

Silicon NPN Power Transistors

2SD1411

DESCRIPTION

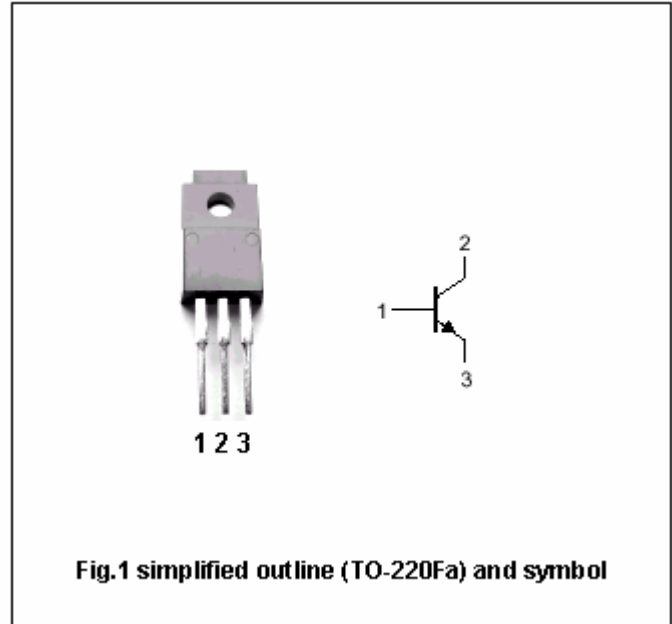
- With TO-220Fa package
- Low saturation voltage
- Complementary to 2SB1018

APPLICATIONS

- Power amplifier applications
- High current switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

Absolute maximum ratings($T_a=25$)

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

T_j=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 =10		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

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PACKAGE OUTLINE

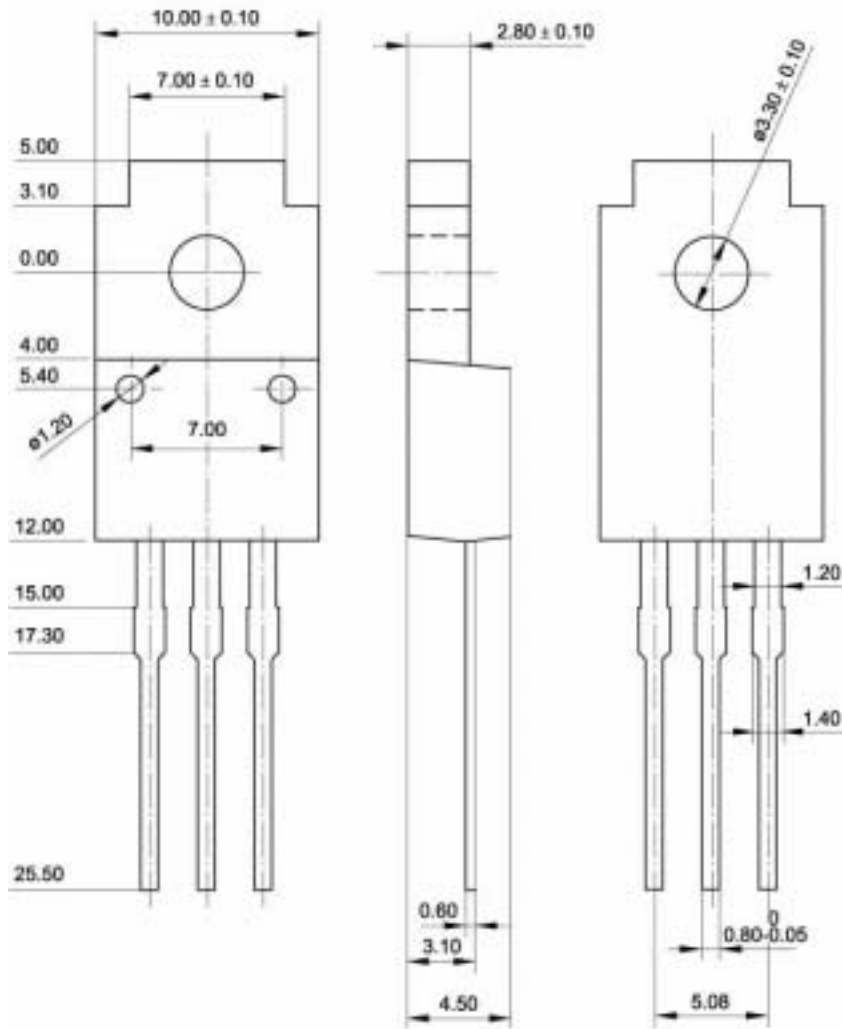


Fig.2 Outline dimensions(unindicated tolerance: ± 0.15 mm)

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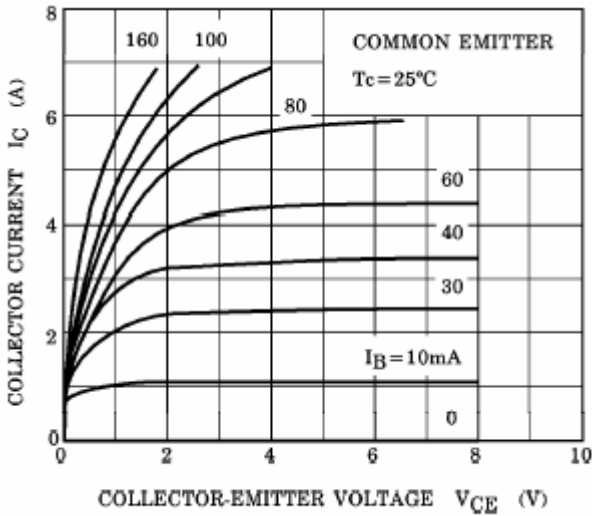


Fig.3 Static Characteristic

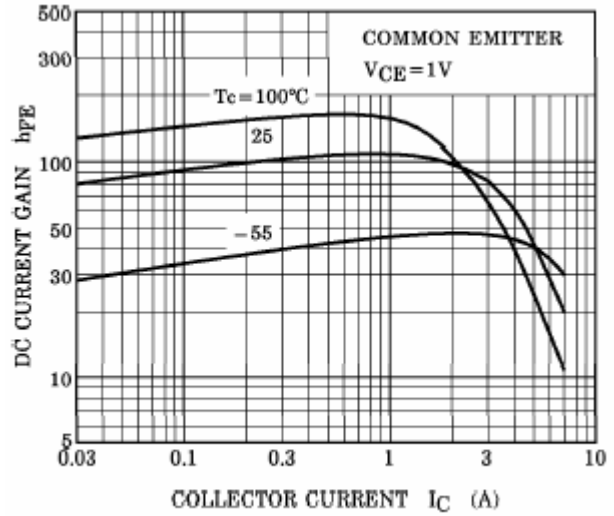


Fig.4 DC current Gain

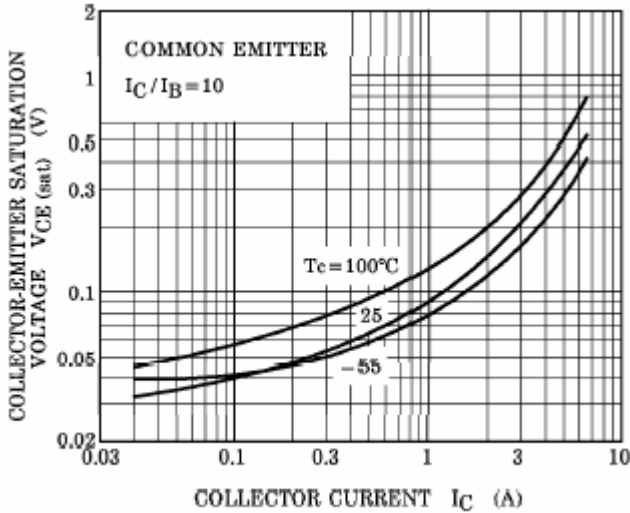


Fig.5 Collector-Emitter Saturation Voltage

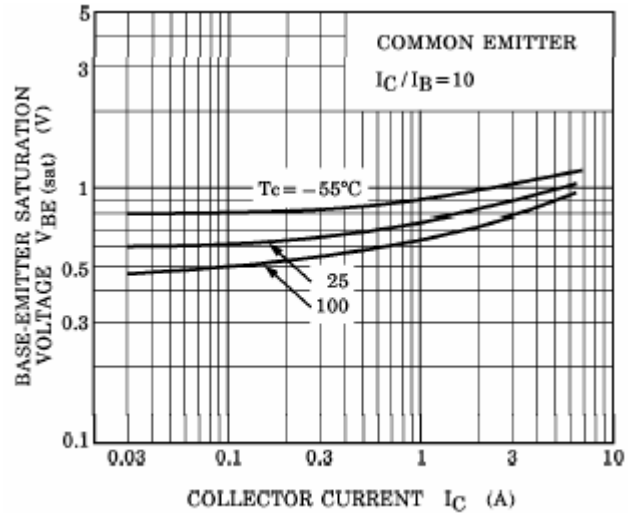


Fig.6 Base-Emitter Saturation Voltage

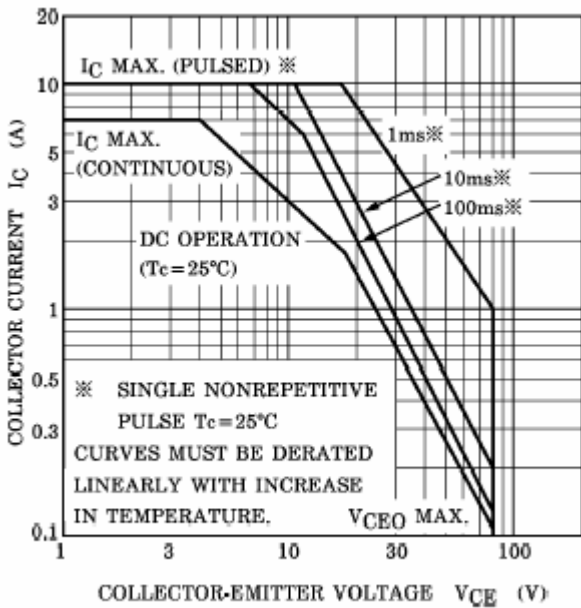


Fig.7 Safe Operating Area