

**Silicon PNP Power Transistors**

**2SA1012**

**DESCRIPTION**

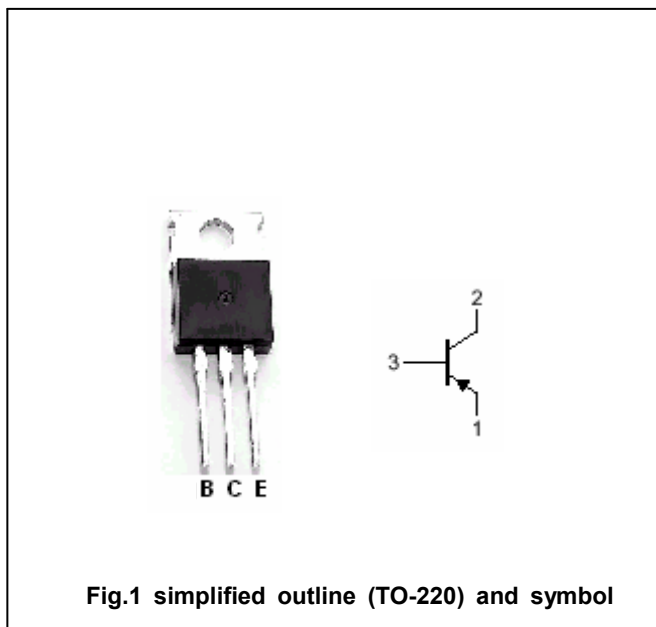
- With TO-220 package
- Complement to type 2SD2562
- Low saturation voltage
- High speed switching time

**APPLICATIONS**

- High current switching applications

**PINNING**

PIN	DESCRIPTION
1	Emitter
2	Collector;connected to mounting base
3	Base



**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	-60	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	-50	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	-5	V
I <sub>C</sub>	Collector current		-5	A
P <sub>T</sub>	Total power dissipation	T <sub>C</sub> =25°C	25	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-55~150	°C

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## CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =-10mA, I <sub>B</sub> =0	-50			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =-3A; I <sub>B</sub> =-0.15A			-0.4	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =-3A; I <sub>B</sub> =-0.15A			-1.2	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =-50V; I <sub>E</sub> =0			-1	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =-5V; I <sub>C</sub> =0			-1	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =-1A; V <sub>CE</sub> =-1V	70		240	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =-3A; V <sub>CE</sub> =-1V	30			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =-1A; V <sub>CE</sub> =-4V		60		MHz
C <sub>ob</sub>	Output capacitance	f=1MHz; V <sub>CB</sub> =10V		170		pF

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =-3A; I <sub>B1</sub> =-I <sub>B2</sub> =-0.15A R <sub>L</sub> =10Ω, V <sub>CC</sub> =30V		0.1		μs
t <sub>s</sub>	Storage time			1.0		μs
t <sub>f</sub>	Fall time			0.1		μs

◆ h<sub>FE-1</sub> Classifications

O	Y
70-140	120-240



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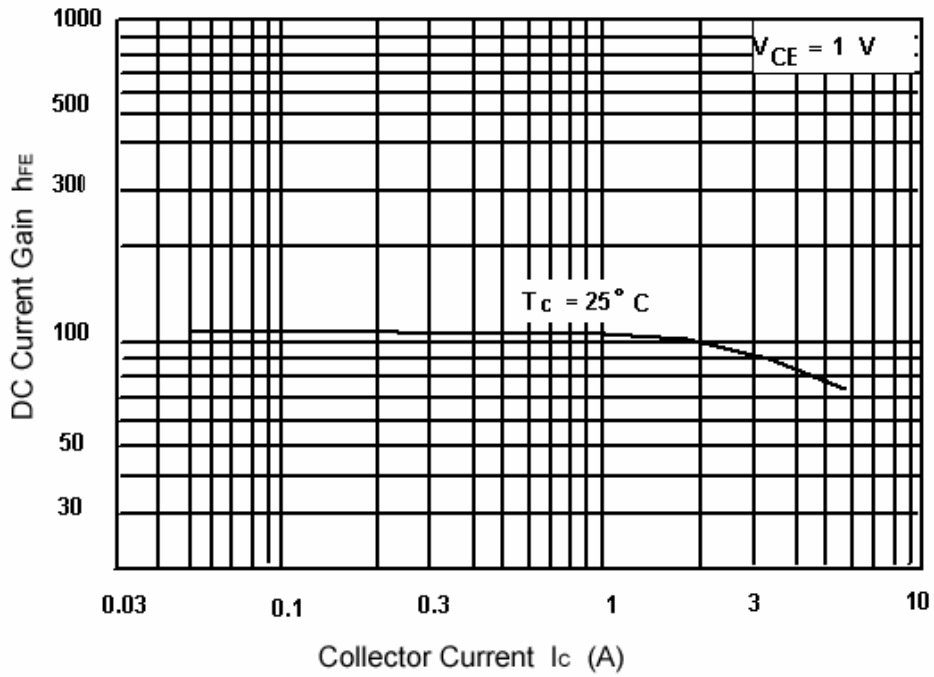


Fig.3 DC current Gain

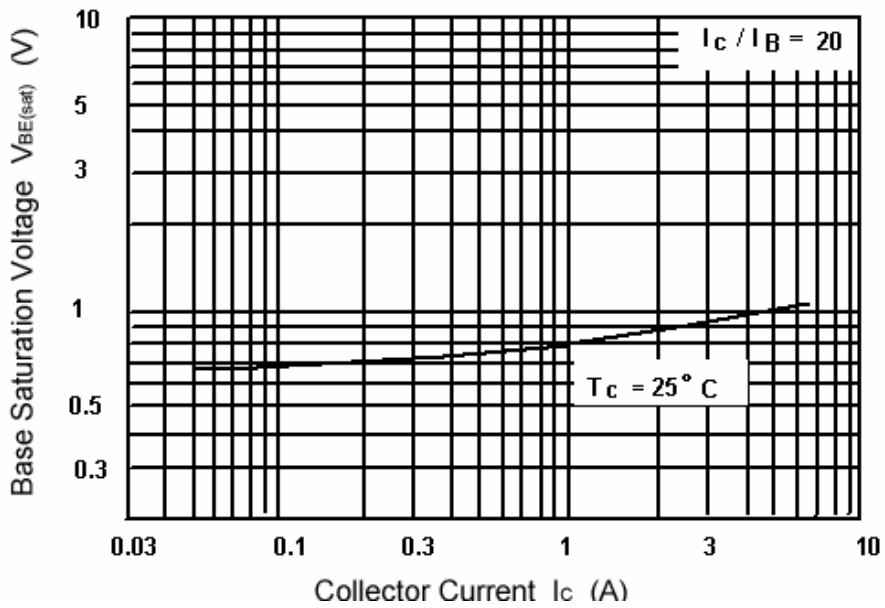


Fig.4 Base-Emitter Saturation Voltage

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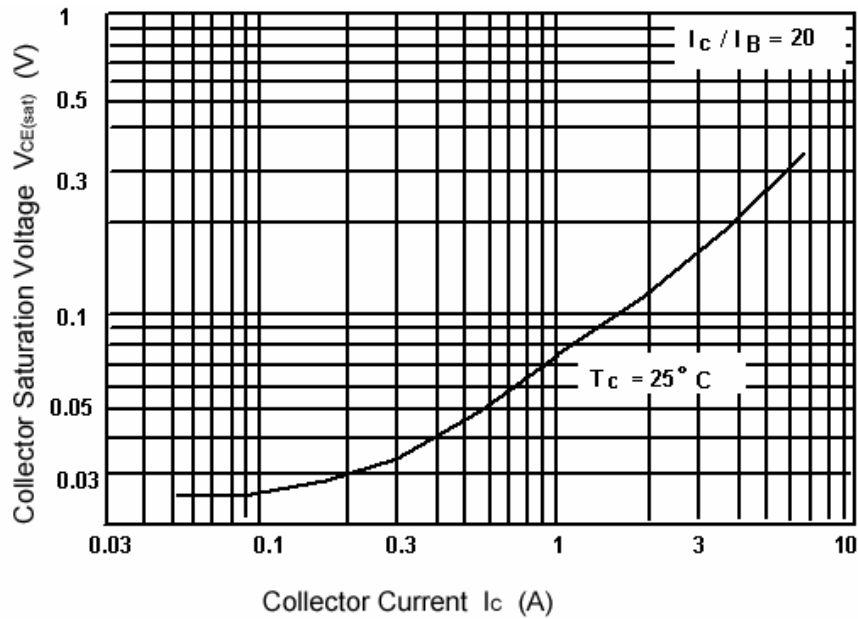


Fig.5 Collector-Emitter Saturation Voltage

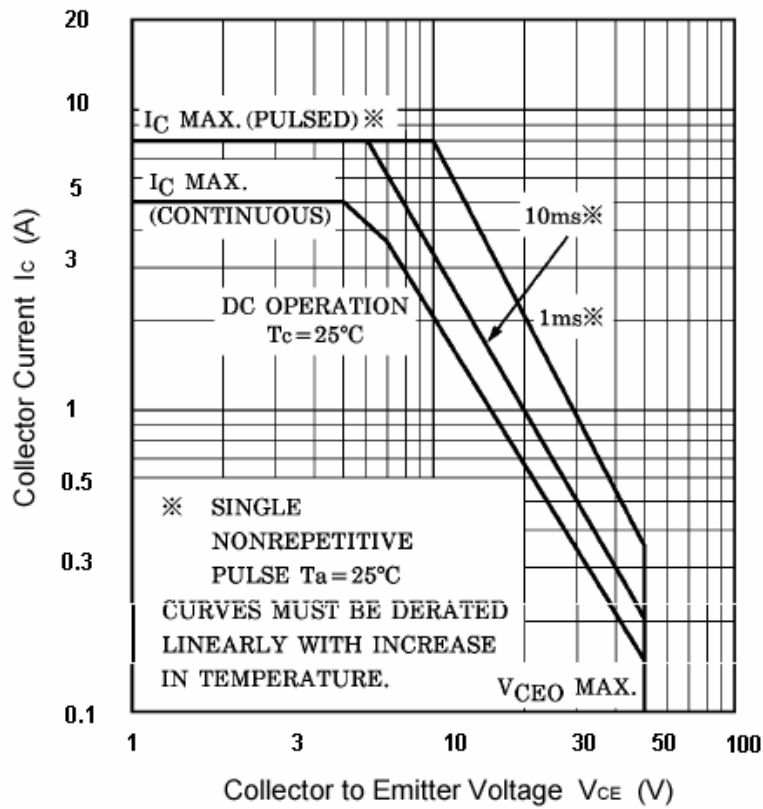


Fig.6 Safe Operating Area