

Inchange Semiconductor

Product Specification

Silicon NPN Power Transistors

2SD1975 2SD1975A

DESCRIPTION

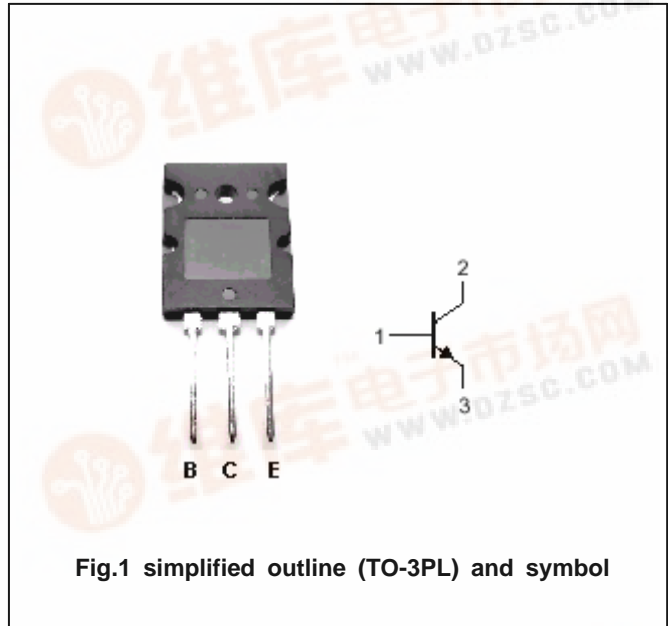
- With TO-3PL package
- Complement to type 2SB1317/1317A
- Wide area of safe operation
- High transition frequency  $f_T$

APPLICATIONS

- For high power amplification
- Optimum for the output stage of a Hi-Fi audio amplifier

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter



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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	2SD1975	180	V
		2SD1975A	200	
$V_{CEO}$	Collector-emitter voltage	2SD1975	180	V
		2SD1975A	200	
$V_{EBO}$	Emitter-base voltage	Open collector	5	V
$I_C$	Collector current		15	A
$I_{CM}$	Collector current-peak		25	A
$P_C$	Collector power dissipation	$T_a=25^{\circ}C$	3.5	W
		$T_c=25^{\circ}C$	150	
$T_j$	Junction temperature		150	$^{\circ}C$
$T_{stg}$	Storage temperature		-55~150	$^{\circ}C$

## Silicon NPN Power Transistors

## 2SD1975 2SD1975A

## CHARACTERISTICS

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

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEsat</sub>	Collector-emitter saturation voltage		I <sub>C</sub> =10A ; I <sub>B</sub> =1A			2.5	V
V <sub>BE</sub>	Emitter-base voltage		I <sub>C</sub> =8A ; V <sub>CE</sub> =5V			1.8	V
I <sub>CBO</sub>	Collector cut-off current	2SD1975	V <sub>CB</sub> =180V; I <sub>E</sub> =0			50	μ A
		2SD1975A	V <sub>CB</sub> =200V; I <sub>E</sub> =0				
I <sub>EBO</sub>	Emitter cut-off current		V <sub>EB</sub> =3V; I <sub>C</sub> =0			50	μ A
h <sub>FE-1</sub>	DC current gain		I <sub>C</sub> =20mA ; V <sub>CE</sub> =5V	20			
h <sub>FE-2</sub>	DC current gain		I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	60		200	
h <sub>FE-3</sub>	DC current gain		I <sub>C</sub> =8A ; V <sub>CE</sub> =5V	20			
f <sub>T</sub>	Transition frequency		I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V		20		MHz
C <sub>OB</sub>	Collector output capacitance		f=1MHz; V <sub>CB</sub> =10V		200		pF

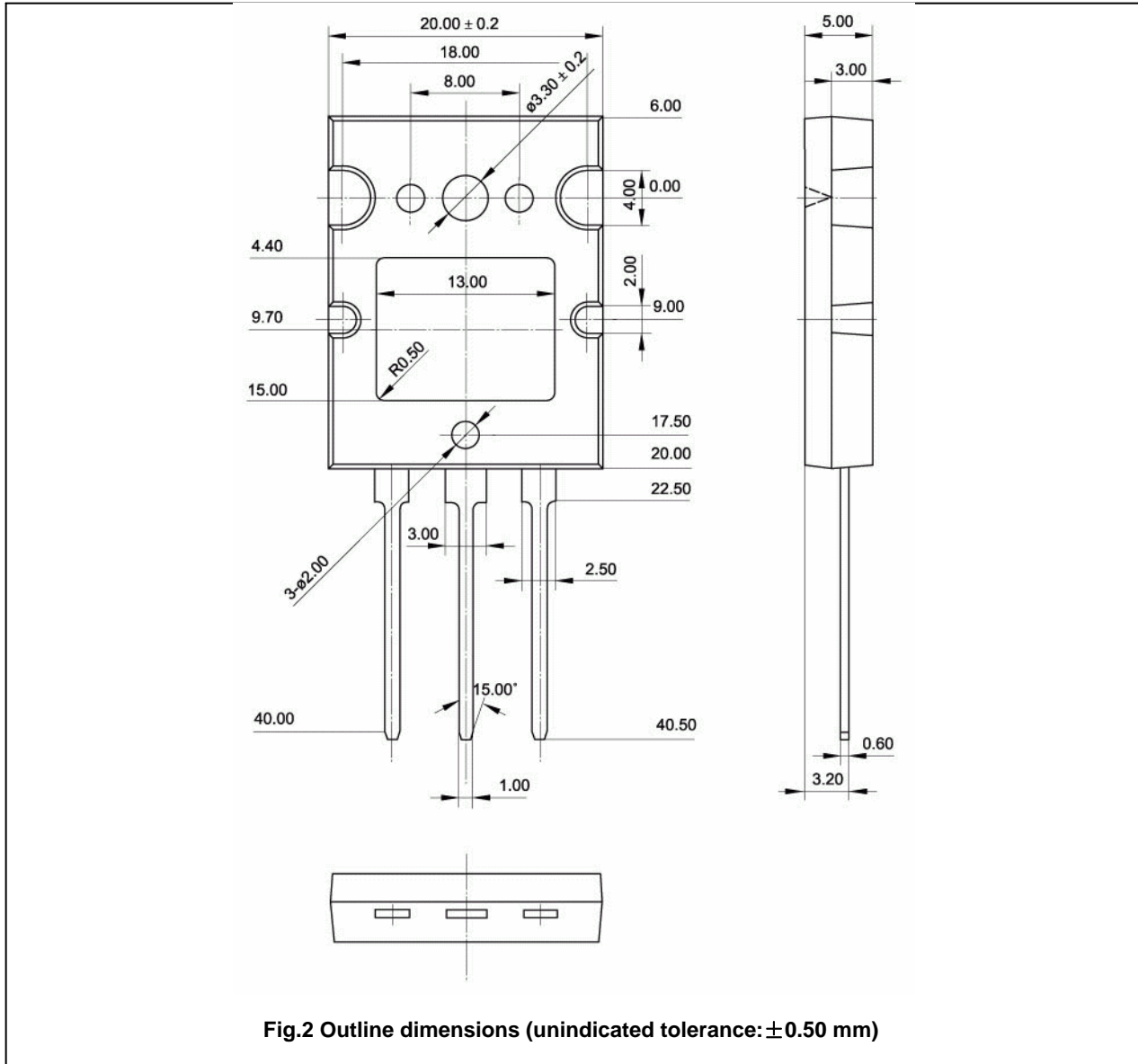
◆ h<sub>FE-2</sub> classifications

Q	S	P
60-120	80-160	100-200

Silicon NPN Power Transistors

2SD1975 2SD1975A

PACKAGE OUTLINE



Silicon NPN Power Transistors

2SD1975 2SD1975A

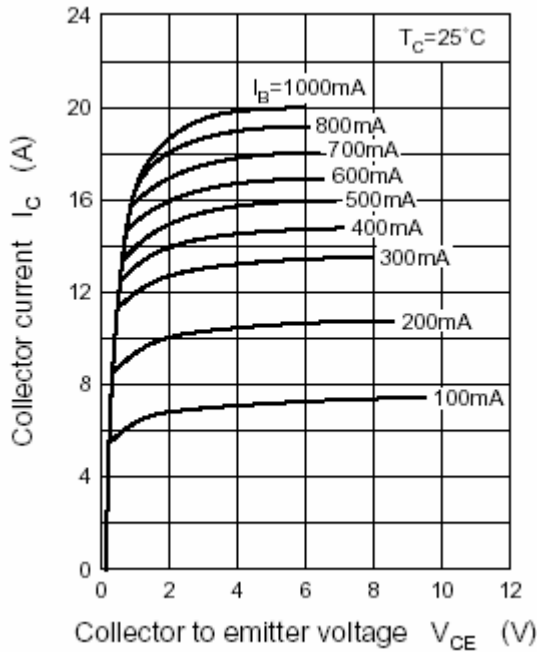


Fig.3 Static Characteristic

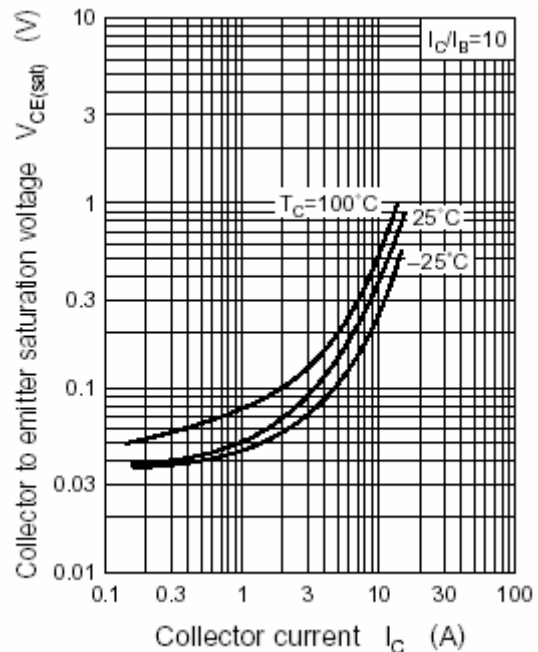


Fig.4 Collector-Emitter Saturation Voltage

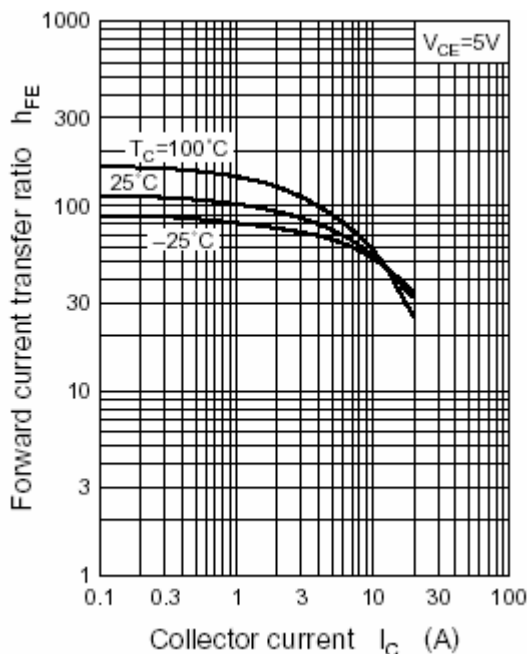


Fig.5 DC current Gain

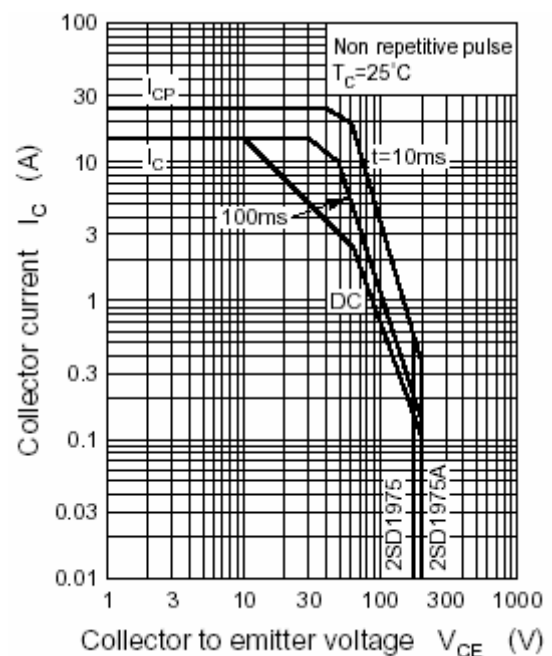


Fig.6 Safe Operating Area