Silicon NPN Power Transistors 2SD1411

DESCRIPTION

·With TO-220Fa package
·Low saturation voltage
·Complementary to 2SB1018

APPLICATIONS

·Power amplifier applications
·High current switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

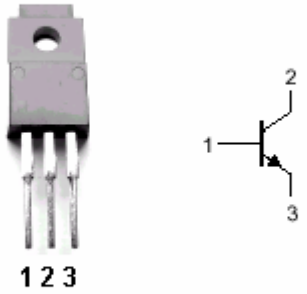

Fig.1 simplified outline (TO-220Fa) and symbol

Absolute maximum ratings(Ta=25□)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	100	V
V_{CEO}	Collector -emitter voltage	Open base	80	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		7	A
I_B	Base current		1	A
P_C	Collector power dissipation	T_C=25□	30	W
		T_a=25□	2.0	
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	80			V
V_{CEsat}	Collector-emitter saturation voltage	I_C=4A ;I_B=0.4A		0.25	0.5	V
V_{BEsat}	Base-emitter saturation voltage	I_C=4A ;I_B=0.4A		0.9	1.4	V
I_{CBO}	Collector cut-off current	V_{CB}=100V; I_E=0			5	μA
I_{EBO}	Emitter cut-off current	V_{EB}=5V; I_C=0			5	μA
h_{FE-1}	DC current gain	I_C=1A ; V_{CE}=1V	70		240	
h_{FE-2}	DC current gain	I_C=4A ; V_{CE}=1V	30			
f_T	Transition frequency	V_{CE}=4V;I_C=1A		10		MHz
C_{OB}	Collector output capacitance	f=1MHz ; V_{CB}=10V;I_E=0		250		pF
Switching times						
t_{on}	Turn-on time	I_{B1}=-I_{B2}=0.3A V_{CC}=30V ,R_L=10Ω		0.4		μs
t_{stg}	Storage time			2.5		μs
t_f	Fall time			0.5		μs

◆ **h_{FE-1} Classifications**

O	Y
70-140	120-240

PACKAGE OUTLINE

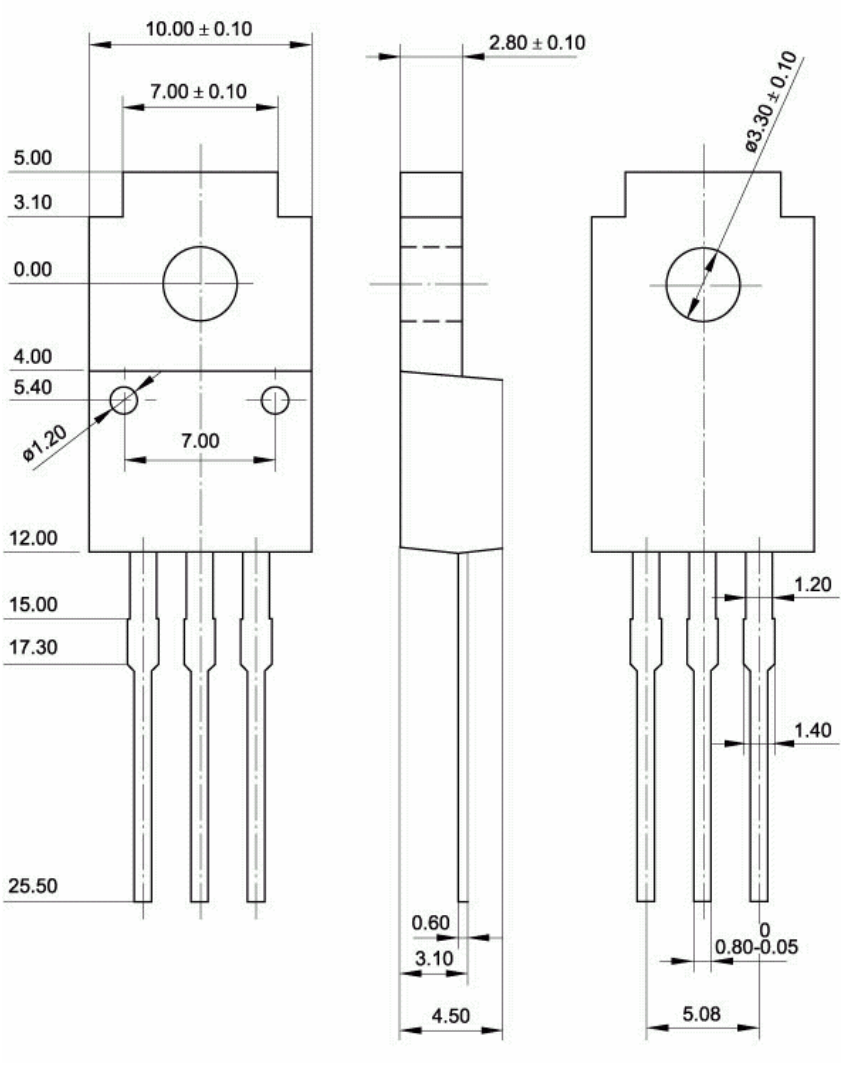

Fig.2 Outline dimensions(unindicated tolerance: ±0.15 mm)

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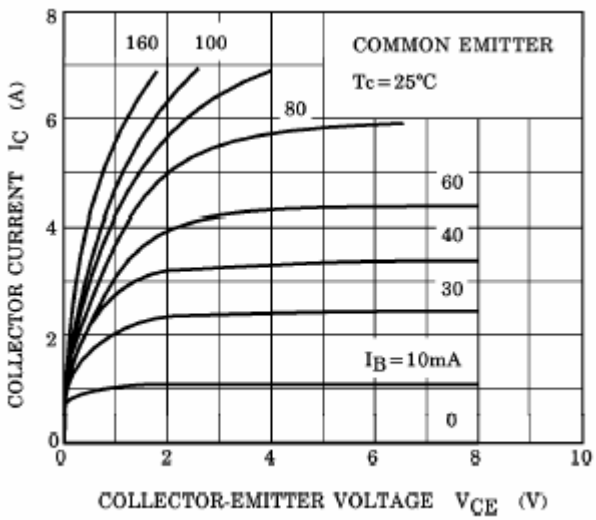

Fig.3 Static Characteristic

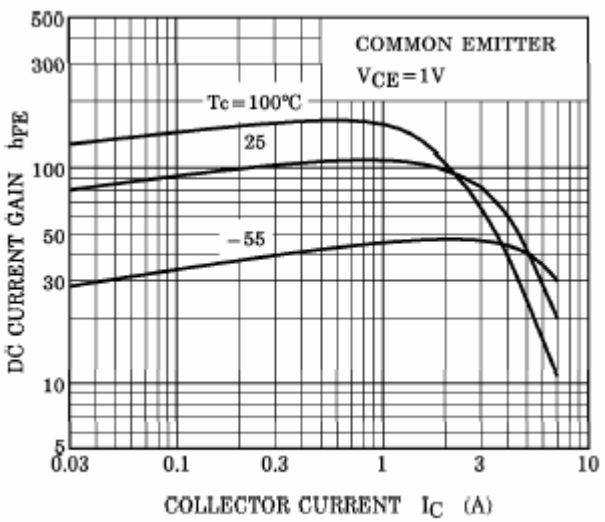

Fig.4 DC current Gain

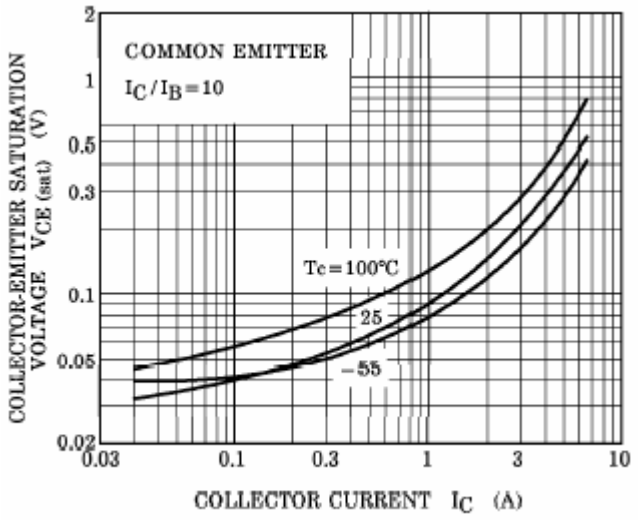

Fig.5 Collector-Emitter Saturation Voltage

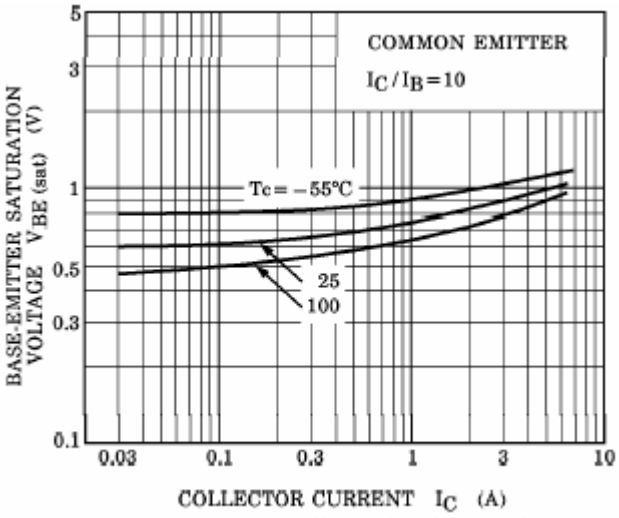

Fig.6 Base-Emitter Saturation Voltage

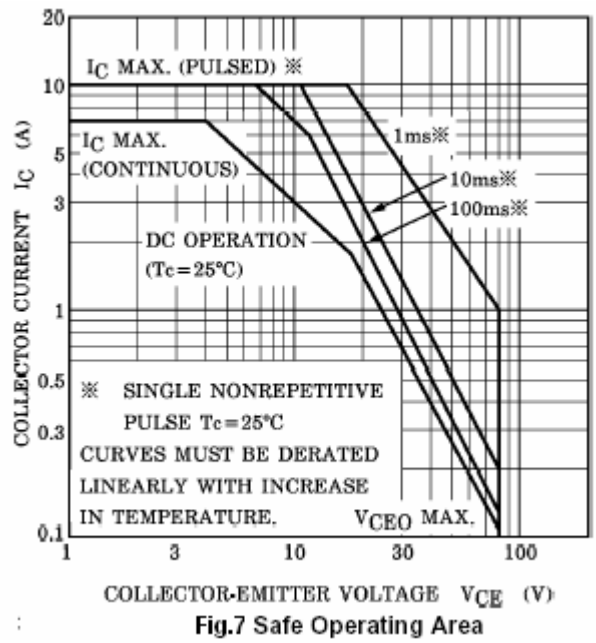

Fig.7 Safe Operating Area