

**Silicon NPN Power Transistors**

**2SC3746**

**DESCRIPTION**

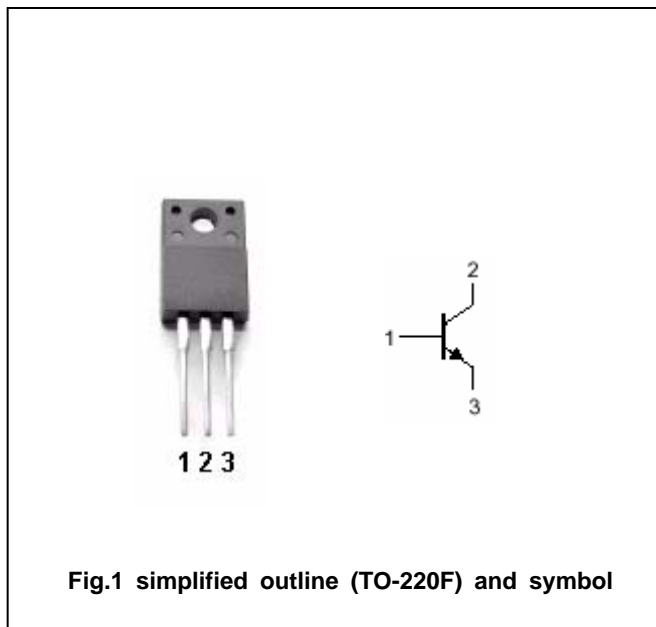
- With TO-220F package
- Complement to type 2SA1469
- Low saturation voltage
- Excellent current dependence of  $h_{FE}$
- Short switching time

**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 (Ta=25 )**

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	$T_a=25$	2	W
		$T_C=25$	20	
$T_j$	Junction temperature		150	
$T_{stg}$	Storage temperature		-55~150	

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## CHARACTERISTICS

T<sub>j</sub>=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =1mA ; R <sub>BE</sub> =	60			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =10mA ; I <sub>E</sub> =0	80			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =10mA ; I <sub>C</sub> =0	5			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2.5A ; I <sub>B</sub> =0.125A			0.4	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =40V ; I <sub>E</sub> =0			0.1	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =4V ; I <sub>C</sub> =0			0.1	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =2V	70		280	
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V		100		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =2.0A ; I <sub>B1</sub> =-I <sub>B2</sub> =0.1A V <sub>CC</sub> =20V , R <sub>L</sub> =10		0.1		μs
t <sub>s</sub>	Storage time			0.5		μs
t <sub>f</sub>	Fall time			0.1		μs

◆ h<sub>FE</sub> Classifications

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

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PACKAGE OUTLINE

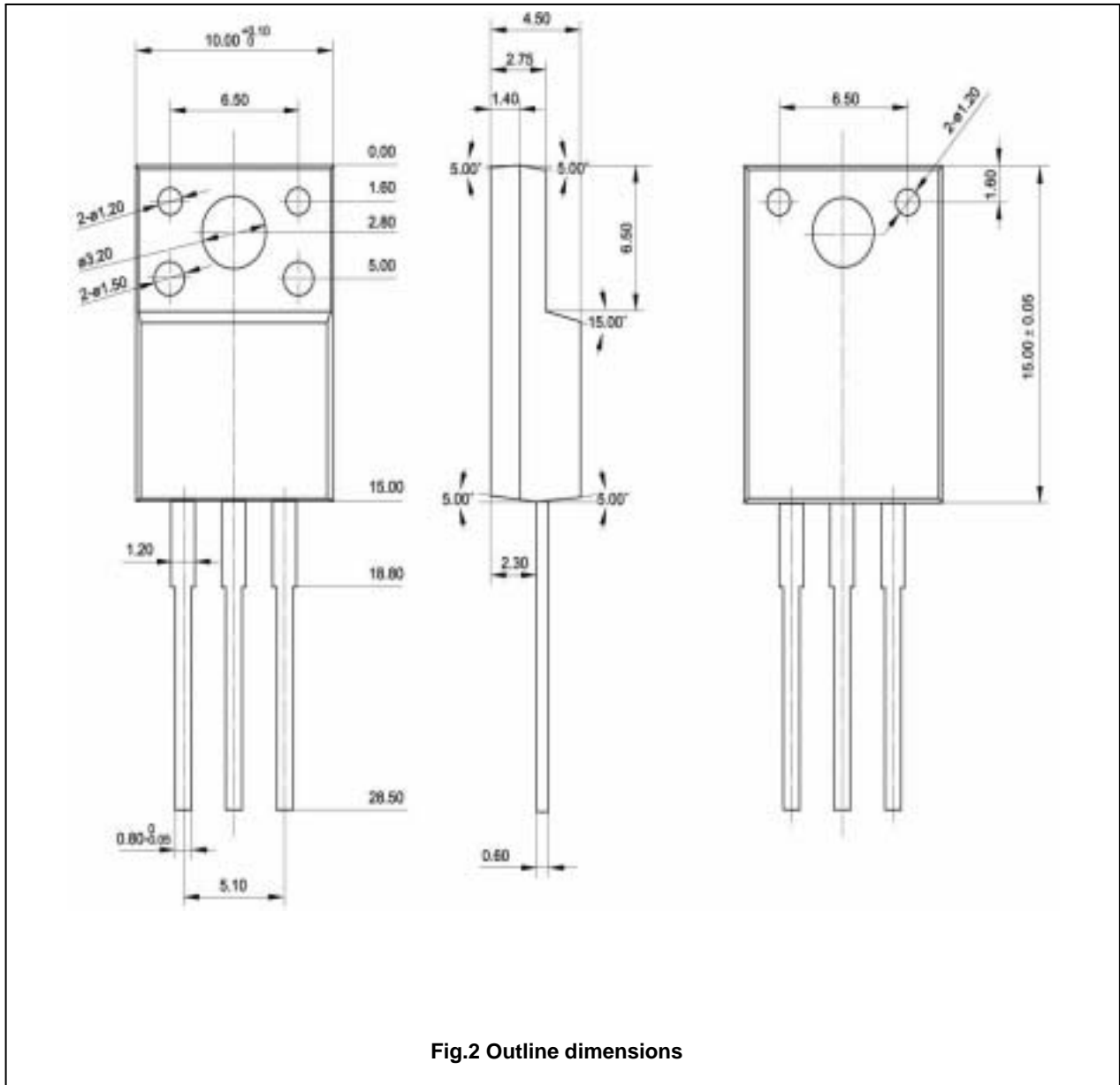


Fig.2 Outline dimensions

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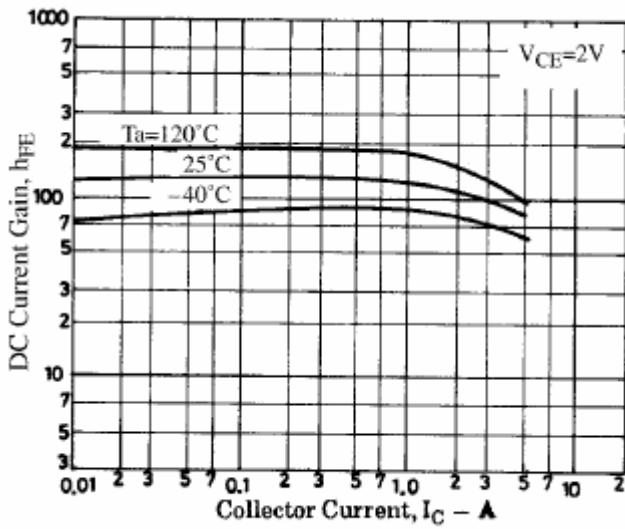


Fig.3 DC current Gain

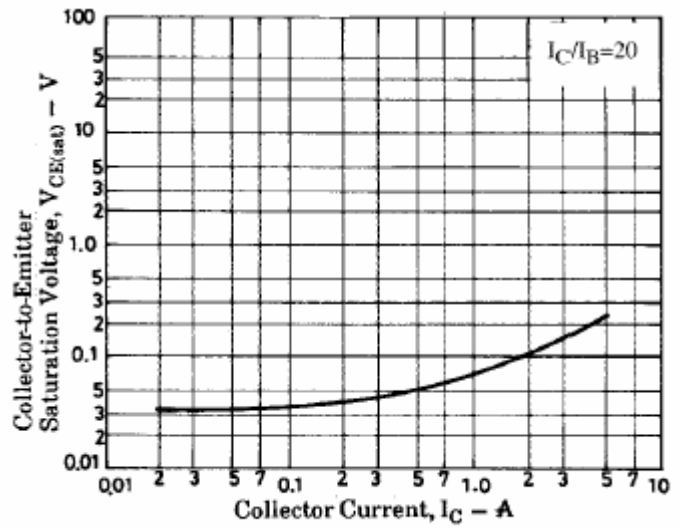


Fig.4 Collector-Emitter Saturation Voltage

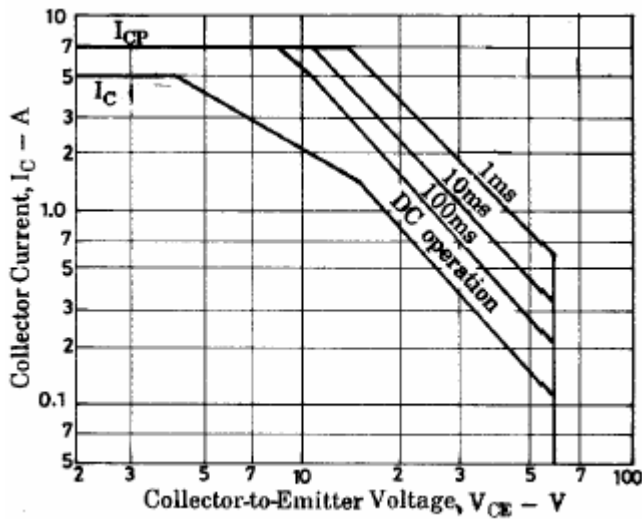


Fig.5 Safe Operating Area