

Silicon NPN Power Transistors

2SD1940

DESCRIPTION

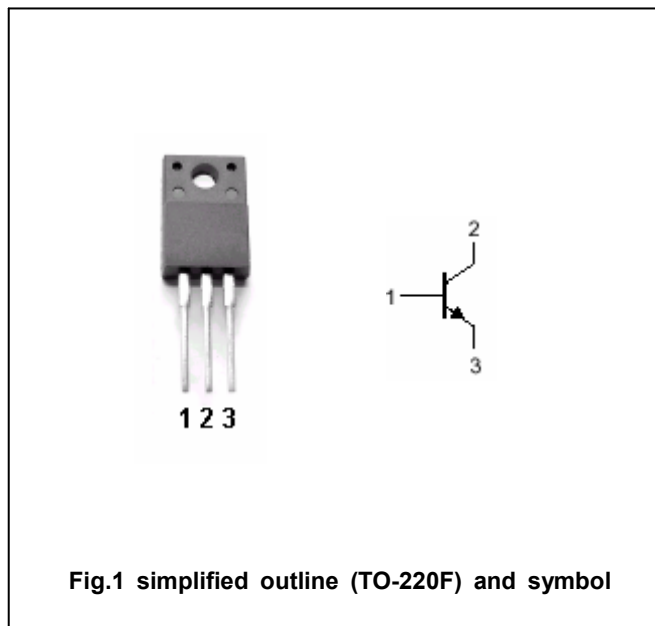
- With TO-220F package
- Wide area of safe operation

APPLICATIONS

- 85V/6A, AF 25 to 30W output applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

**Absolute maximum ratings (Ta=25℃)**

SYMBOL	PARAMETER	CONDITIONS	MAX	UNIT
V_{CBO}	Collector-base voltage	Open emitter	100	V
V_{CEO}	Collector-emitter voltage	Open base	85	V
V_{EBO}	Emitter-base voltage	Open collector	6	V
I_C	Collector current		6	A
I_{CM}	Collector current-peak		10	A
P_C	Collector dissipation	$T_C=25^\circ\text{C}$	25	W
T_j	Junction temperature		150	℃
T_{stg}	Storage temperature		-55~150	℃

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =5mA ; R _{BE} =∞	85			V
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =5mA ; I _E =0	100			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =5mA ; I _C =0	6			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =4A ; I _B =0.4A			2.0	V
V _{BE}	Base-emitter on voltage	I _C =1A ; V _{CE} =5V			1.5	V
I _{CBO}	Collector cut-off current	V _{CB} =40V ; I _E =0			0.1	mA
I _{EBO}	Emitter cut-off current	V _{EB} =4V ; I _C =0			0.1	mA
h _{FE-1}	DC current gain	I _C =1A ; V _{CE} =5V	60		320	
h _{FE-2}	DC current gain	I _C =3A ; V _{CE} =5V	20			
f _T	Transition frequency	I _C =1A ; V _{CE} =5V		15		MHz
C _{OB}	Collector output capacitance	f=1MHz ; V _{CB} =10V		110		pF

Switching times

t _{on}	Turn-on time	I _C =0.5A ; I _{B1} =-I _{B2} =50mA V _{CC} =20V , R _L =40Ω		0.28		μs
t _s	Storage time			3.60		μs
t _f	Fall time			0.50		μs

◆ h_{FE-1} Classifications

D	E	F
60-120	100-200	160-320

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PACKAGE OUTLINE

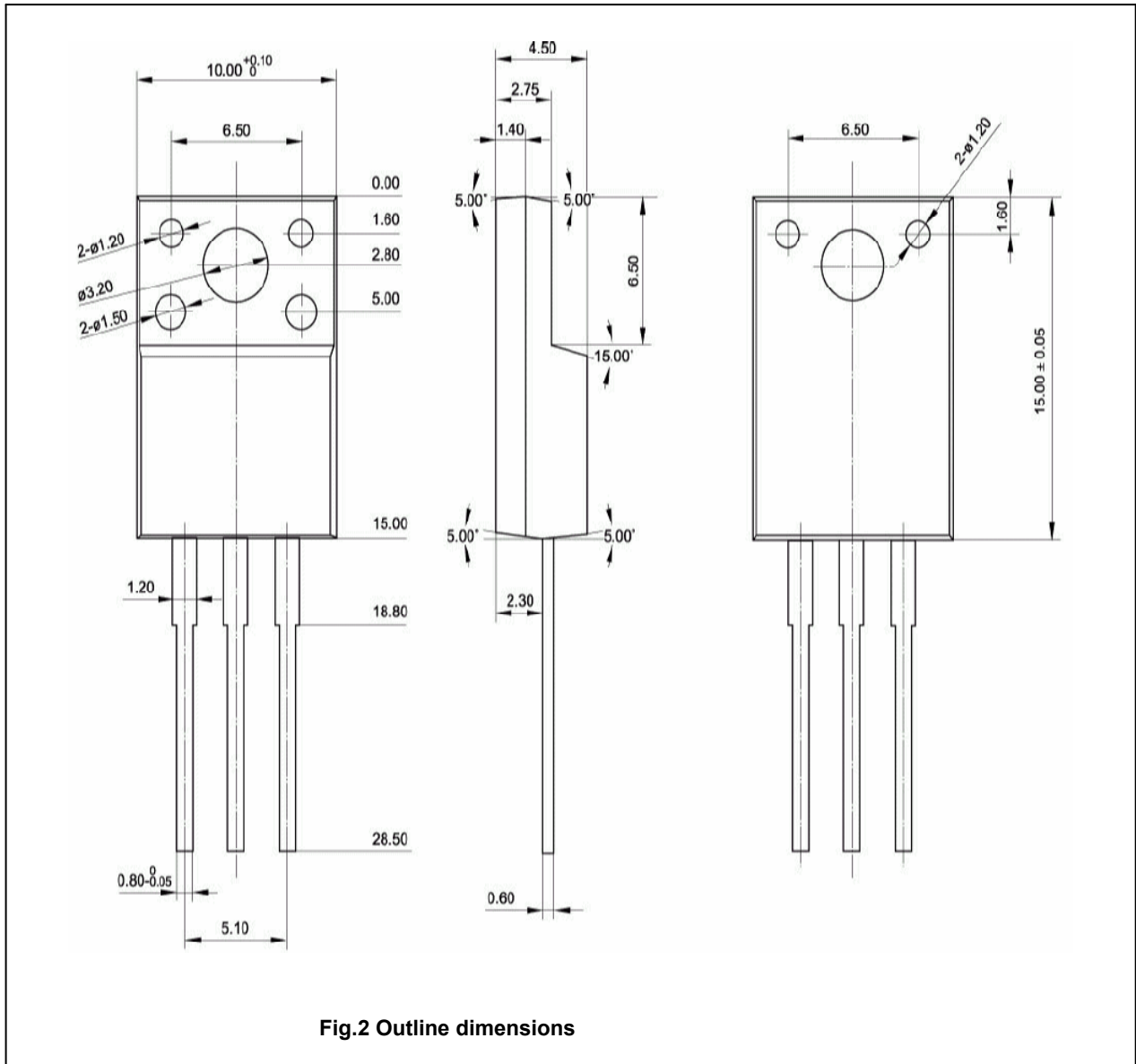


Fig.2 Outline dimensions

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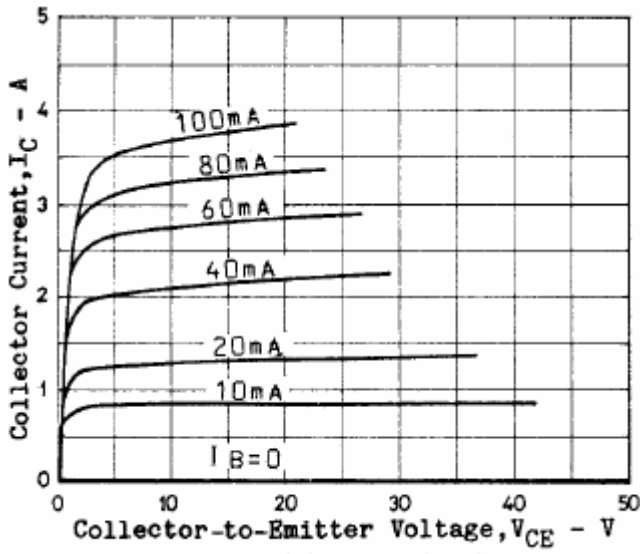


Fig.3 Static Characteristic

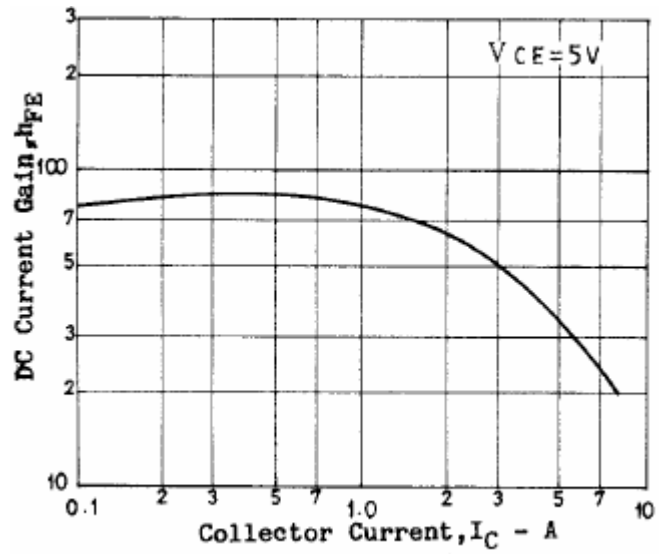


Fig.4 DC current Gain

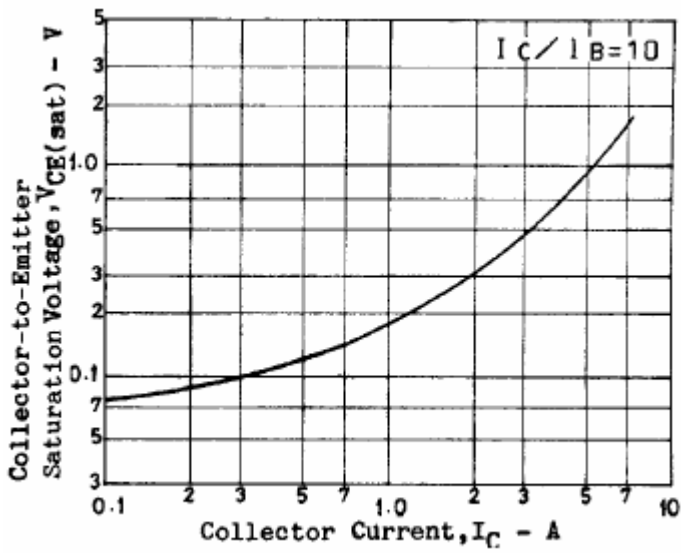


Fig.5 Collector-Emitter Saturation Voltage

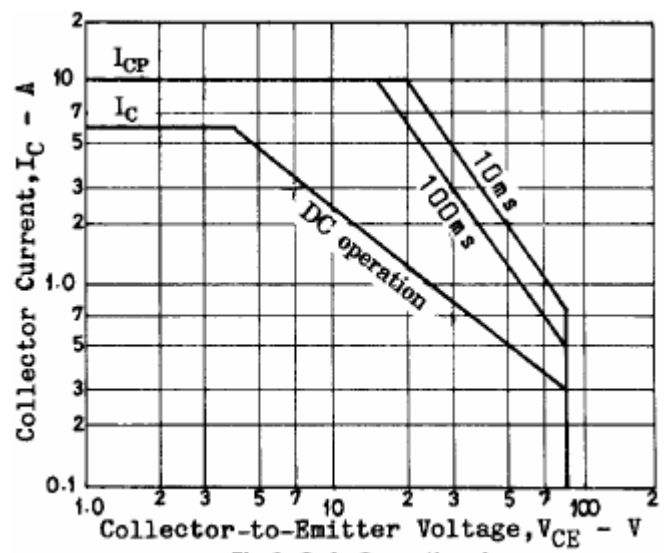


Fig.6 Safe Operating Area