

Phase-out/Discontinued

**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.

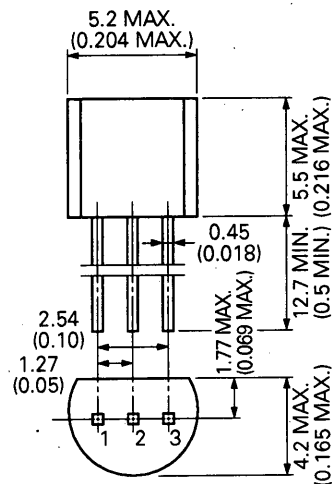
**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub> = 25 °C)**

Collector to Base Voltage	V <sub>CBO</sub>	-400	V
Collector to Emitter Voltage	V <sub>CEO</sub>	-400	V
Emitter to Base Voltage	V <sub>EBO</sub>	-7.0	V
Collector Current (DC)	I <sub>c</sub>	-0.5	A
Collector Current (pulse)*	I <sub>c</sub>	-1.0	A
Total Power Dissipation	P <sub>T</sub>	750	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

\* PW ≤ 2 ms, Duty Cycle ≤ 50 %

**PACKAGE DIMENSIONS**

in millimeters (inches)



- 1. EMITTER EIAJ : SC-43B
- 2. COLLECTOR JEDEC : TO-92
- 3. BASE IEC : PA33

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub> = 25 °C)**

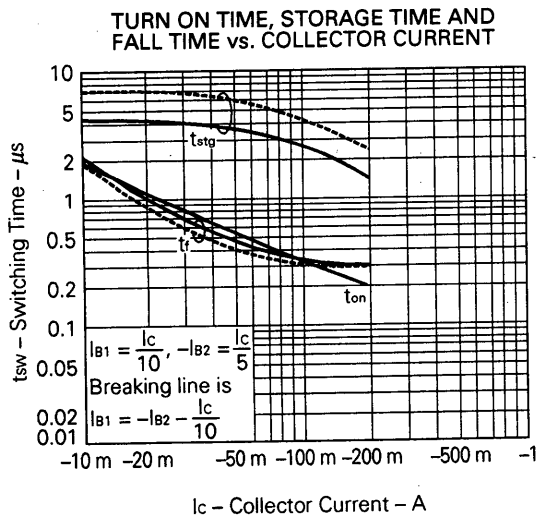
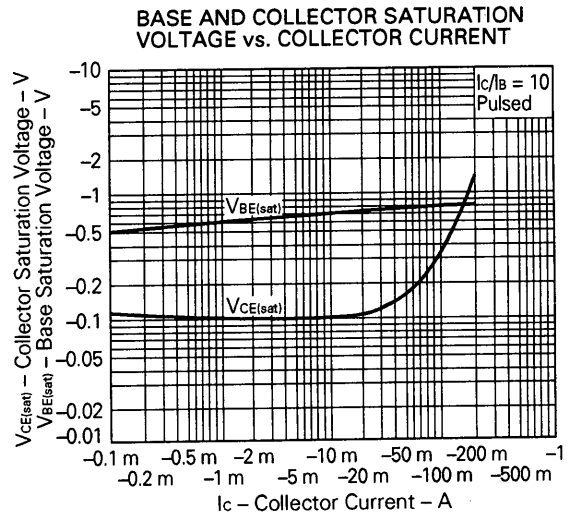
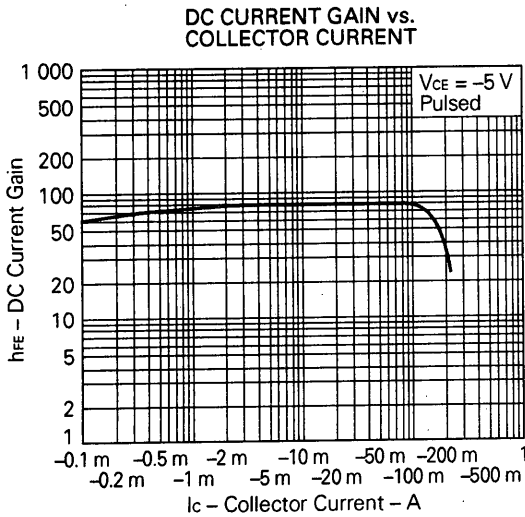
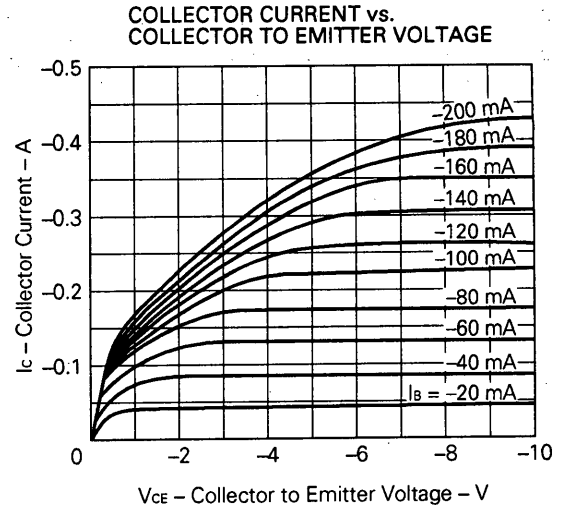
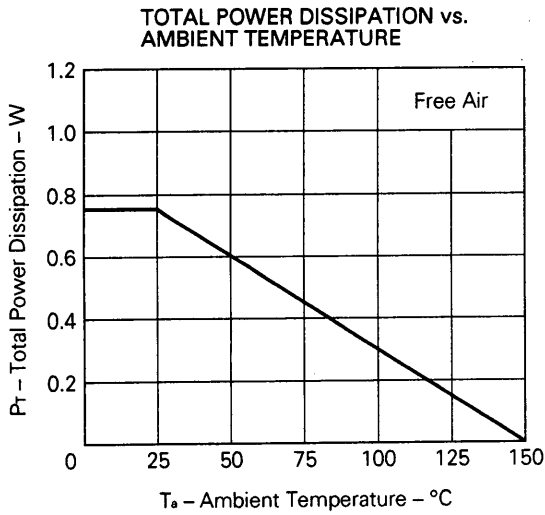
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Turn-on Time	t <sub>on</sub>		0.3	1.0	μs	I <sub>c</sub> = -100 mA, R <sub>L</sub> = 1.5 kΩ, I <sub>B1</sub> = -10 mA, I <sub>B2</sub> = 10 mA, V <sub>CC</sub> = -150 V PW = 50 μs, Duty Cycle ≤ 2 %
Storage Time	t <sub>stg</sub>		4.0	5.0	μs	
Fall-Time	t <sub>f</sub>		0.3	1.0	μs	
Gain Bandwidth Product	f <sub>r</sub>	20	40		MHz	V <sub>CE</sub> = -10 V, I <sub>E</sub> = 10 mA
Output Capacitance	C <sub>ob</sub>		17	20	pF	V <sub>CB</sub> = -10 V, I <sub>E</sub> = 0, f = 1 MHz
DC Current Gain	h <sub>FE</sub> **	40	80	200	—	V <sub>CE</sub> = -5.0 V, I <sub>c</sub> = -50 mA
Collector Saturation Voltage	V <sub>CE(sat)**</sub>		0.35	0.5	V	I <sub>c</sub> = -0.1 A, I <sub>B</sub> = -10 mA
Base Saturation Voltage	V <sub>BE(sat)**</sub>		-0.80	-1.2	V	I <sub>c</sub> = -0.1 A, I <sub>B</sub> = -10 mA
Collector Cutoff Current	I <sub>CBO</sub>			10	μA	V <sub>CB</sub> = -400 V, I <sub>E</sub> = 0
Emitter Cutoff Current	I <sub>EBO</sub>			10	μA	V <sub>EB</sub> = -5.0 V, I <sub>c</sub> = 0
Collector to Emitter Voltage	V <sub>CEO</sub>	-400			V	I <sub>c</sub> = -1.0 mA, R <sub>BE</sub> = ∞

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

**Classification of h<sub>FE</sub>**

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

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



**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.