Silicon NPN Power Transistors 2SD1212

DESCRIPTION

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·With TO-220 package
·Low collector saturation voltage
·Large current capacity.
·Complement to type 2SB903

APPLICATIONS

·Suitable for relay drivers, high-speed inverters,converters, and other general large current switching applications.
·High-speed switching applications

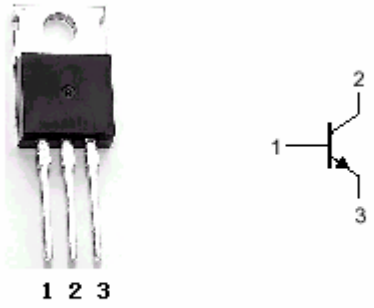

Fig.1 simplified outline (TO-220C) and symbol

PINNING

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

Absolute maximum ratings (Ta=25□)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	60	V
V_{CEO}	Collector-emitter voltage	Open base	30	V
V_{EBO}	Emitter-base voltage	Open collector	6	V
I_C	Collector current		12	A
I_{CM}	Collector current-peak		20	A
P_C	Collector power dissipation		1.75	W
		T_C=25□	35	
T_j	Junction temperature		150	□
T_{stg}	Storage temperature		-55~150	□

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CHARACTERISTICS

Tj=25□ unless otherwise specified

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SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=1mA ; I_E=0	60			V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=1mA ;R_{BE}=∞	30			V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=1mA ; I_C=0	6			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=5A, I_B=0.25A			0.4	V
I_{CBO}	Collector cut-offcurrent	V_{CB}=40V;I_E=0			0.1	mA
I_{EBO}	Emitter cut-offcurrent	V_{EB}=4V;I_C=0			0.1	mA
h_{FE-1}	DC current gain	I_C=1A ; V_{CE}=2V	70		280	
h_{FE-2}	DC current gain	I_C=6A ; V_{CE}=2V	30			
f_T	Transition frequency	I_C=1A ; V_{CE}=5V		120		MHz
Switching times						
t_{on}	Turn-on time	I_C=5A ;I_{B1}=0.5A I_{B2}=-0.5A;		0.20		μs
t_{stg}	Storage time			0.50		μs
t_f	Fall time			0.03		μs

◆ **h_{FE-1} classifications**

Q	R	S
70-140	100-200	140-280

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PACKAGE OUTLINE

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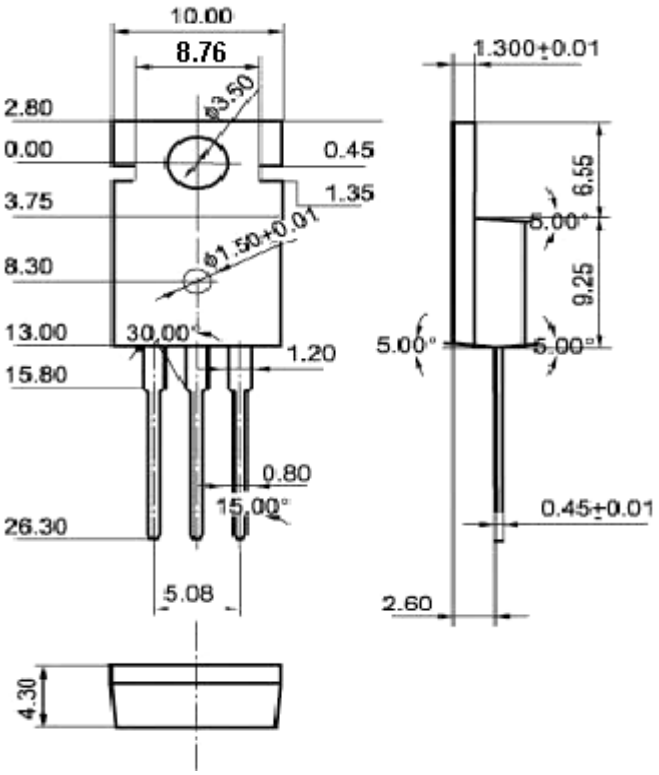

Fig.2 outline dimensions (unindicated tolerance:±0.10 mm)

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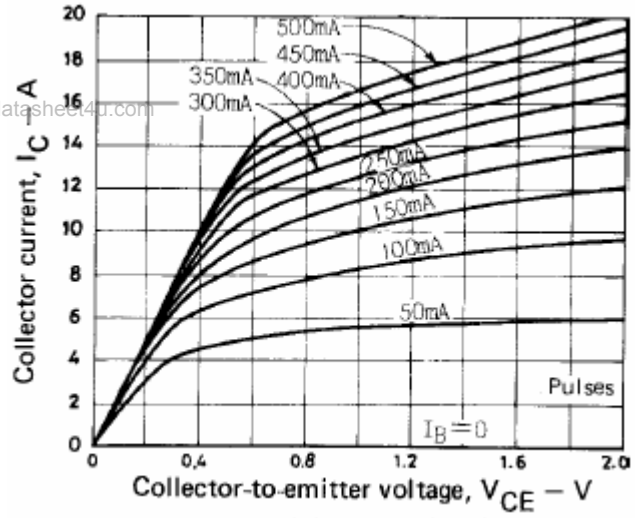

Fig.3 Static Characteristic

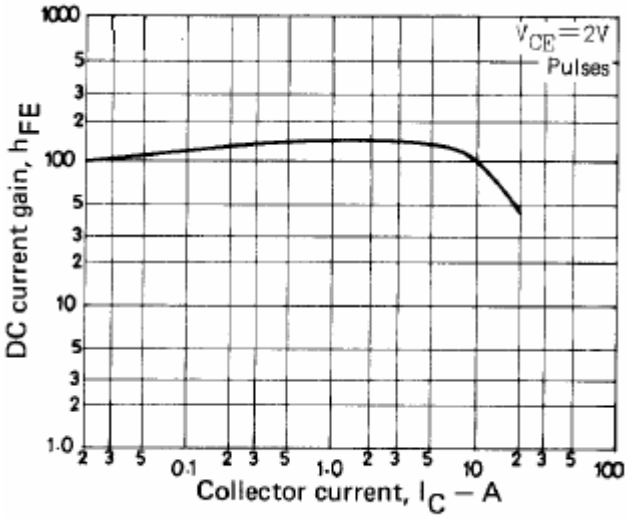

Fig.4 DC current Gain

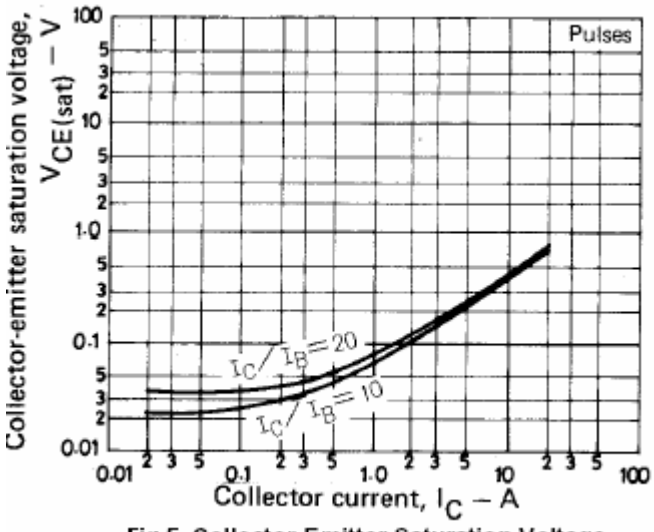

Fig.5 Collector-Emitter Saturation Voltage

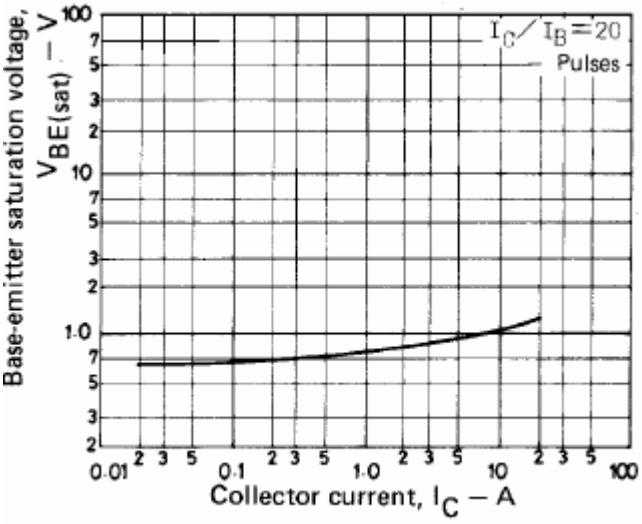

Fig.6 Base-Emitter Saturation Voltage

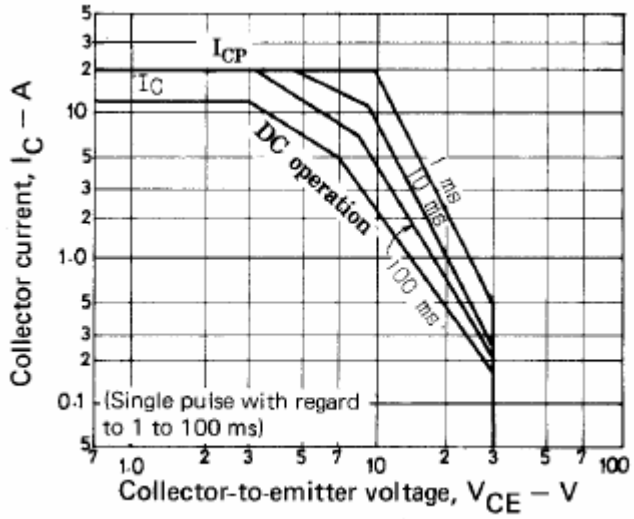

Fig.7 Safe Operating Area

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