

**Inchange Semiconductor**

**Product Specification**

**Silicon NPN Power Transistors**

**2SC3752**

**DESCRIPTION**

- With TO-220F package
- High breakdown voltage and high reliability.
- Fast switching speed.
- Wide ASO(Safe Operating Area)

**APPLICATIONS**

- 800V/3A switching regulator applications

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



**Absolute maximum ratings (Ta=25 )**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CB0</sub>	Collector-base voltage	Open emitter	1100	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	800	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	7	V
I <sub>C</sub>	Collector current		3	A
I <sub>CM</sub>	Collector current-peak		10	A
I <sub>B</sub>	Base current		1.5	A
P <sub>C</sub>	Collector dissipation	T <sub>C</sub> =25	30	W
T <sub>j</sub>	Junction temperature		150	
T <sub>stg</sub>	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> =5mA ; R <sub>BE</sub> =	800			V
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	I <sub>C</sub> =1mA ; I <sub>E</sub> =0	1100			V
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =1mA ; I <sub>C</sub> =0	7			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =1.5A ; I <sub>B</sub> =0.3A			2.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =1.5A ; I <sub>B</sub> =0.3A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =800V ; I <sub>E</sub> =0			10	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V ; I <sub>C</sub> =0			10	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =0.2A ; V <sub>CE</sub> =5V	10		40	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	8			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.2A ; V <sub>CE</sub> =10V		15		MHz
C <sub>OB</sub>	Collector output capacitance	f=1MHz ; V <sub>CB</sub> =10V		60		pF

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =2.0A ; I <sub>B1</sub> =0.4A ; I <sub>B2</sub> =-0.8A V <sub>CC</sub> =400V , R <sub>L</sub> =200			0.5	μs
t <sub>stg</sub>	Storage time				3.0	μs
t <sub>f</sub>	Fall time				0.3	μs

◆ h<sub>FE-1</sub> Classifications

K	L	M
10-20	15-30	20-40

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PACKAGE OUTLINE

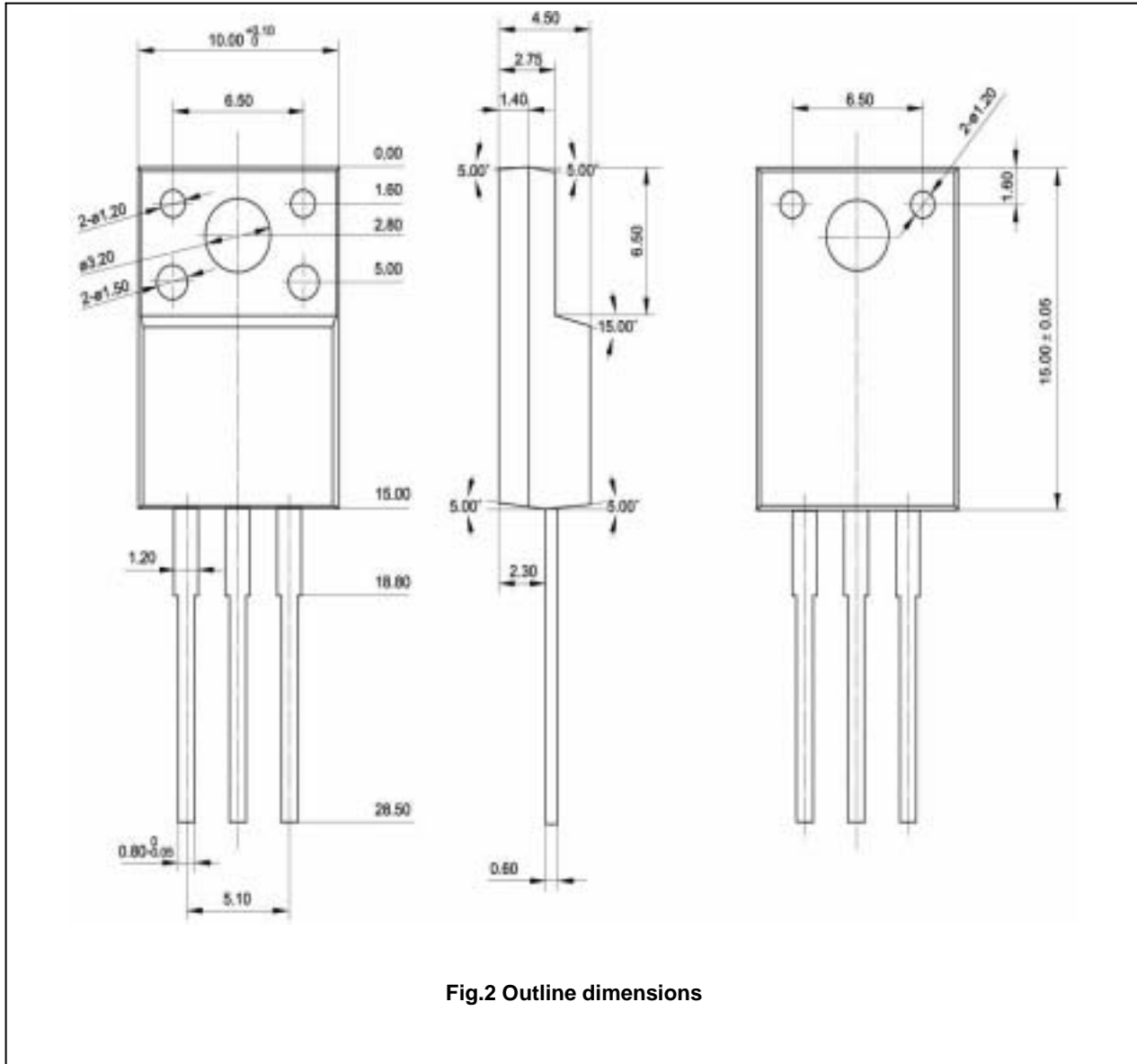


Fig.2 Outline dimensions

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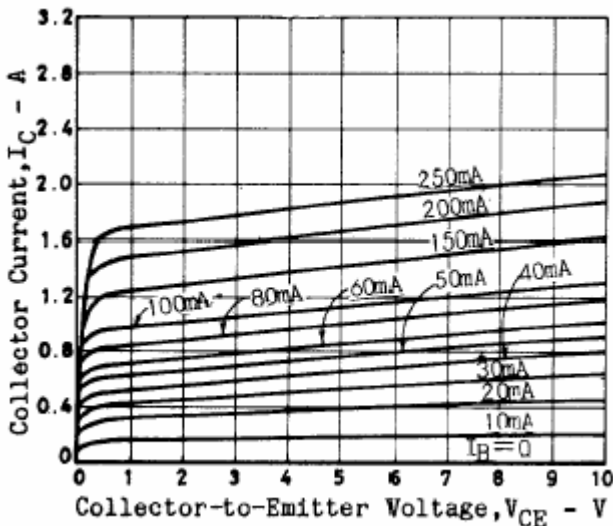


Fig.3 Static Characteristic

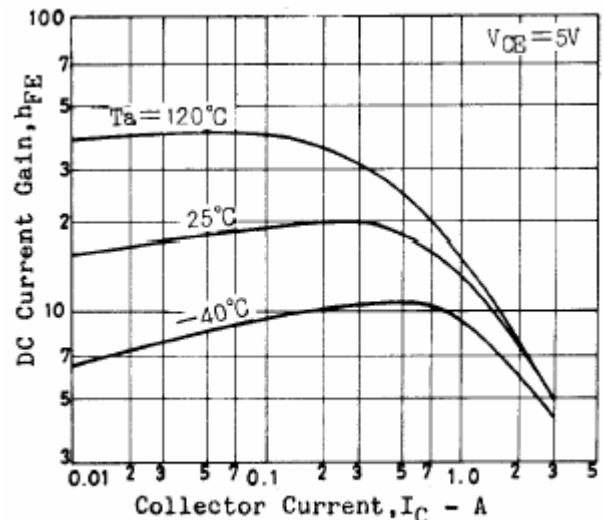


Fig.4 DC current Gain

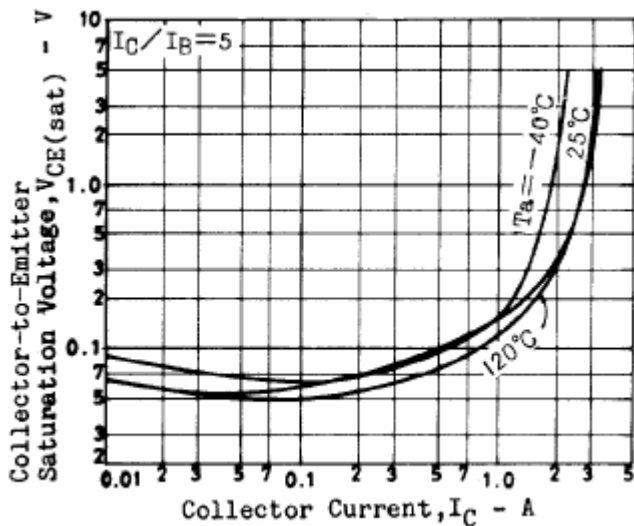


Fig.5 Collector-Emmitter Saturation Voltage

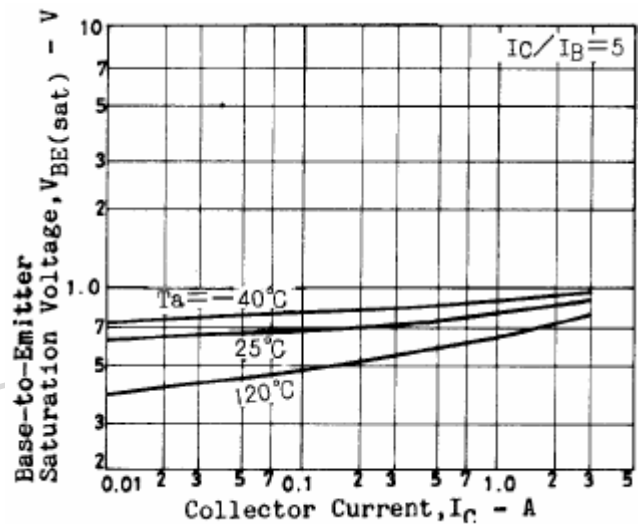


Fig.6 Base-Emmitter Saturation Voltage

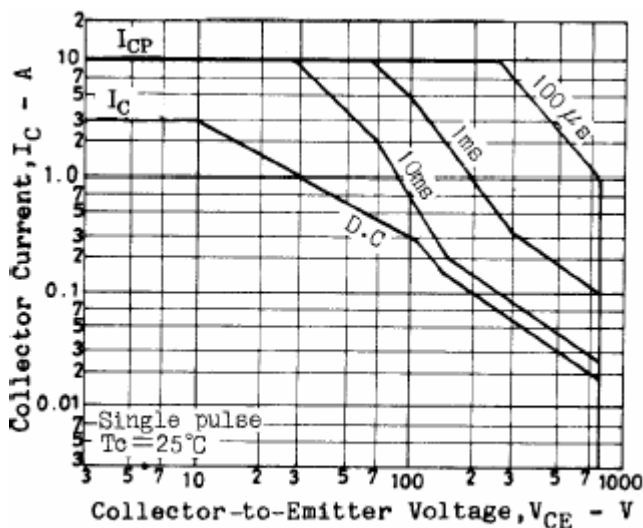


Fig.7 Safe Operating Area