

PNP SILICON TRIPLE DIFFUSED TRANSISTOR
MP-3

DESCRIPTION

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

FEATURES

- High Voltage : $V_{CE0} = -400$ V
- High Speed : $\tau_r \leq 1.0 \mu s$
- Complement to 2SC3588-Z

QUALITY GRADE

Standard

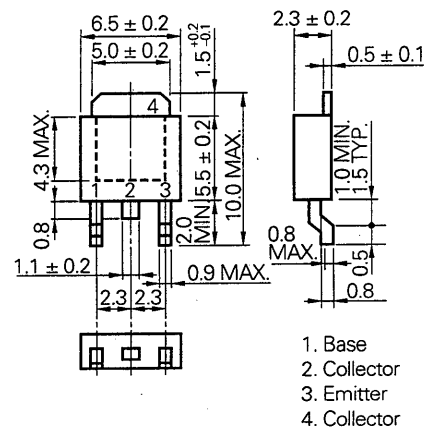
Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

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

Collector to Base Voltage	V_{CBO}	-400	V
Collector to Emitter Voltage	V_{CEO}	-400	V
Emitter to Base Voltage	V_{EBO}	-7	V
Collector Current (DC)	I_C	-0.5	A
Collector Current (Pulse)*	I_C	-1.0	A
Total Power Dissipation ($T_a = 25 \text{ }^\circ\text{C}$)**	P_T	2.0	W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 300 \mu s$, Duty Cycle $\leq 10 \%$

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

PACKAGE DIMENSIONS
(in millimeters)

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

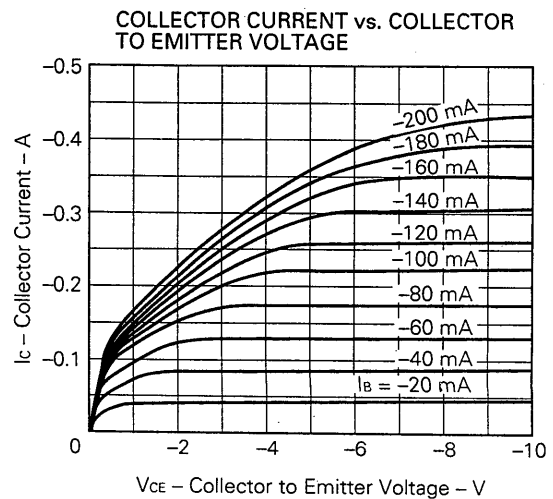
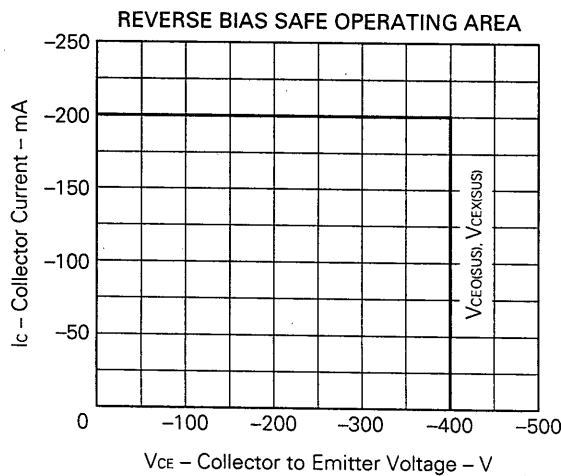
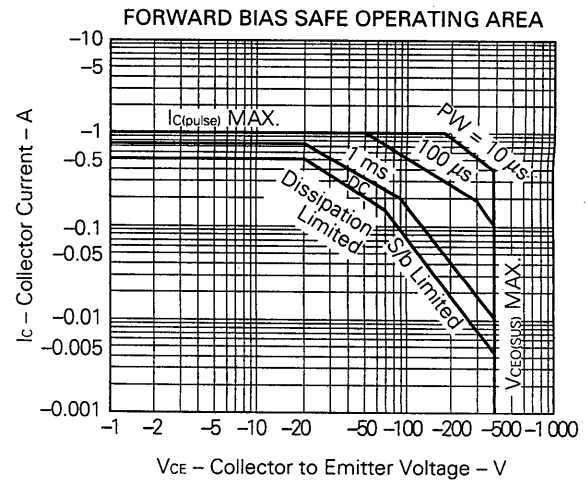
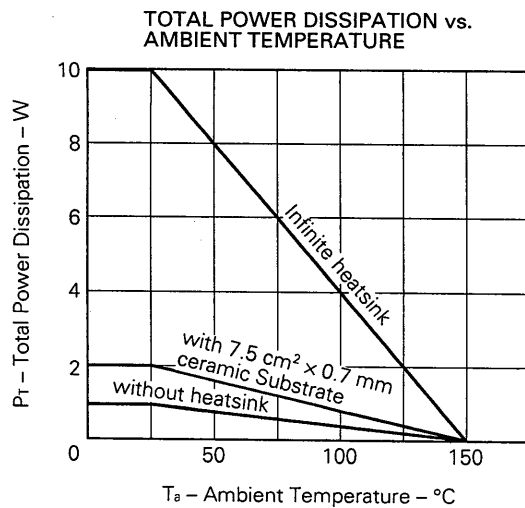
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I _{cBO}			-100	μA	V _{CB} = -400 V, I _E = 0
Emitter Cutoff Current	I _{EBO}			-10	μA	V _{EB} = -5.0 V, I _C = 0
DC Current Gain	h _{FE} *	30		200		V _{CE} = -5.0 V, I _C = -50 mA
Collector Saturation Voltage	V _{CE(sat)} *			-1.0	V	I _C = -100 mA, I _B = -10 mA
Base Saturation Voltage	V _{BE(sat)} *			-1.2	V	I _C = -100 mA, I _B = -10 mA
Turn-on Time	t _{on}			1.0	μs	I _C = -100 mA, R _L = 1.5 kΩ
Storage Time	t _{stg}			5.0	μs	I _{B1} = -I _{B2} = -10 mA, V _{CC} = -150 V
Fall time	t _r			1.0	μs	PW ≤ 50 μs, Duty Cycle ≤ 2 %

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

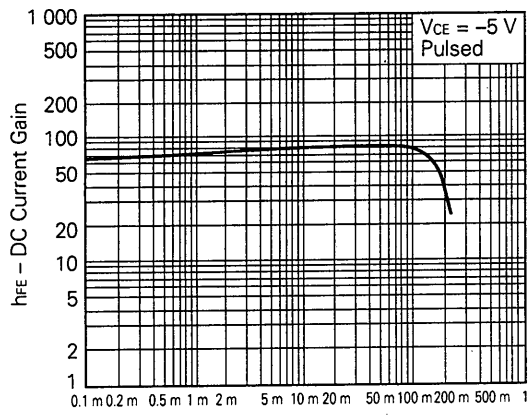
h_{FE} Classification

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

TYPICAL CHARACTERISTICS (T_a = 25 °C)

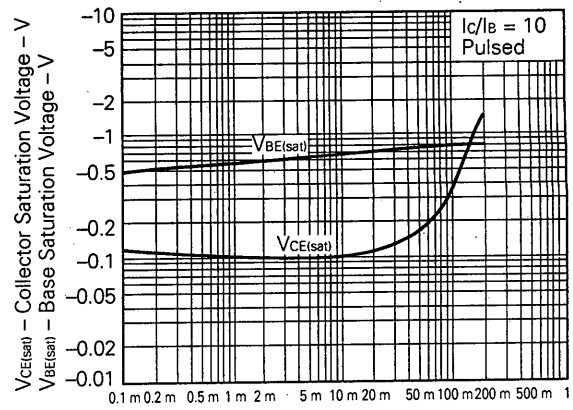


DC CURRENT GAIN vs. COLLECTOR CURRENT



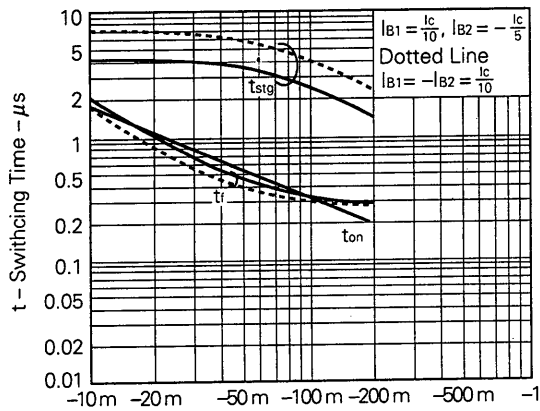
I_c - Collector Current - A

BASE COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



I_c - Collector Current - A

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



I_c - Collector Current - A

Reference

Application note name	No.
Quality control of NEC semiconductors devices.	TEI-1202
Quality control guide of semiconductors devices.	MEI-1202
Assembly manual of semiconductors devices.	IEI-1207
Design of Push-Pull Type Switching Regulators (Basic).	TEB-1002
Design of Push-Pull Type Switching Regulators (Applications).	TEB-1003
Optimum Base Drive Conditions of Switching Power Transistors.	TEB-1014

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Application examples recommended by NEC Corporation.

Standard: Computer, Office equipment, Communication equipment, Test and Measurement equipment, Machine tools, Industrial robots, Audio and Visual equipment, Other consumer products, etc.

Special: Automotive and Transportation equipment, Traffic control systems, Antidisaster systems, Anticrime systems, etc.