

Silicon NPN Power Transistors

2SC3746

DESCRIPTION

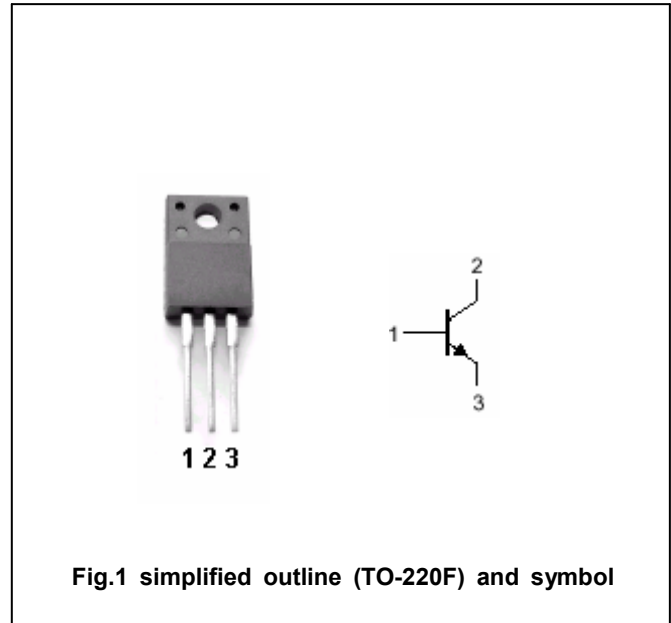
- With TO-220F package
- Complement to type 2SA1469
- Low saturation voltage
- Excellent current dependence of h_{FE}
- Short switching time

APPLICATIONS

- Various inductance of lamp drivers for electronic equipment
- Inverters ,converters
- Switching regulator ,driver

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	80	V
V_{CEO}	Collector-emitter voltage	Open base	60	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		5	A
I_{CM}	Collector current-peak		7	A
P_C	Collector dissipation	$T_a=25^\circ\text{C}$	2	W
		$T_C=25^\circ\text{C}$	20	
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 _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =1mA ; R _{BE} =∞	60			V
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =10mA ; I _E =0	80			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =10mA ; I _C =0	5			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =2.5A ; I _B =0.125A			0.4	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}	DC current gain	I _C =1A ; V _{CE} =2V	70		280	
f _T	Transition frequency	I _C =1A ; V _{CE} =5V		100		MHz

Switching times

t _{on}	Turn-on time	I _C =2.0A ; I _{B1} =-I _{B2} =0.1A V _{CC} =20V , R _L =10Ω		0.1		μs
t _s	Storage time			0.5		μs
t _f	Fall time			0.1		μs

◆ h_{FE} Classifications

Q	R	S
70-140	100-200	140-280

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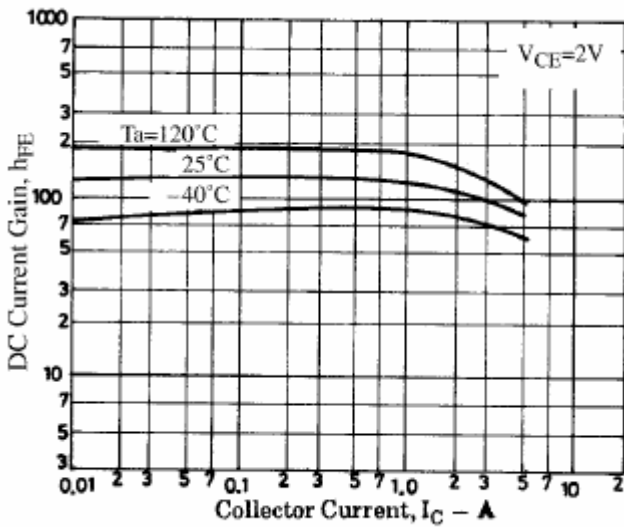


Fig.3 DC current Gain

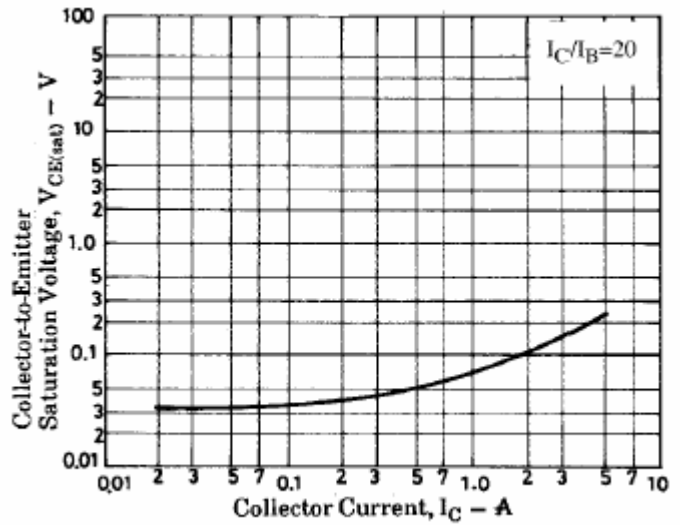


Fig.4 Collector-Emitter Saturation Voltage

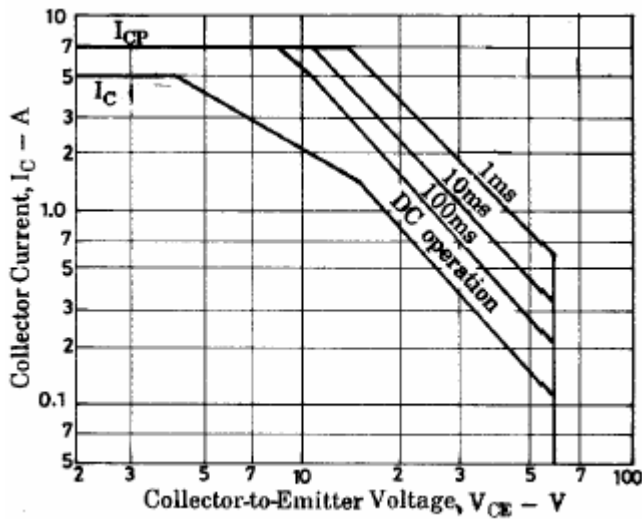


Fig.5 Safe Operating Area