

**Inchange Semiconductor**

**Product Specification**

**Silicon NPN Power Transistors**

**2SD1877**

**DESCRIPTION**

- With TO-3PML package
- High speed
- High breakdown voltage
- High reliability
- Built-in damper diode

**APPLICATIONS**

- Color TV horizontal deflection output
- Color display horizontal deflection output

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

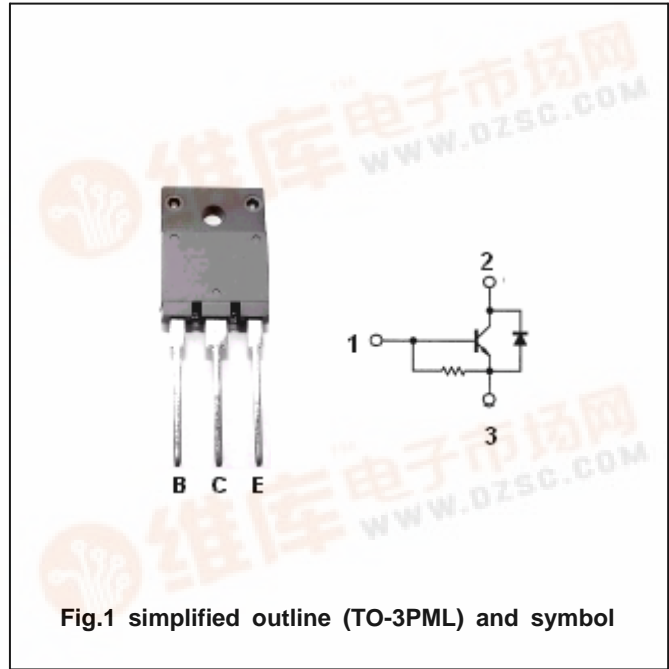


Fig.1 simplified outline (TO-3PML) and symbol

**Absolute maximum ratings(Tc=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	Open emitter	1500	V
V <sub>CEO</sub>	Collector-emitter voltage	Open base	800	V
V <sub>EBO</sub>	Emitter-base voltage	Open collector	6	V
I <sub>C</sub>	Collector current		4	A
I <sub>CM</sub>	Collector current-peak		12	A
P <sub>C</sub>	Collector power dissipation		50	W
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-55~150	°C

## Silicon NPN Power Transistors

## 2SD1877

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =100mA; I <sub>B</sub> =0	800			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2.5A; I <sub>B</sub> =0.8A			5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =2.5A; I <sub>B</sub> =0.8A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =800V; I <sub>E</sub> =0			10	μ A
I <sub>CES</sub>	Collector cut-off current	V <sub>CB</sub> =1500V; R <sub>BE</sub> =0			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =4V; I <sub>C</sub> =0	40		130	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =0.5A; V <sub>CE</sub> =5V	8			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =2.5A; V <sub>CE</sub> =5V	3.5		7	
V <sub>F</sub>	Diode forward voltage	I <sub>EC</sub> =4A			2.0	V
t <sub>f</sub>	Fall time	I <sub>C</sub> =3A; R <sub>L</sub> =50 Ω I <sub>B1</sub> =0.8A; I <sub>B2</sub> =-1.6A; V <sub>CC</sub> =200V		0.1	0.3	μ s

Silicon NPN Power Transistors

2SD1877

PACKAGE OUTLINE

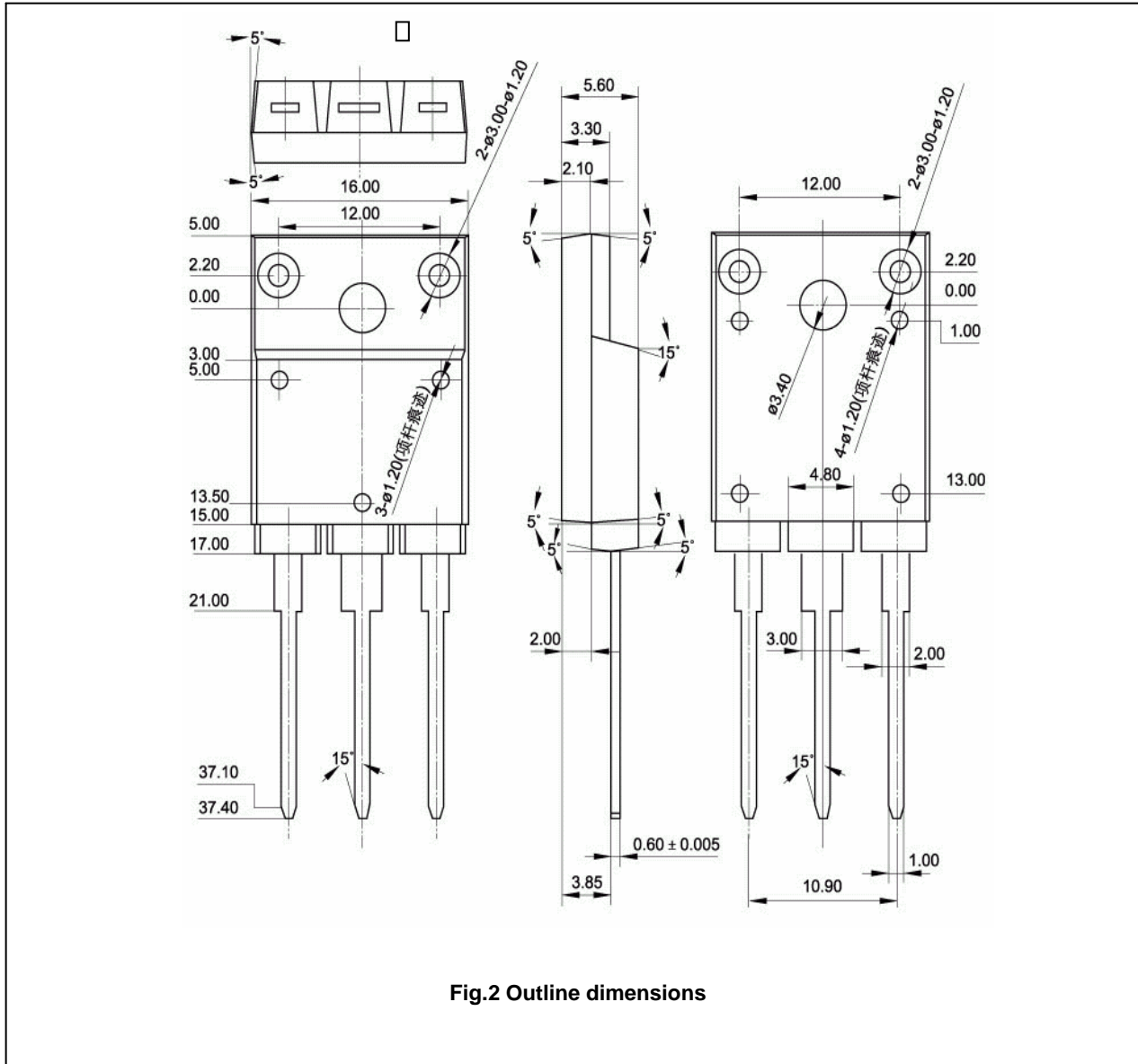


Fig.2 Outline dimensions

Silicon NPN Power Transistors

2SD1877

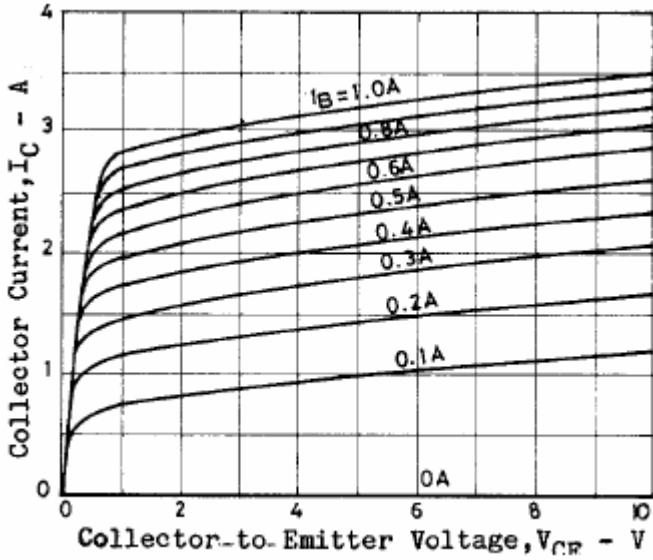


Fig.3 Static Characteristic

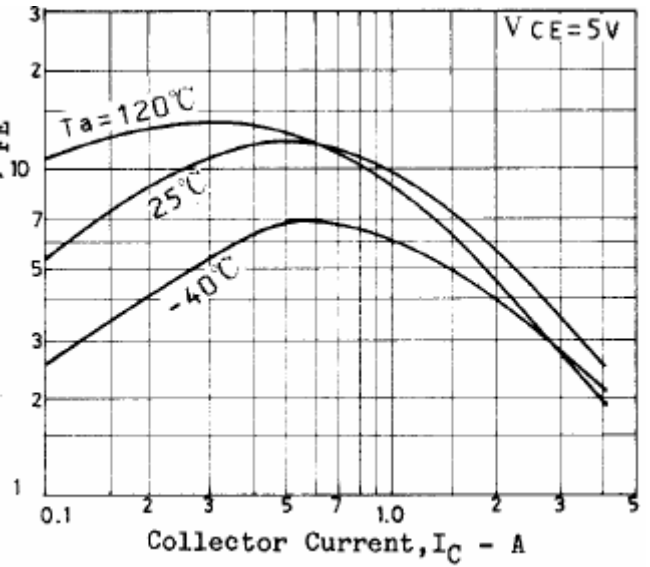


Fig.4 DC current Gain

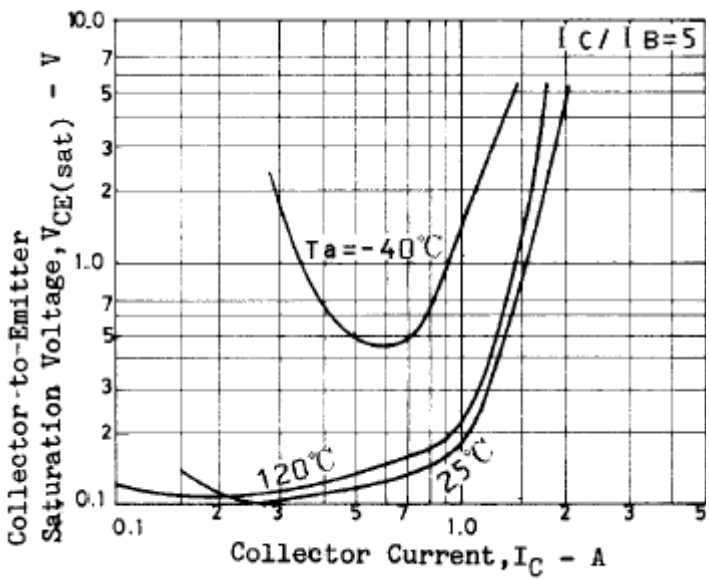


Fig.5 Collector-Emitter Saturation Voltage

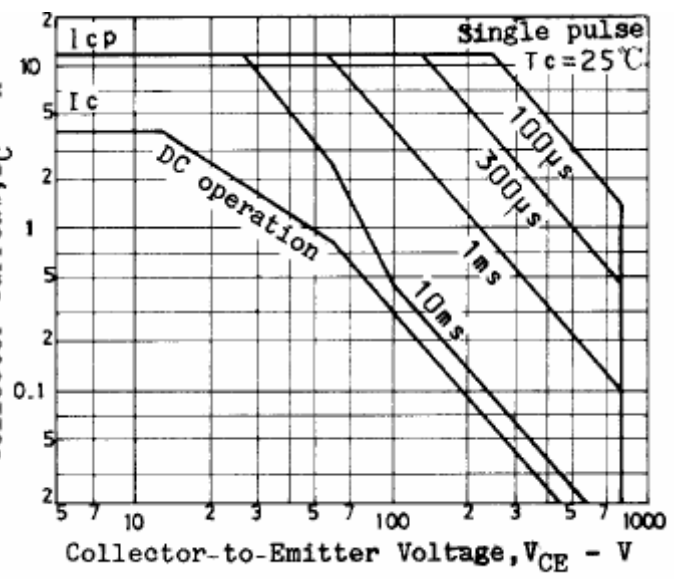


Fig.6 Safe Operating Area