

Silicon NPN Power Transistors

2SC4552

DESCRIPTION

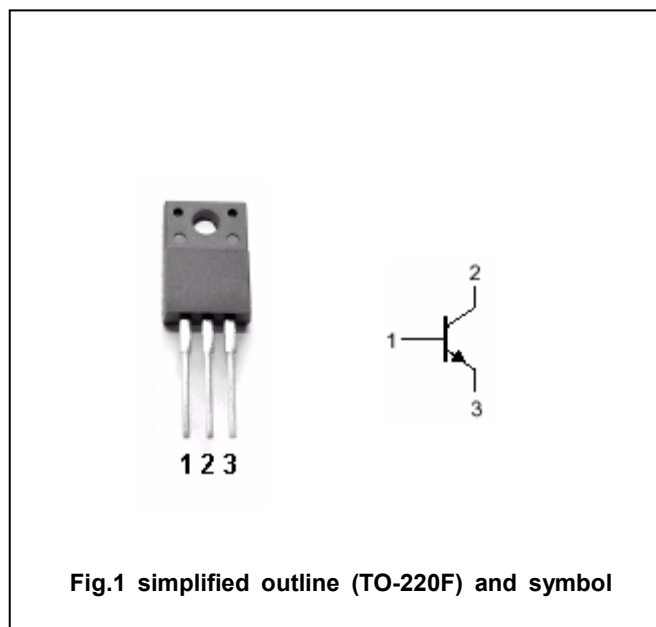
- With TO-220F package
- High h_{FE} and low $V_{CE(sat)}$

APPLICATIONS

- For high-speed switching
- For use in drivers such as DC-DC converters and actuators.

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

Absolute maximum ratings ($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	100	V
V_{CEO}	Collector-emitter voltage	Open base	60	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		15	A
I_{CM}	Collector current-peak		30	A
I_B	Base current		7.5	A
P_T	Total power dissipation	$T_C=25^\circ\text{C}$	30	W
		$T_a=25^\circ\text{C}$	2	
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CEO(SUS)}	Collector-emitter sustaining voltage	I _C =8A; I _B =0.8A; L=1mH	60			V
V _{CE(sat)1}	Collector-emitter saturation voltage	I _C =8A; I _B =0.4A			0.3	V
V _{CE(sat)2}	Collector-emitter saturation voltage	I _C =12A; I _B =0.6A			0.5	V
V _{BE(sat)1}	Base-emitter saturation voltage	I _C =8A; I _B =0.4A			1.2	V
V _{BE(sat)2}	Base-emitter saturation voltage	I _C =12A; I _B =0.6A			1.5	V
I _{CBO}	Collector cut-off current	V _{CB} =60V; I _E =0			10	μA
I _{CER}	Collector cut-off current	V _{CB} =60V; R _{BE} =50Ω; T _a =125°C			1.0	mA
I _{CEx1}	Collector cut-off current	V _{CB} =60V; V _{BE} =-1.5V			10	μA
I _{CEx2}	Collector cut-off current	V _{CB} =60V; V _{BE} =-1.5V; T _a =125°C			1.0	mA
I _{EBO}	Emitter cut-off current	V _{EB} =5V; I _C =0			10	μA
h _{FE-1}	DC current gain	I _C =1.5A; V _{CE} =2V	100			
h _{FE-2}	DC current gain	I _C =3.0A; V _{CE} =2V	100		400	
h _{FE-3}	DC current gain	I _C =8.0A; V _{CE} =2V	60			
C _{ob}	Collector capacitance	V _{CB} =10V; I _E =0; f=1.0MHz		180		pF
f _T	Transition frequency	I _C =1.5A; V _{CE} =10V		120		MHz

Switching times

t _{on}	Turn-on time	I _C =8.0A; I _{B1} =-I _{B2} =0.4A V _{CC} =50V, R _L =6.3Ω			0.3	μs
t _s	Storage time				1.5	μs
t _f	Fall time				0.3	μs

◆ h_{FE-2} Classifications

M	L	K
100-120	150-300	200-400

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PACKAGE OUTLINE

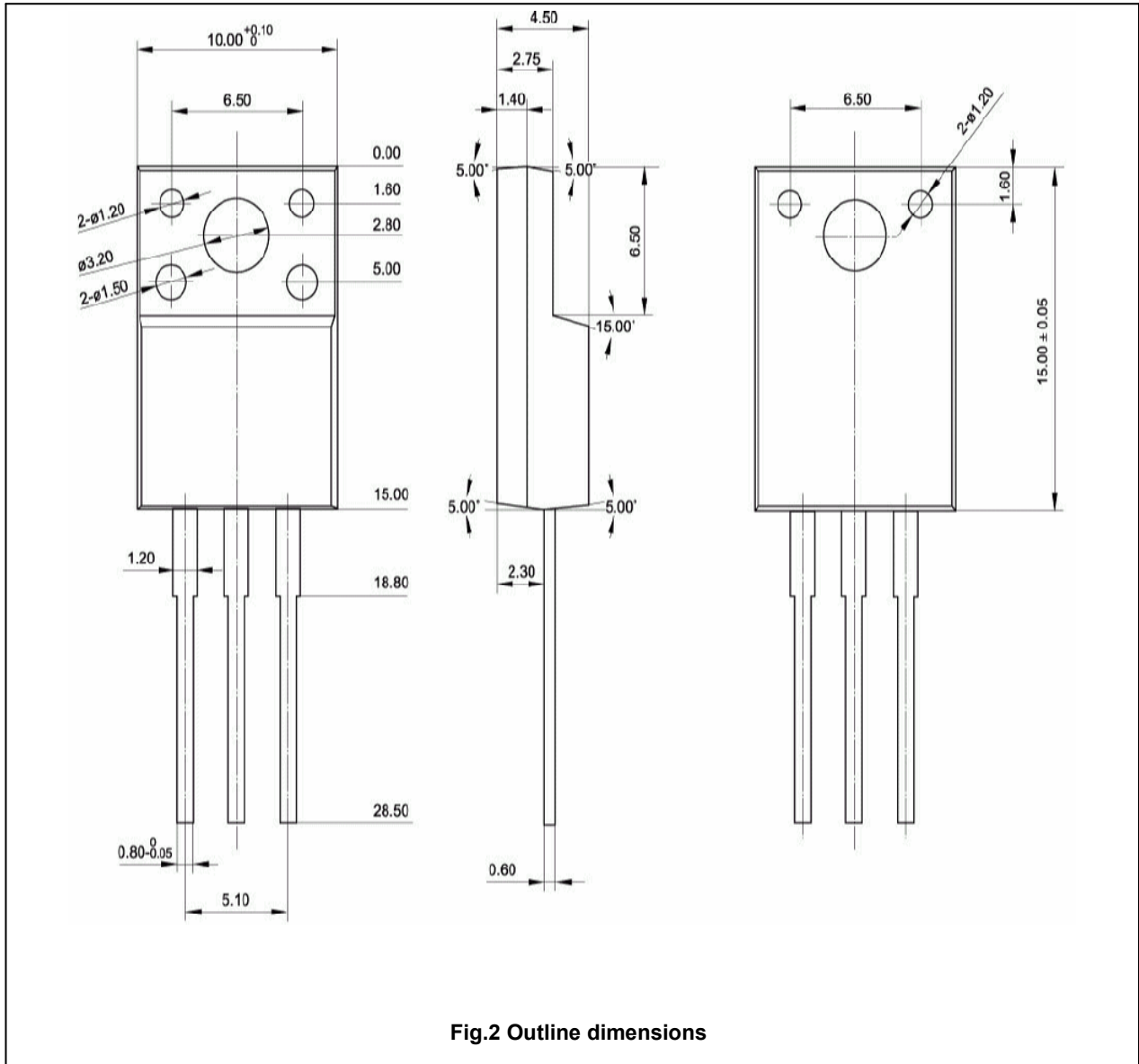


Fig.2 Outline dimensions

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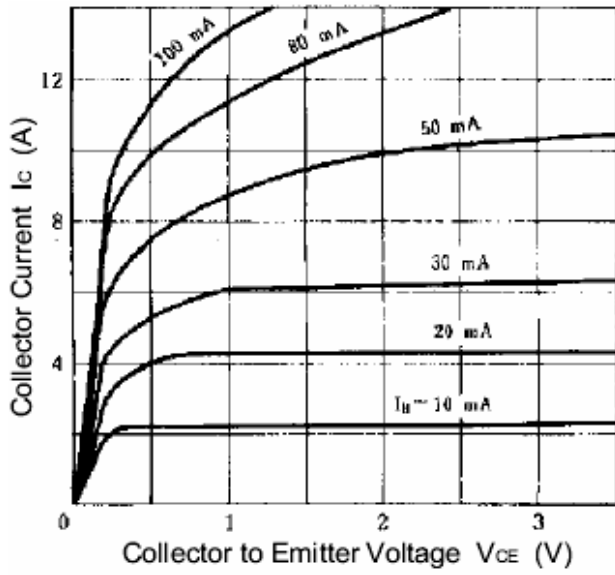


Fig.3 Static Characteristic

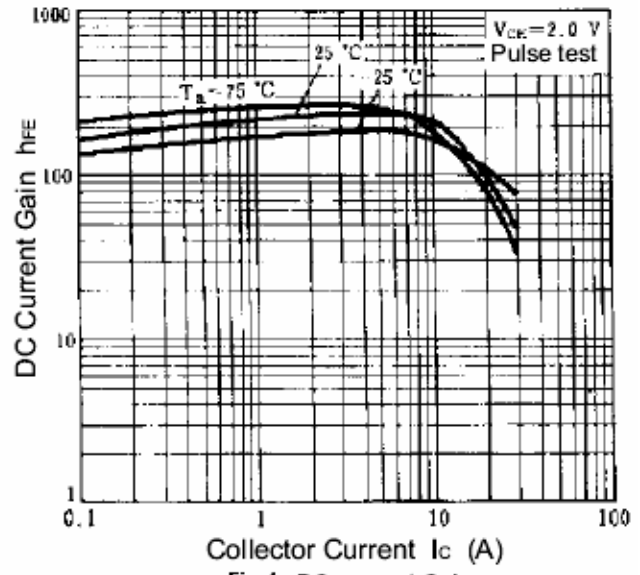


Fig.4 DC current Gain

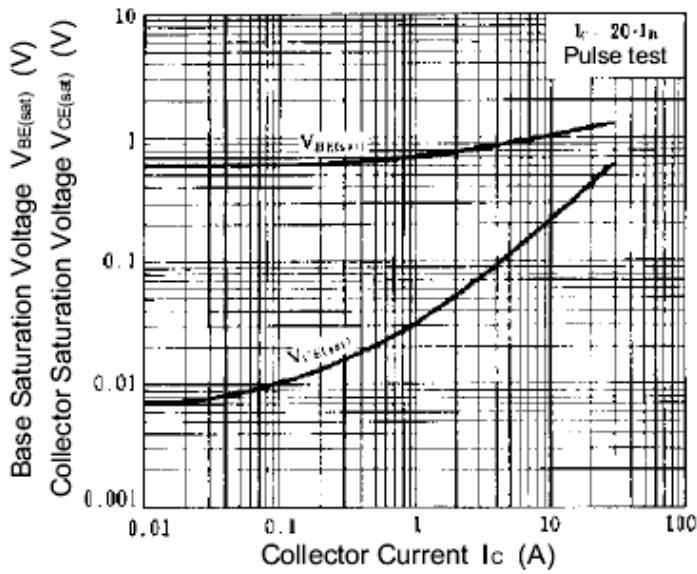


Fig.5 Base-Emmitter Saturation Voltage
Collector-Emmitter Saturation Voltage

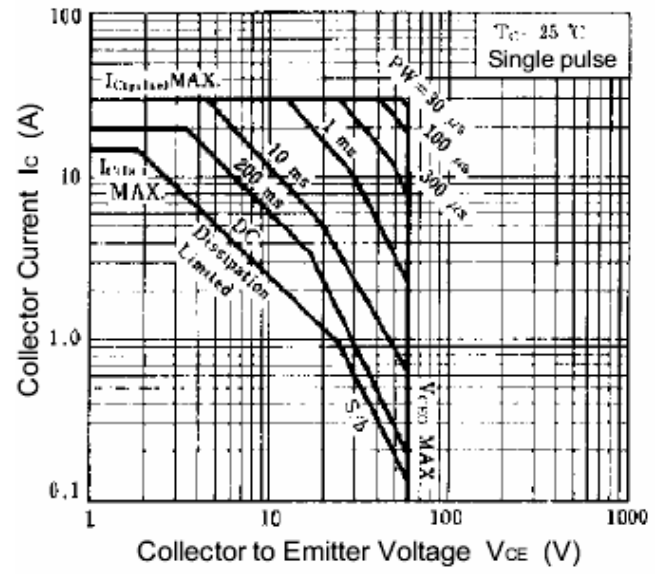


Fig.6 Safe Operating Area