

**Silicon NPN Power Transistors**

**2SD612 2SD612K**

**DESCRIPTION**

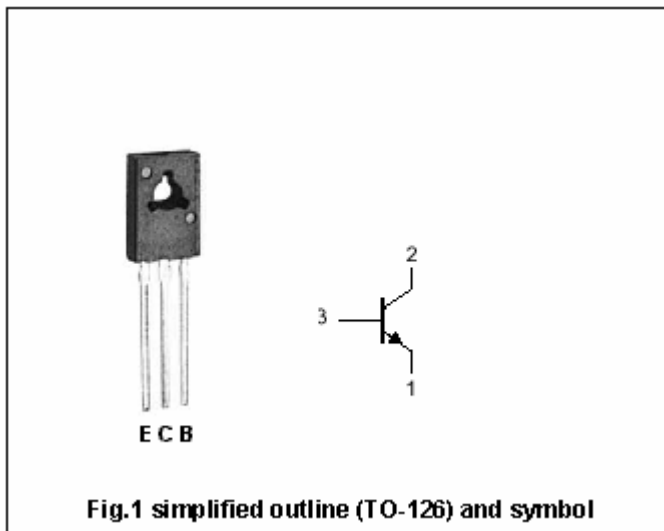
- With TO-126 package
- Complement to type 2SB632/632K
- High collector dissipation
- Wide area of safe operation

**APPLICATIONS**

- 25V/35V, 2A low-frequency power amplifier applications

**PINNING**

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



**Absolute maximum ratings(Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V <sub>CBO</sub>	Collector-base voltage	2SD612	25	V
		2SD612K	35	
V <sub>CEO</sub>	Collector-emitter voltage	2SD612	25	V
		2SD612K	35	
V <sub>EBO</sub>	Emitter-base voltage	Open collector	5	V
I <sub>C</sub>	Collector current (DC)		2	A
I <sub>CM</sub>	Collector current-peak		3	A
P <sub>D</sub>	Total power dissipation	T <sub>a</sub> =25°C	1	W
		T <sub>C</sub> =25°C	10	
T <sub>j</sub>	Junction temperature		150	°C
T <sub>stg</sub>	Storage temperature		-55~150	°C

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT	
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	2SD612	I <sub>C</sub> =1mA; R <sub>BE</sub> =∞	25			V
		2SD612K		35			
V <sub>(BR)CBO</sub>	Collector-base breakdown voltage	2SD612	I <sub>C</sub> =10μA; I <sub>E</sub> =0	25			V
		2SD612K		35			
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =10μA; I <sub>C</sub> =0	5			V	
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =1.5A; I <sub>B</sub> =0.15A		0.3	0.8	V	
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =1.5A; I <sub>B</sub> =0.15A		1.1	1.5	V	
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =20V; I <sub>E</sub> =0			1	μA	
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =4V; I <sub>C</sub> =0			1	μA	
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =0.5A; V <sub>CE</sub> =2V	60		320		
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =1.5A; V <sub>CE</sub> =2V	30				
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =50mA; V <sub>CE</sub> =10V		100		MHz	
C <sub>OB</sub>	Collector output capacitance	f=1MHz; V <sub>CB</sub> =10V		30		pF	

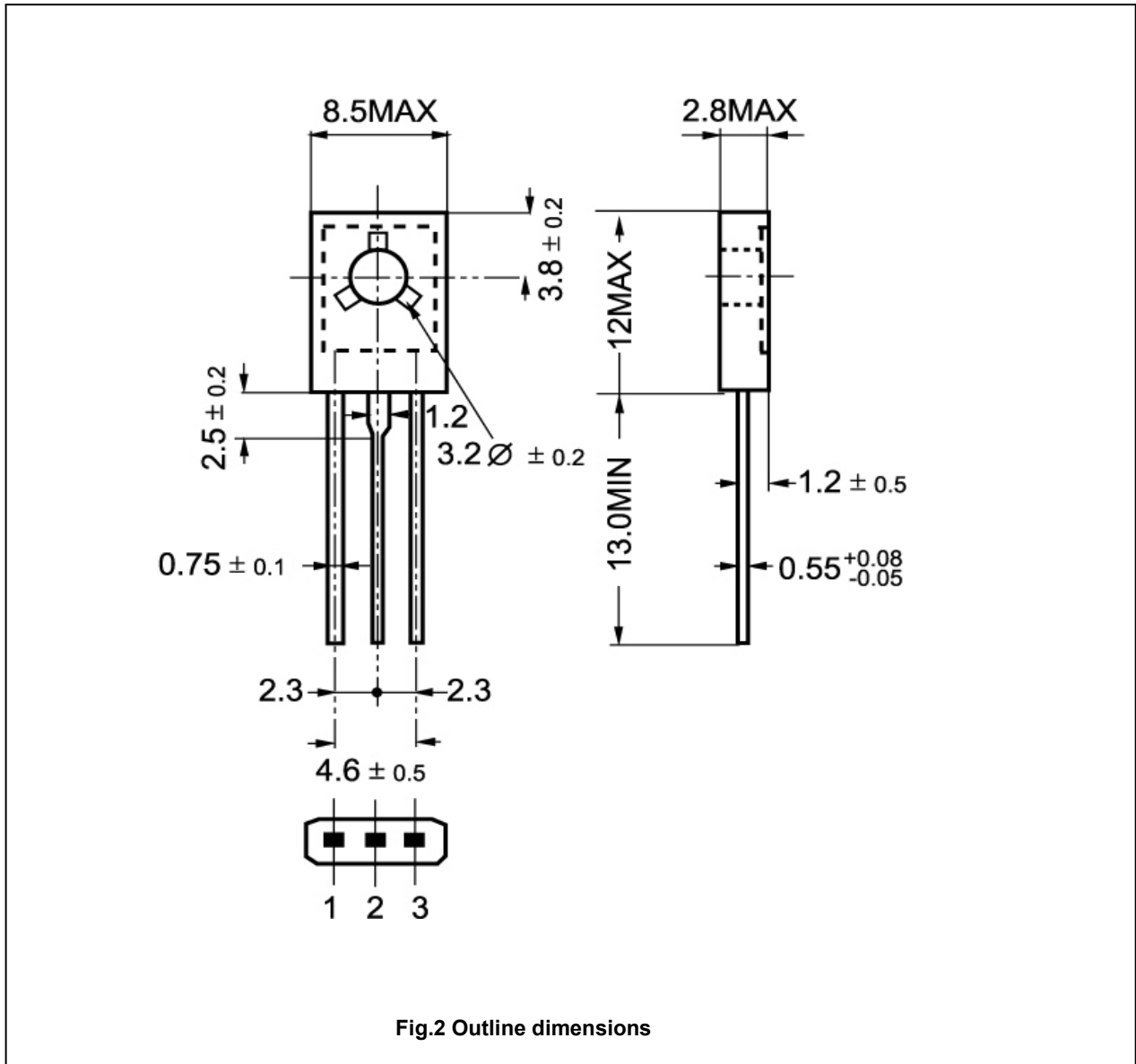
## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =500mA; V <sub>CE</sub> =12V I <sub>B1</sub> =-I <sub>B2</sub> =50mA		0.05		μs
t <sub>f</sub>	Fall time			0.10		μs
t <sub>stg</sub>	Storage time			0.40		μs

◆ h<sub>FE-1</sub> Classifications

D	E	F
60-120	100-200	160-320

PACKAGE OUTLINE



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