

# 2SC5413

Silicon NPN triple diffusion mesa type

For horizontal deflection output

## Features

- High breakdown voltage, and high reliability through the use of a glass passivation layer
- High-speed switching
- Wide area of safe operation (ASO)

## Absolute Maximum Ratings (T<sub>C</sub>=25°C)

| Parameter                    | Symbol           | Ratings     | Unit |
|------------------------------|------------------|-------------|------|
| Collector to base voltage    | V <sub>CBO</sub> | 1700        | V    |
| Collector to emitter voltage | V <sub>CES</sub> | 1700        | V    |
|                              | V <sub>CEO</sub> | 600         | V    |
| Emitter to base voltage      | V <sub>EBO</sub> | 5           | V    |
| Peak collector current       | I <sub>CP</sub>  | 30          | A    |
| Collector current            | I <sub>C</sub>   | 20          | A    |
| Base current                 | I <sub>B</sub>   | 10          | A    |
| Collector power dissipation  | P <sub>C</sub>   | 200         | W    |
|                              |                  | 3.5         |      |
| Junction temperature         | T <sub>j</sub>   | 150         | °C   |
| Storage temperature          | T <sub>stg</sub> | -55 to +150 | °C   |

## Electrical Characteristics (T<sub>C</sub>=25°C)

| Parameter                               | Symbol               | Conditions                                                            | min | typ | max | Unit |
|-----------------------------------------|----------------------|-----------------------------------------------------------------------|-----|-----|-----|------|
| Collector cutoff current                | I <sub>CBO</sub>     | V <sub>CB</sub> = 1000V, I <sub>E</sub> = 0                           |     |     | 50  | μA   |
|                                         |                      | V <sub>CB</sub> = 1700V, I <sub>E</sub> = 0                           |     |     | 1   | mA   |
| Emitter cutoff current                  | I <sub>EBO</sub>     | V <sub>EB</sub> = 5V, I <sub>C</sub> = 0                              |     |     | 50  | μA   |
| Forward current transfer ratio          | h <sub>FE</sub>      | V <sub>CE</sub> = 5V, I <sub>C</sub> = 10A                            | 7   |     | 14  |      |
| Collector to emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> = 10A, I <sub>B</sub> = 2.8A                           |     |     | 3   | V    |
| Base to emitter saturation voltage      | V <sub>BE(sat)</sub> | I <sub>C</sub> = 10A, I <sub>B</sub> = 2.8A                           |     |     | 1.5 | V    |
| Transition frequency                    | f <sub>T</sub>       | V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.1A, f = 0.5MHz              |     | 3   |     | MHz  |
| Storage time                            | t <sub>stg</sub>     | I <sub>C</sub> = 12A, I <sub>B1</sub> = 2.4A, I <sub>B2</sub> = -4.8A |     |     | 4.0 | μs   |
| Fall time                               | t <sub>f</sub>       |                                                                       |     |     | 0.3 | μs   |

