage Time	t_{stg}			5.0	μs	
Fall time	t_f			1.0	μs	

* Pulsed: $PW \leq 350\text{ }\mu\text{s}$, Duty Cycle $\leq 2\%$

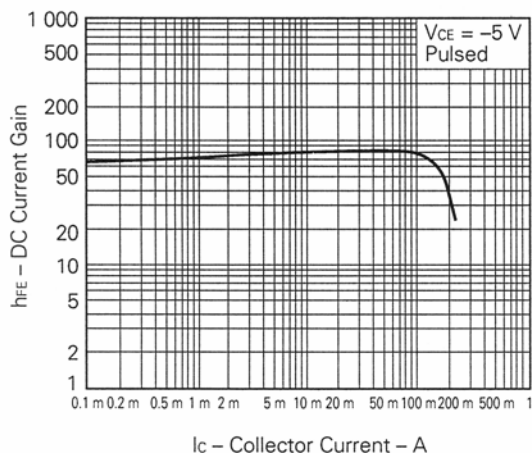
h_{FE} Classification

MARKING	N	M	L	K
h_{FE}	30 to 60	40 to 80	60 to 120	100 to 200

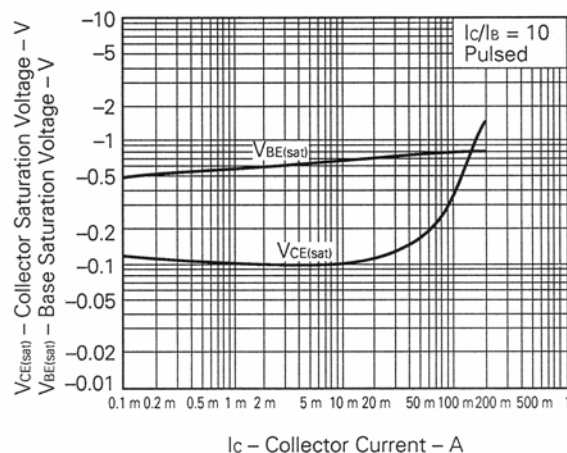
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



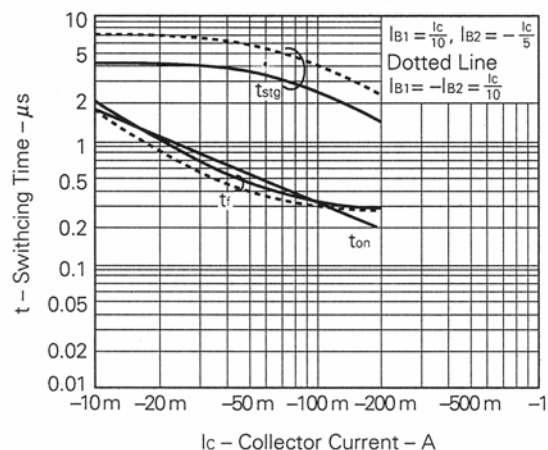
DC CURRENT GAIN vs.
COLLECTOR CURRENT



BASE COLLECTOR SATURATION
VOLTAGE vs. COLLECTOR CURRENT



TURN ON TIME, STORAGE TIME AND
FALL TIME vs. COLLECTOR CURRENT



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