

Silicon NPN Power Transistors

2SD612 2SD612K

DESCRIPTION

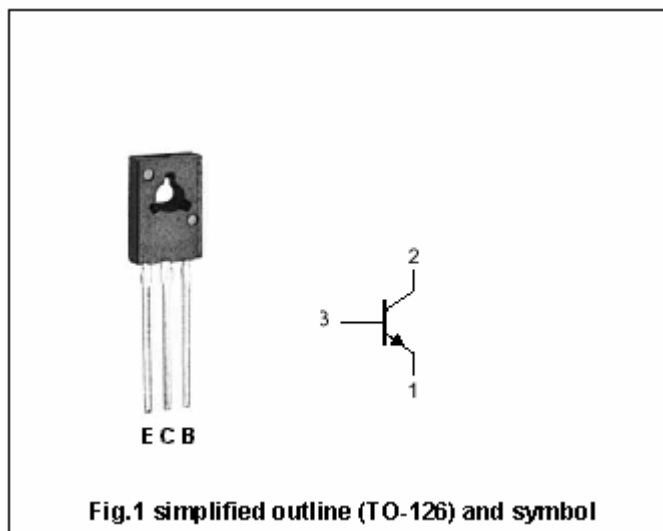
- With TO-126 package
- Complement to type 2SB632/632K
- High collector dissipation
- Wide area of safe operation

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)

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|------------------|---------------------------|--------------------|---------|------|
| V _{CBO} | Collector-base voltage | 2SD612 | 25 | V |
| | | 2SD612K | 35 | |
| V _{CEO} | Collector-emitter voltage | 2SD612 | 25 | V |
| | | 2SD612K | 35 | |
| V _{EBO} | Emitter-base voltage | Open collector | 5 | V |
| I _C | Collector current (DC) | | 2 | A |
| I _{CM} | Collector current-peak | | 3 | A |
| P _D | Total power dissipation | T _a =25 | 1 | W |
| | | T _C =25 | 10 | |
| T _j | Junction temperature | | 150 | |
| T _{stg} | Storage temperature | | -55~150 | |

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CHARACTERISTICS

T_j=25 unless otherwise specified

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

Switching times

| | | | | | | |
|------------------|--------------|---|--|------|--|-----|
| t _{on} | Turn-on time | I _C =500mA ; V _{CE} =12V I _{B1} =-I _{B2} =50mA | | 0.05 | | μ s |
| t _f | Fall time | | | 0.10 | | μ s |
| t _{stg} | Storage time | | | 0.40 | | μ s |

◆ h_{FE-1} Classifications

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

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PACKAGE OUTLINE

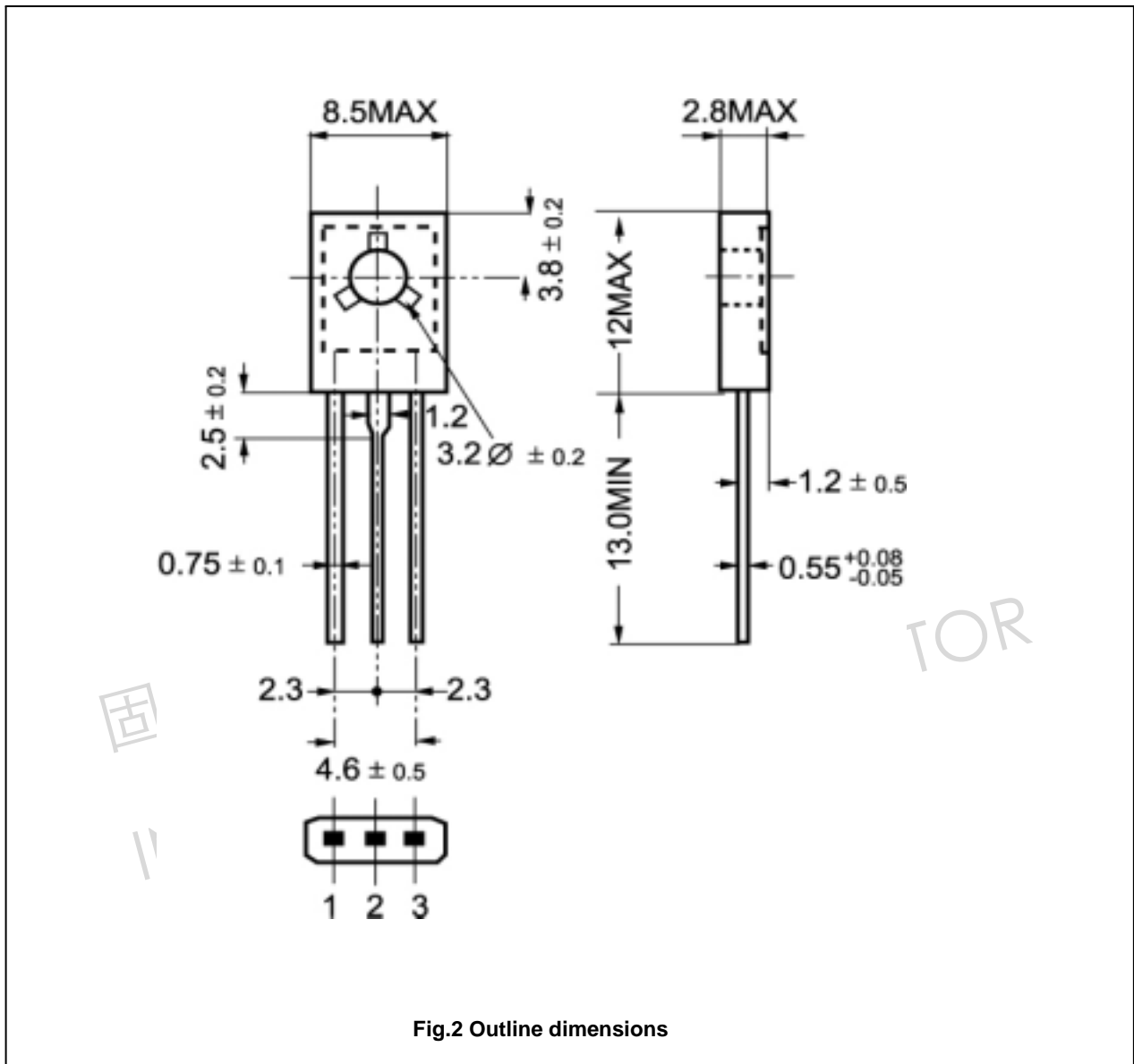


Fig.2 Outline dimensions

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