

Silicon NPN Power Transistors

2SD1275 2SD1275A

DESCRIPTION

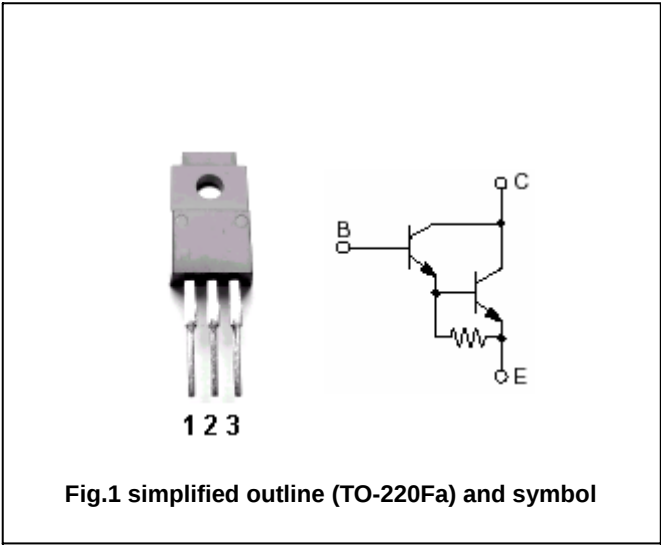
- With TO-220Fa package
- Complement to type 2SB949/949A
- High DC current gain
- High-speed switching

APPLICATIONS

- For power amplification

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Base        |
| 2   | Collector   |
| 3   | Emitter     |



Absolute maximum ratings (Ta=25 )

| SYMBOL           | PARAMETER                   |                    | CONDITIONS     | VALUE   | UNIT |
|------------------|-----------------------------|--------------------|----------------|---------|------|
| V <sub>CBO</sub> | Collector-base voltage      | 2SD1275            | Open emitter   | 60      | V    |
|                  |                             | 2SD1275A           |                | 80      |      |
| V <sub>CEO</sub> | Collector-emitter voltage   | 2SD1275            | Open base      | 60      | V    |
|                  |                             | 2SD1275A           |                | 80      |      |
| V <sub>EBO</sub> | Emitter-base voltage        |                    | Open collector | 5       | V    |
| I <sub>C</sub>   | Collector current           |                    |                | 2       | A    |
| I <sub>CM</sub>  | Collector current-Peak      |                    |                | 4       | A    |
| P <sub>C</sub>   | Collector power dissipation | T <sub>C</sub> =25 |                | 35      | W    |
|                  |                             | T <sub>a</sub> =25 |                | 2       |      |
| T <sub>j</sub>   | Junction temperature        |                    |                | 150     |      |
| T <sub>stg</sub> | Storage temperature         |                    |                | -55~150 |      |

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## 2SD1275 2SD1275A

## CHARACTERISTICS

Tj=25 unless otherwise specified

| SYMBOL        | PARAMETER                            |          | CONDITIONS                           | MIN  | TYP. | MAX   | UNIT |
|---------------|--------------------------------------|----------|--------------------------------------|------|------|-------|------|
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | 2SD1275  | $I_C=30mA$ , $I_B=0$                 | 60   |      |       | V    |
|               |                                      | 2SD1275A |                                      | 80   |      |       |      |
| $V_{CEsat}$   | Collector-emitter saturation voltage |          | $I_C=2A$ ; $I_B=8mA$                 |      |      | 2.5   | V    |
| $V_{BE}$      | Base-emitter voltage                 |          | $V_{CE}=4V$ ; $I_C=2A$               |      |      | 2.8   | V    |
| $I_{CBO}$     | Collector cut-off current            | 2SD1275  | $V_{CB}=60V$ ; $I_E=0$               |      |      | 1.0   | mA   |
|               |                                      | 2SD1275A | $V_{CB}=80V$ ; $I_E=0$               |      |      |       |      |
| $I_{CEO}$     | Collector cut-off current            | 2SD1275  | $V_{CE}=30V$ ; $I_B=0$               |      |      | 2.0   | mA   |
|               |                                      | 2SD1275A | $V_{CE}=40V$ ; $I_B=0$               |      |      |       |      |
| $I_{EBO}$     | Emitter cut-off current              |          | $V_{EB}=5V$ ; $I_C=0$                |      |      | 2.0   | mA   |
| $h_{FE-1}$    | DC current gain                      |          | $I_C=1A$ ; $V_{CE}=4V$               | 1000 |      |       |      |
| $h_{FE-2}$    | DC current gain                      |          | $I_C=2A$ ; $V_{CE}=4V$               | 2000 |      | 10000 |      |
| $f_T$         | Transition frequency                 |          | $I_C=0.5A$ ; $V_{CE}=10V$ ; $f=1MHz$ |      | 20   |       | MHz  |

## Switching times

|          |              |                                                         |  |     |  |         |
|----------|--------------|---------------------------------------------------------|--|-----|--|---------|
| $t_{on}$ | Turn-on time | $I_C=2A$ ; $I_{B1}=8mA$<br>$I_{B2}=-8mA$ ; $V_{CC}=50V$ |  | 0.5 |  | $\mu s$ |
| $t_s$    | Storage time |                                                         |  | 4.0 |  | $\mu s$ |
| $t_f$    | Fall time    |                                                         |  | 1.0 |  | $\mu s$ |

◆  $h_{FE-2}$  Classifications

|           |            |
|-----------|------------|
| Q         | R          |
| 2000-5000 | 4000-10000 |

# 2SD1275 2SD1275A

