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# 2SC3553

Silicon NPN Epitaxial

# HITACHI

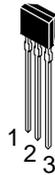
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## Application

Low frequency amplifier

## Outline

SPAK



1. Emitter
2. Collector
3. Base

**Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

| Item                         | Symbol           | Ratings     | Unit             |
|------------------------------|------------------|-------------|------------------|
| Collector to base voltage    | $V_{\text{CBO}}$ | 35          | V                |
| Collector to emitter voltage | $V_{\text{CEO}}$ | 35          | V                |
| Emitter to base voltage      | $V_{\text{EBO}}$ | 4           | V                |
| Collector current            | $I_{\text{C}}$   | 500         | mA               |
| Collector power dissipation  | $P_{\text{C}}$   | 300         | mW               |
| Junction temperature         | $T_{\text{j}}$   | 150         | $^\circ\text{C}$ |
| Storage temperature          | $T_{\text{stg}}$ | -55 to +150 | $^\circ\text{C}$ |

**Electrical Characteristics** ( $T_a = 25^\circ\text{C}$ )

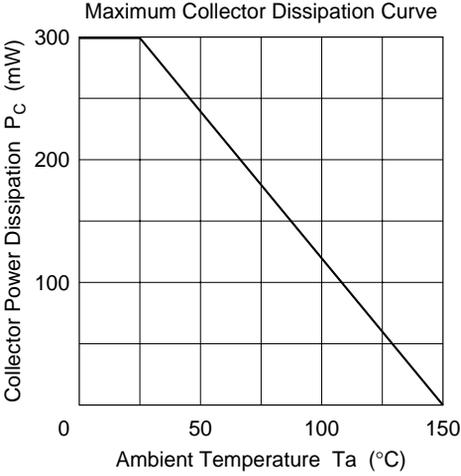
| Item                                    | Symbol                      | Min | Typ  | Max | Unit          | Test conditions   |
|---|-----------------------------|-----|------|-----|---------------|---|
| Collector to base breakdown voltage     | $V_{(\text{BR})\text{CBO}}$ | 35  | —    | —   | V             | $I_{\text{C}} = 10 \mu\text{A}$ , $I_{\text{E}} = 0$                  |
| Collector to emitter breakdown voltage  | $V_{(\text{BR})\text{CEO}}$ | 35  | —    | —   | V             | $I_{\text{C}} = 1 \text{ mA}$ , $R_{\text{BE}} = \infty$              |
| Emitter to base breakdown voltage       | $V_{(\text{BR})\text{EBO}}$ | 4   | —    | —   | V             | $I_{\text{E}} = 10 \mu\text{A}$ , $I_{\text{C}} = 0$                  |
| Collector cutoff current                | $I_{\text{CBO}}$            | —   | —    | 0.5 | $\mu\text{A}$ | $V_{\text{CB}} = 20 \text{ V}$ , $I_{\text{E}} = 0$                   |
| DC current transfer ratio               | $h_{\text{FE}1}^{*1}$       | 60  | —    | 320 |               | $V_{\text{CE}} = 3 \text{ V}$ , $I_{\text{C}} = 10 \text{ mA}$        |
|   | $h_{\text{FE}2}$            | 10  | —    | —   |               | $V_{\text{CE}} = 3 \text{ V}$ , $I_{\text{C}} = 500 \text{ mA}^{*2}$  |
| Collector to emitter saturation voltage | $V_{\text{CE}(\text{sat})}$ | —   | 0.2  | 0.6 | V             | $I_{\text{C}} = 150 \text{ mA}$ , $I_{\text{B}} = 15 \text{ mA}^{*2}$ |
| Base to emitter voltage                 | $V_{\text{BE}}$             | —   | 0.64 | —   | V             | $V_{\text{CE}} = 3 \text{ V}$ , $I_{\text{C}} = 10 \text{ mA}$        |

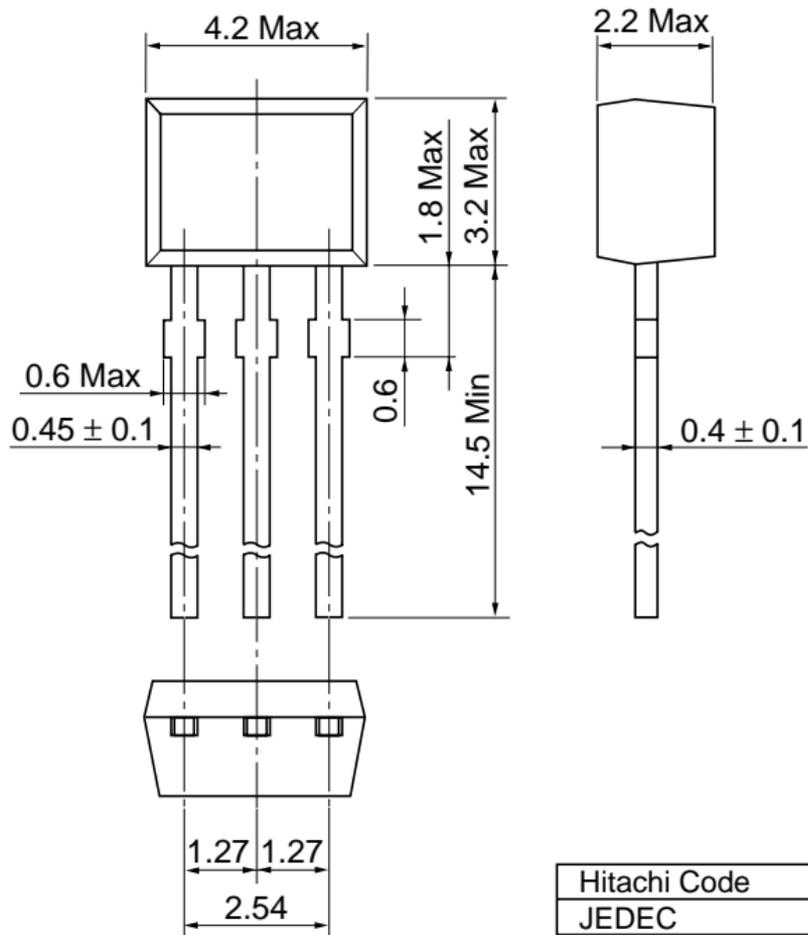
Notes: 1. The 2SC3553 is grouped by  $h_{\text{FE}1}$  as follows.

2. Pulse test

| B         | C          | D          |
|-----------|------------|------------|
| 60 to 120 | 100 to 200 | 160 to 320 |

See characteristic curves of 2SC1213.





|                          |        |
|--------------------------|--------|
| Hitachi Code             | SPAK   |
| JEDEC                    | —      |
| EIAJ                     | —      |
| Weight (reference value) | 0.10 g |

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