Silicon NPN Power Transistors 2SD1406

DESCRIPTION

·With TO-220Fa package
·Collector power dissipation
:P_C=25W@T_C=25□
·Low collector saturation voltage
·Complement to type 2SB1015

APPLICATIONS

·For audio frequency power amplifier applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

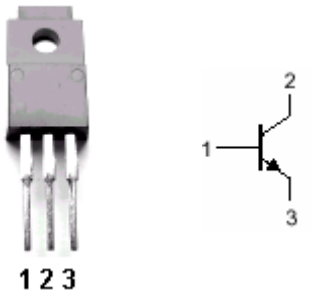

Fig.1 simplified outline (TO-220Fa) and symbol

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	60	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		3	A
I_B	Base current		0.5	A
P_C	Collector power dissipation	T_a=25□	2.0	W
		T_C=25□	25	
T_j	Junction temperature		150	□
T_{stg}	Storage temperature		-55~150	□

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CHARACTERISTICS

Tj=25□ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=50mA; I_B=0	60			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=3A; I_B=0.3A		0.25	1.0	V
V_{BE}	Base-emitter voltage	I_C=0.5A ; V_{CE}=5V		0.7	1.0	V
I_{CBO}	Collector cut-off current	V_{CB}=60V; I_E=0			100	μA
I_{EBO}	Emitter cut-off current	V_{EB}=7V; I_C=0			100	μA
h_{FE-1}	DC current gain	I_C=0.5A ; V_{CE}=5V	60		300	
h_{FE-2}	DC current gain	I_C=3A ; V_{CE}=5V	20			
f_T	Transition frequency	I_C=0.5A; V_{CE}=5V		3		MHz
C_{OB}	Collector output capacitance	I_E=0 ;f=1MHz ; V_{CB}=10V		70		pF
Switching times						
t_{on}	Trun-on time	R_L=15Ω;V_{CC}=30V I_{B1}=-I_{B2}=0.2A		0.8		μs
t_s	Storage time			1.5		μs
t_f	Fall time			0.8		μs

◆ **h_{FE-1} Classifications**

O	Y	GR
60-120	100-200	150-300

PACKAGE OUTLINE

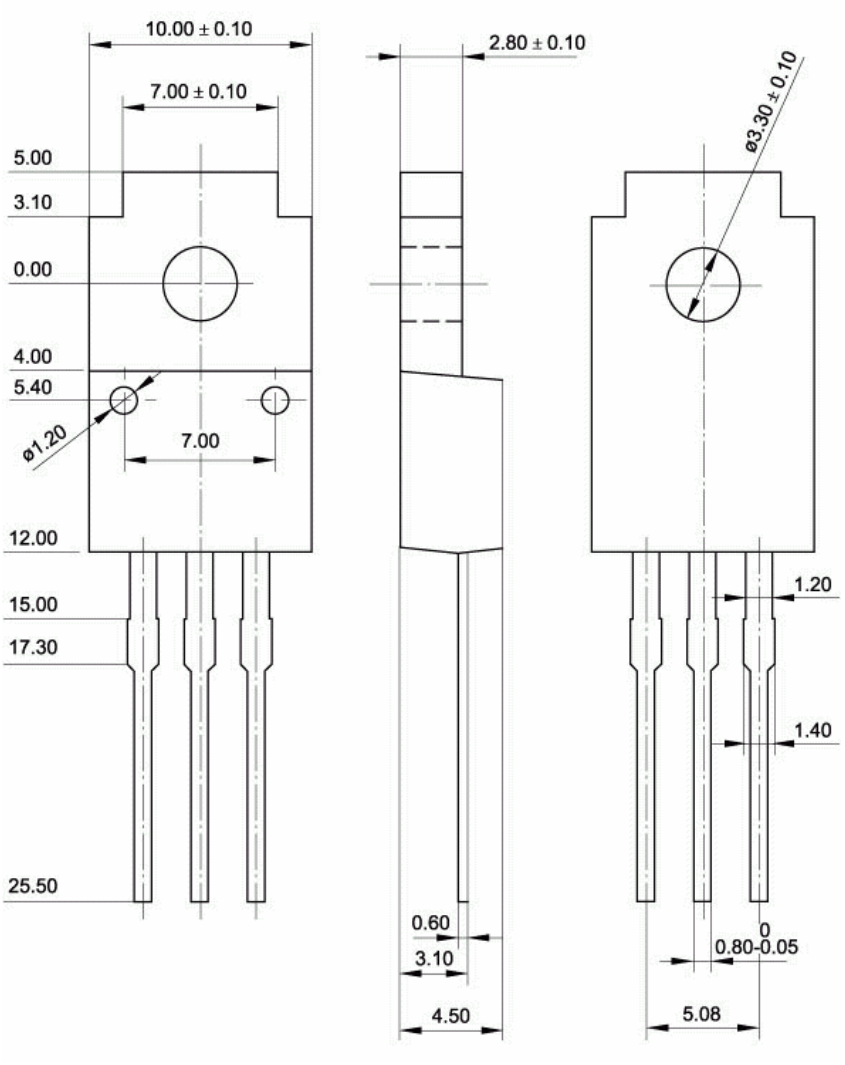

Fig.2 Outline dimensions (unindicated tolerance: ±0.15 mm)

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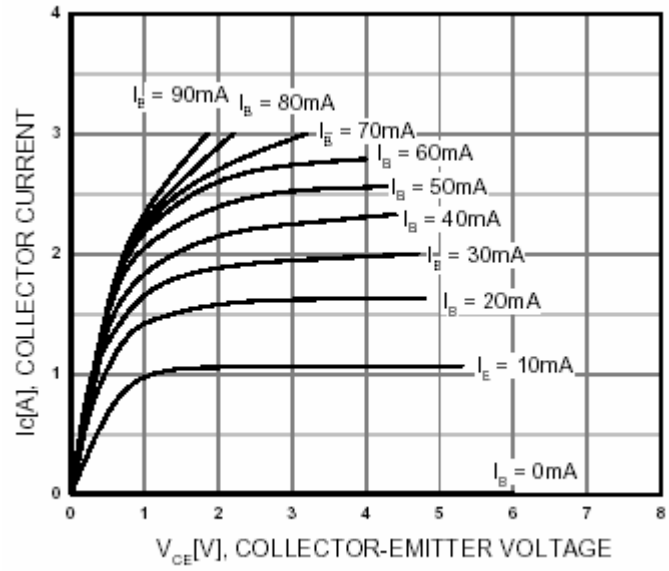

Fig.3 Static Characteristic

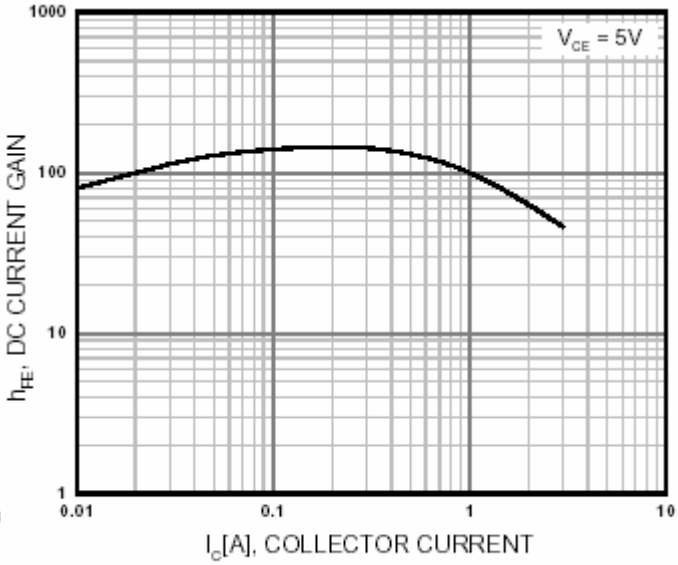

Fig.4 DC current Gain

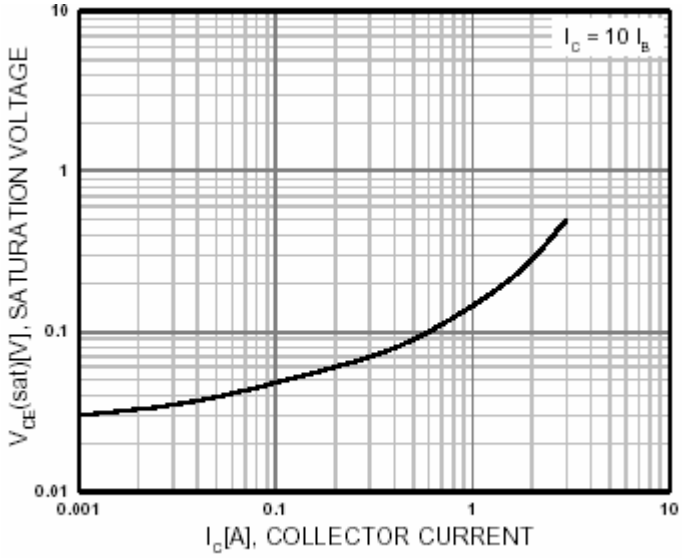

Fig.5 Collector-Emitter Saturation Voltage

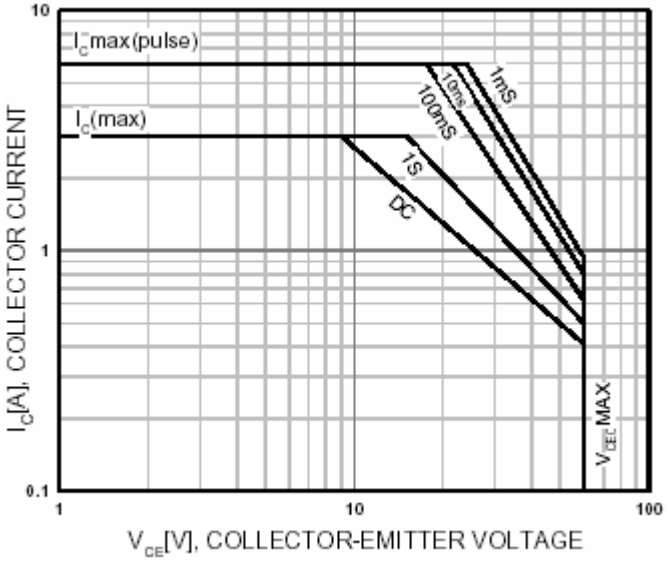

Fig.6 Safe Operating Area