NEC

PNP SILICON TRANSISTOR
2SA1625

DESCRIPTION

The 2SA1625 is designed for general purpose amplifier and high speed switching applications.

FEATURES

- High Voltage.
- High Speed Switching.
- Low Collector Saturation Voltage.

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.

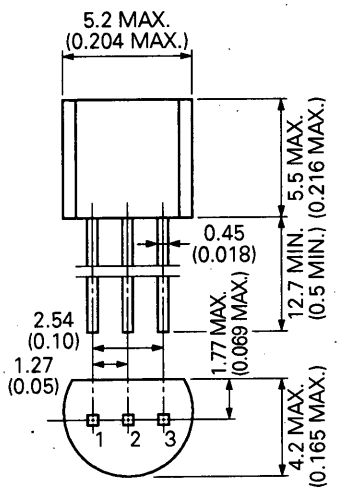
ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Collector to Base Voltage	V_{CBO}	−400	V
Collector to Emitter Voltage	V_{CEO}	−400	V
Emitter to Base Voltage	V_{EBO}	−7.0	V
Collector Current (DC)	I_C	−0.5	A
Collector Current (pulse)*	I_C	−1.0	A
Total Power Dissipation	P_T	750	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	−55 to +150	°C

* PW ≦ 2 ms, Duty Cycle ≦ 50 %

PACKAGE DIMENSIONS

in millimeters (inches)



1. EMITTER
2. COLLECTOR
3. BASE

EIAJ : SC-43B
JEDEC : TO-92
IEC : PA33

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ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Turn-on Time	t_{on}		0.3	1.0	μs	I_C = −100 mA, R_L = 1.5 kΩ, I_{B1} = −10 mA, I_{B2} = 10 mA, $V_{CC} \fallingdotseq$ − 150 V PW = 50 μs, Duty Cycle ≦ 2 %
Storage Time	t_{stg}		4.0	5.0	μs	
Fall-Time	t_f		0.3	1.0	μs	
Gain Bandwidth Product	f_T	20	40		MHz	V_{CE} = −10 V, I_E = 10 mA
Output Capacitance	C_{ob}		17	20	pF	V_{CB} = −10 V, I_E = 0, f = 1 MHz
DC Current Gain	h_{FE}**	40	80	200	—	V_{CE} = −5.0 V, I_C = −50 mA
Collector Saturation Voltage	$V_{CE(sat)}$**		0.35	0.5	V	I_C = −0.1 A, I_B = −10 mA
Base Saturation Voltage	$V_{BE(sat)}$**		−0.80	−1.2	V	I_C = −0.1 A, I_B = −10 mA
Collector Cutoff Current	I_{CBO}			10	μA	V_{CB} = −400 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			10	μA	V_{EB} = −5.0 V, I_C = 0
Collector to Emitter Voltage	V_{CEO}	−400			V	I_C = −1.0 mA, R_{BE} = ∞

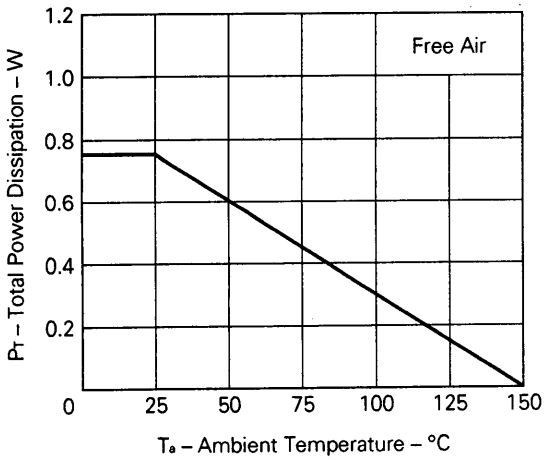
** Pulsed PW ≦ 350 μs, Duty Cycle ≦ 2 %

Classification of h_{FE}

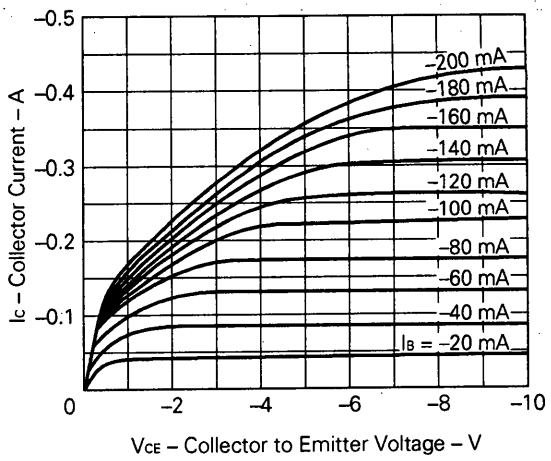
Rank	M	L	K
Range	40 to 80	60 to 120	100 to 200

TYPICAL CHARACTERISTICS (T_a = 25 °C)

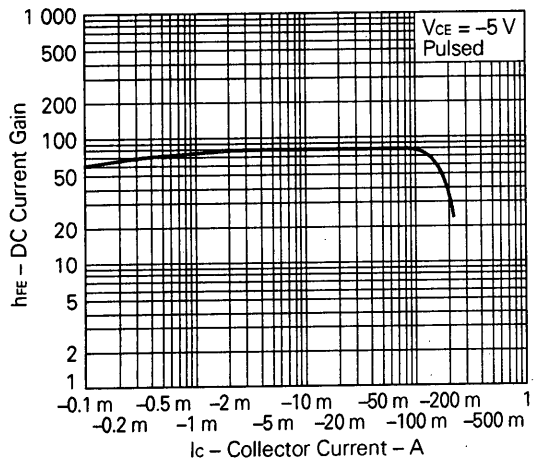
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



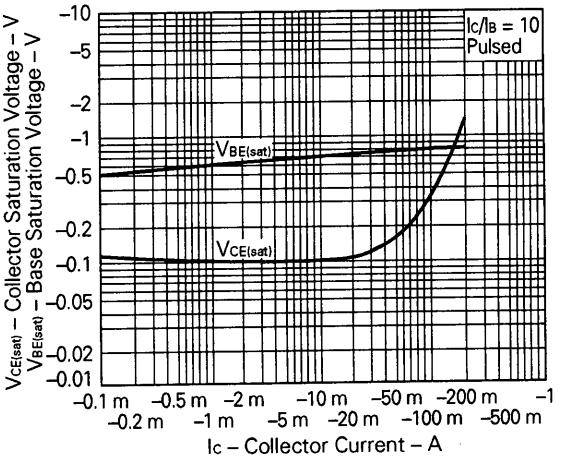
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



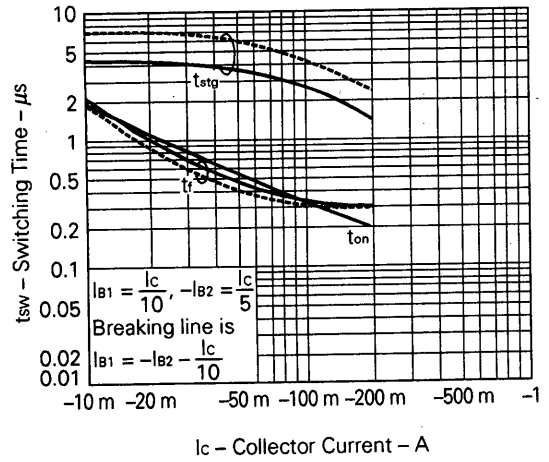
DC CURRENT GAIN vs. COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



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



REFERENCE APPLICATION NOTE

ASSEMBLY MANUAL FOR SEMICONDUCTOR DEVICES	IEI-1207
QUALITY CONTROL OF NEC SEMICONDUCTOR DEVICES	TEI-1202
QUALITY CONTROL GUIDE OF SEMICONDUCTOR DEVICES	MEI-1202

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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.

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