



ECH8503 — PNP Epitaxial Planar Silicon Transistor

Motor Drive Applications

Features

- Composite type, facilitating high-density mounting
- Mounting height 0.9mm
- Halogen free compliance

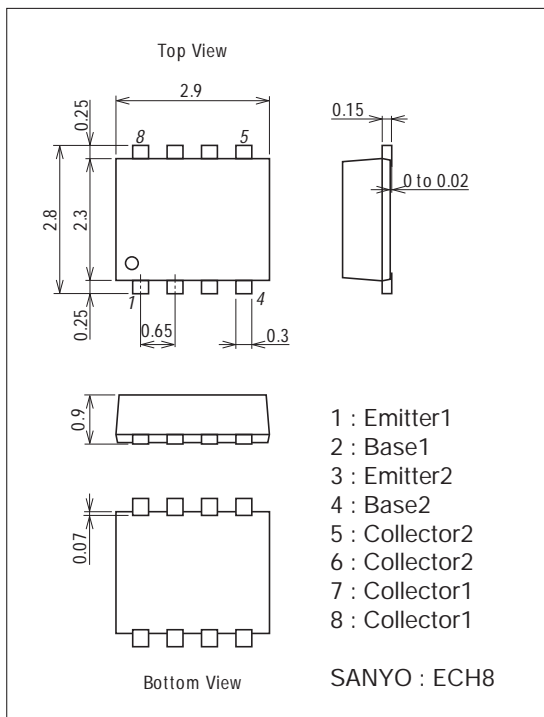
Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|------------------|---|-------------|------|
| Collector-to-Base Voltage | V _{CB0} | | -50 | V |
| Collector-to-Emitter Voltage | V _{CE0} | | -50 | V |
| Emitter-to-Base Voltage | V _{EB0} | | -6 | V |
| Collector Current | I _C | | -5 | A |
| Collector Current (Pulse) | I _{CP} | | -10 | A |
| Base Current | I _B | | -1 | A |
| Collector Dissipation | P _C | When mounted on ceramic substrate (900mm ² ×0.8mm) 1unit | 1.3 | W |
| Total Dissipation | P _T | When mounted on ceramic substrate (900mm ² ×0.8mm) | 1.6 | W |
| Junction Temperature | T _J | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Package Dimensions

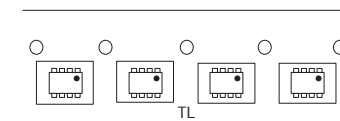
unit : mm (typ)
7011A-008



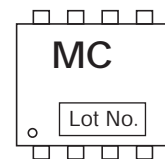
Product & Package Information

- Package : ECH8
- JEITA, JEDEC : -
- Minimum Packing Quantity : 3,000 pcs./reel

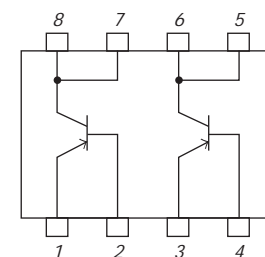
Taping Type : TL



Marking



Electrical Connection

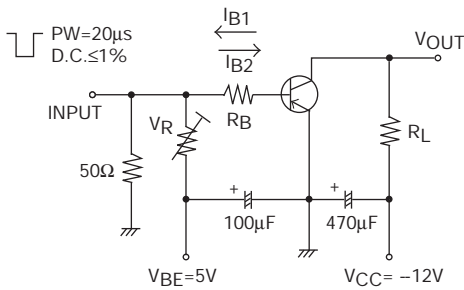


Electrical Characteristics at Ta=25°C

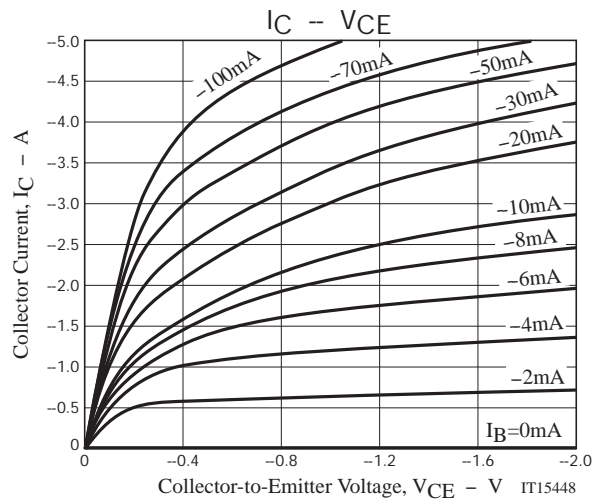
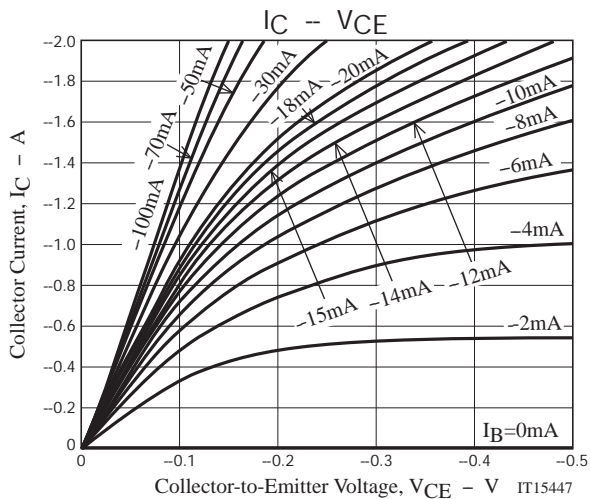
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|-----------------------|---|---------|------|------|------|
| | | | min | typ | max | |
| Collector Cutoff Current | ICBO | V _{CB} = -50V, I _E =0A | | | -0.1 | μA |
| Emitter Cutoff Current | IEBO | V _{EB} = -4V, I _C =0A | | | -0.1 | μA |
| DC Current Gain | h _{FE} | V _{CE} = -2V, I _C = -500mA | 200 | | 560 | |
| Gain-Bandwidth Product | f _T | V _{CE} = -10V, I _C = -500mA | | 280 | | MHz |
| Output Capacitance | C _{ob} | V _{CB} = -10V, f=1MHz | | 42 | | pF |
| Collector-to-Emitter Saturation Voltage | V _{CE(sat)1} | I _C = -1A, I _B = -50mA | | -60 | -100 | mV |
| | V _{CE(sat)2} | I _C = -2.5A, I _B = -125mA | | -110 | -190 | mV |
| Base-to-Emitter Saturation Voltage | V _{BE(sat)} | I _C = -2.5A, I _B = -125mA | | -0.9 | -1.1 | V |
| Collector-to-Base Breakdown Voltage | V _{(BR)CBO} | I _C = -10μA, I _E =0A | -50 | | | V |
| Collector-to-Emitter Breakdown Voltage | V _{(BR)CEO} | I _C = -1mA, R _{BE} =∞ | -50 | | | V |
| Emitter-to-Base Breakdown Voltage | V _{(BR)EBO} | I _E = -10μA, I _C =0A | -6 | | | V |
| Turn-On Time | t _{on} | See specified Test Circuit. | | 30 | | ns |
| Storage Time | t _{stg} | See specified Test Circuit. | | 170 | | ns |
| Fall Time | t _f | See specified Test Circuit. | | 17 | | ns |

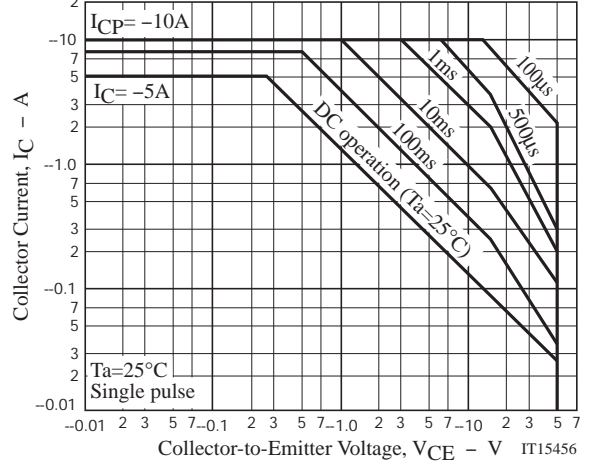
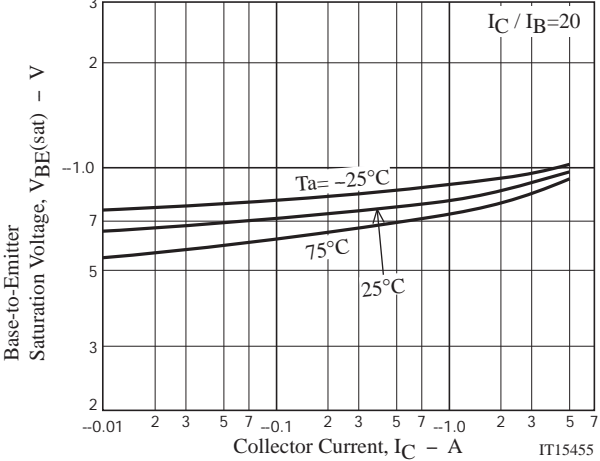
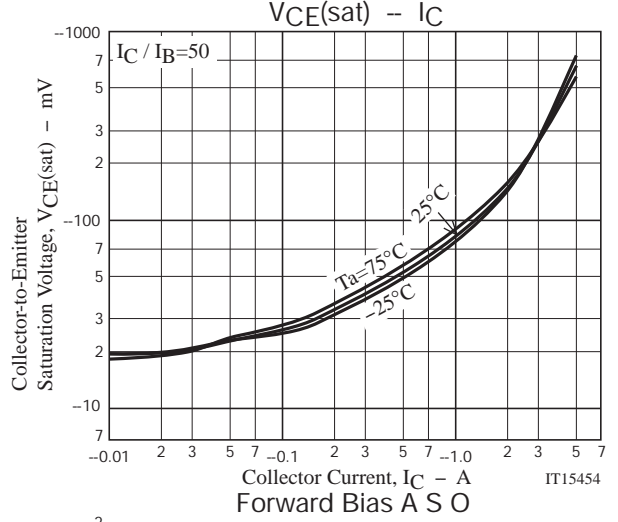
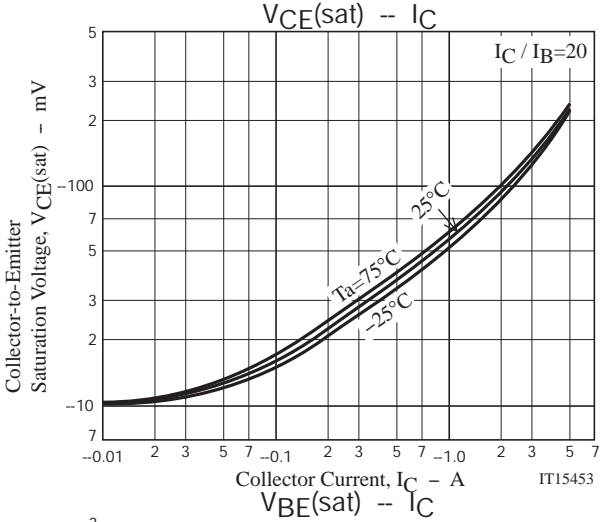
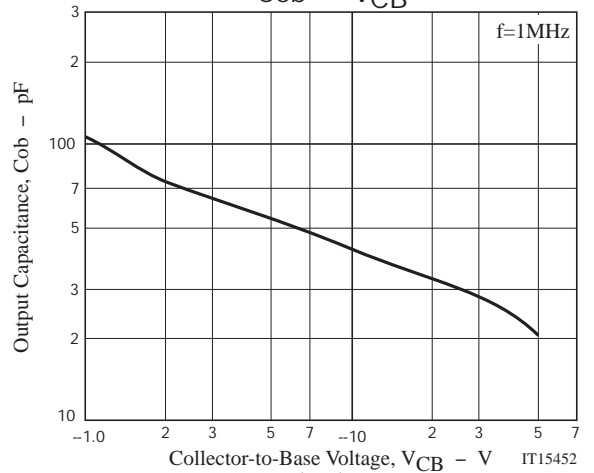
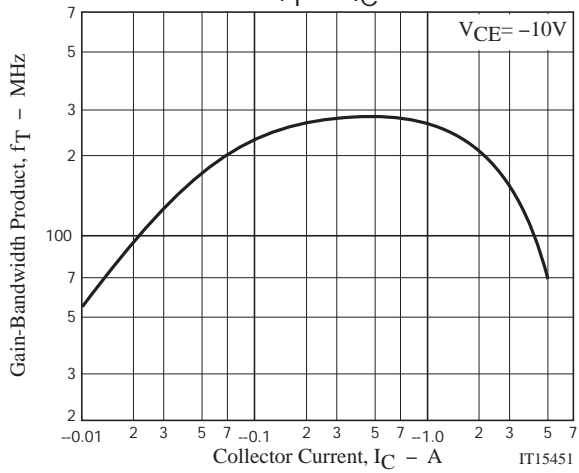
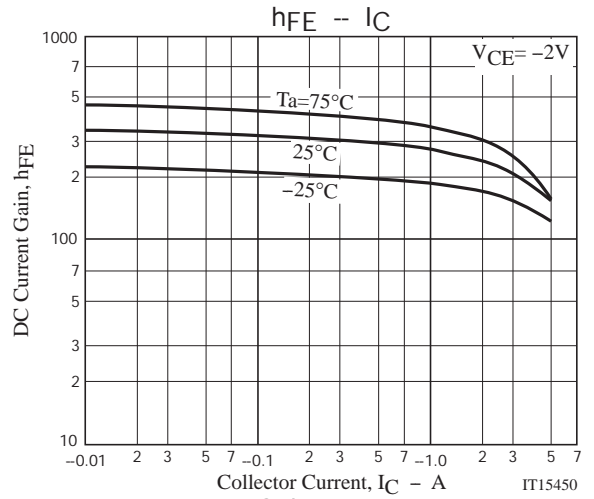
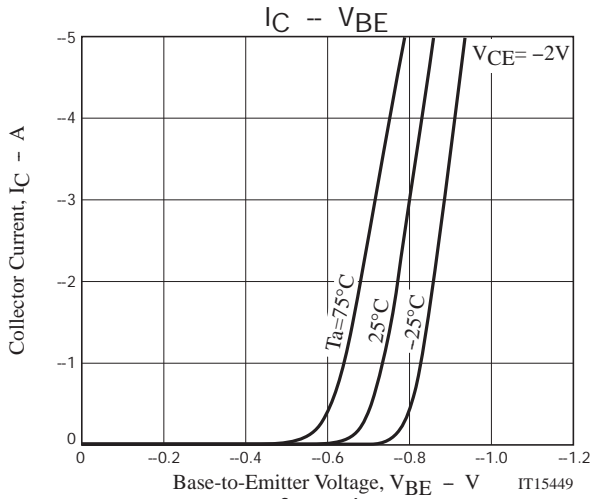
Note) The specifications shown above are for each individual transistor.

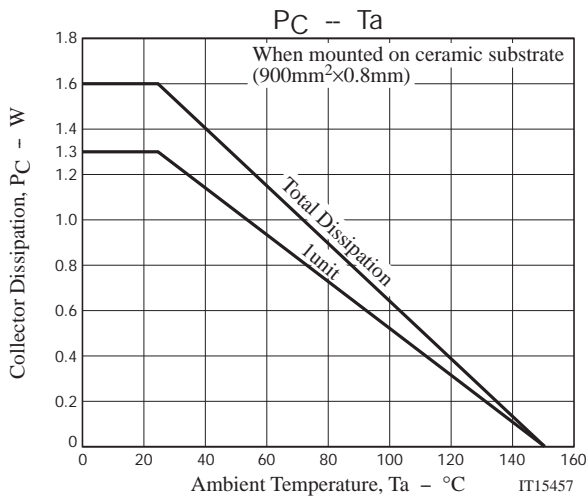
Switching Time Test Circuit



$$I_C = -20I_{B1} = 20I_{B2} = -2.5A$$







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