

TOSHIBA TRANSISTOR   SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

HN1C03F

FOR MUTING AND SWITCHING APPLICATIONS.

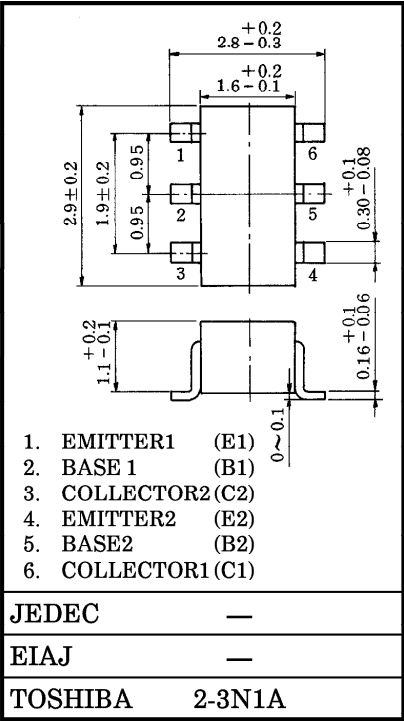
- Including Two Devices in SM6 (Super Mini Type with 6 leads)
- High Emitter-Base Voltage :  $V_{EBO}=25V$  (Min.)
- High Reverse  $h_{FE}$   
: Reverse  $h_{FE}=150$  (Typ.) ( $V_{CE}=-2V$ ,  $I_C=-4mA$ )
- Low on Resistance :  $R_{ON}=1\Omega$  (Typ.) ( $I_B=5mA$ )

MAXIMUM RATINGS ( $T_a=25^{\circ}C$ ) (Q1, Q2 COMMON)

| CHARACTERISTIC              | SYMBOL    | RATING       | UNIT        |
|-----------------------------|-----------|--------------|-------------|
| Collector-Base Voltage      | $V_{CBO}$ | 50           | V           |
| Collector-Emitter Voltage   | $V_{CEO}$ | 20           | V           |
| Emitter-Base Voltage        | $V_{EBO}$ | 25           | V           |
| Collector Current           | $I_C$     | 300          | mA          |
| Base Current                | $I_B$     | 60           | mA          |
| Collector Power Dissipation | $P_C^*$   | 300          | mW          |
| Junction Temperature        | $T_j$     | 150          | $^{\circ}C$ |
| Storage Temperature Range   | $T_{stg}$ | $-55\sim150$ | $^{\circ}C$ |

\* Total Rating

Unit in mm

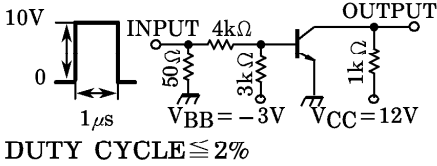


Weight : 0.015g

961001EAA2

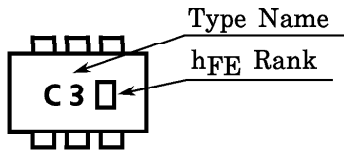
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ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Q1, Q2 COMMON)

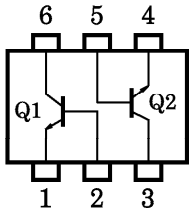
| CHARACTERISTIC                       |              | SYMBOL                  | TEST CONDITION                                                                                        | MIN. | TYP.  | MAX. | UNIT |
|--------------------------------------|--------------|-------------------------|-------------------------------------------------------------------------------------------------------|------|-------|------|------|
| Collector Cut-off Current            |              | ICBO                    | V <sub>CB</sub> = 50V, I <sub>E</sub> = 0                                                             | —    | —     | 0.1  | μA   |
| Emitter Cut-off Current              |              | IEBO                    | V <sub>EB</sub> = 25V, I <sub>C</sub> = 0                                                             | —    | —     | 0.1  | μA   |
| DC Current Gain                      |              | h <sub>FE</sub> ( Note) | V <sub>CE</sub> = 2V, I <sub>C</sub> = 4mA                                                            | 200  | —     | 1200 |      |
| Collector-Emitter Saturation Voltage |              | V <sub>CE</sub> (sat)   | I <sub>C</sub> = 30mA, I <sub>B</sub> = 3mA                                                           | —    | 0.042 | 0.1  | V    |
| Base-Emitter Voltage                 |              | V <sub>BE</sub>         | V <sub>CE</sub> = 2V, I <sub>C</sub> = 4mA                                                            | —    | 0.61  | —    | V    |
| Transition Frequency                 |              | f <sub>T</sub>          | V <sub>CE</sub> = 6V, I <sub>C</sub> = 4mA                                                            | —    | 30    | —    | MHz  |
| Collector Output Capacitance         |              | C <sub>ob</sub>         | V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz                                                   | —    | 4.8   | 7    | pF   |
| Switching Time                       | Turn-on Time | t <sub>on</sub>         | <br>DUTY CYCLE ≤ 2% | —    | 160   | —    | ns   |
|                                      | Storage Time | t <sub>stg</sub>        |                                                                                                       | —    | 500   | —    |      |
|                                      | Fall Time    | t <sub>f</sub>          |                                                                                                       | —    | 130   | —    |      |

Note: h<sub>FE</sub> Classification  
A : 200~700, B : 350~1200

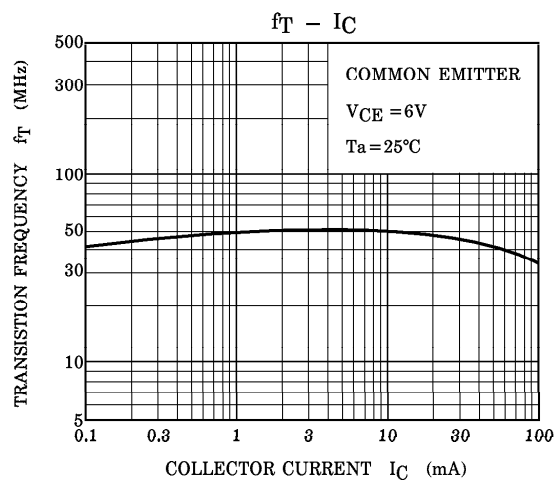
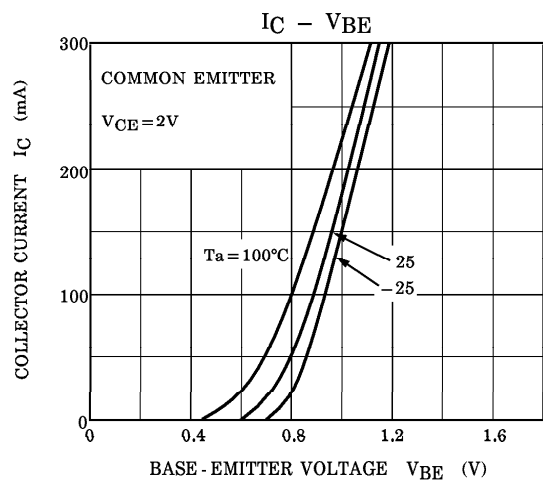
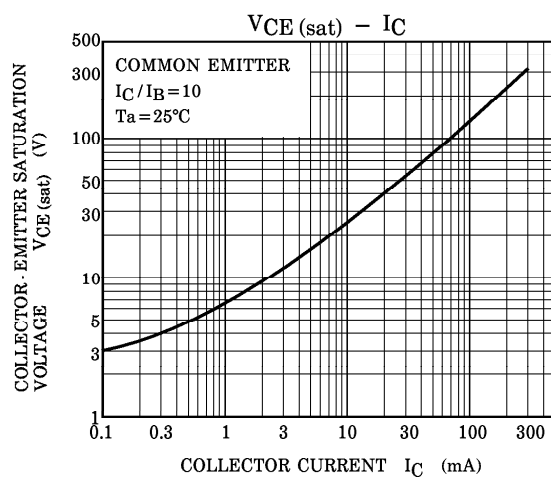
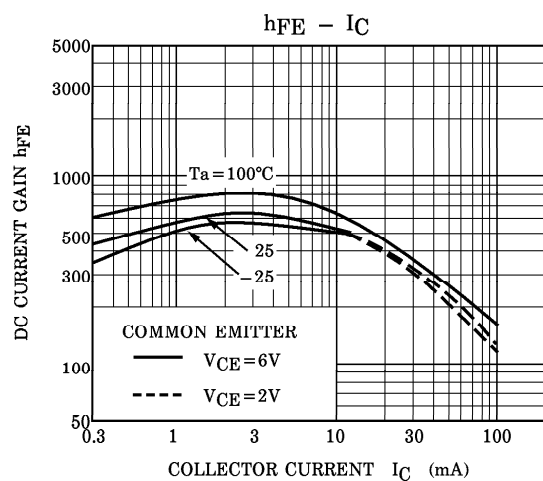
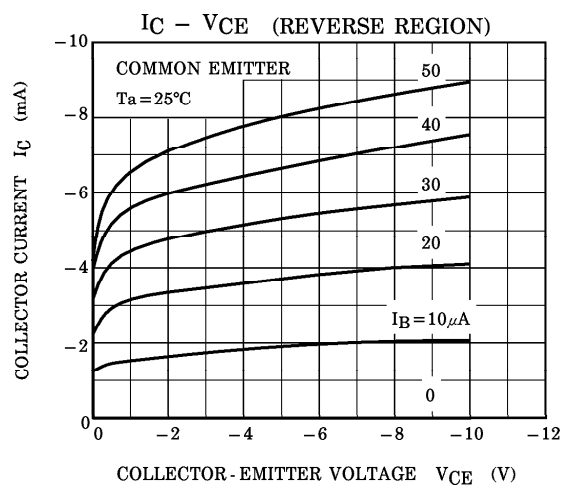
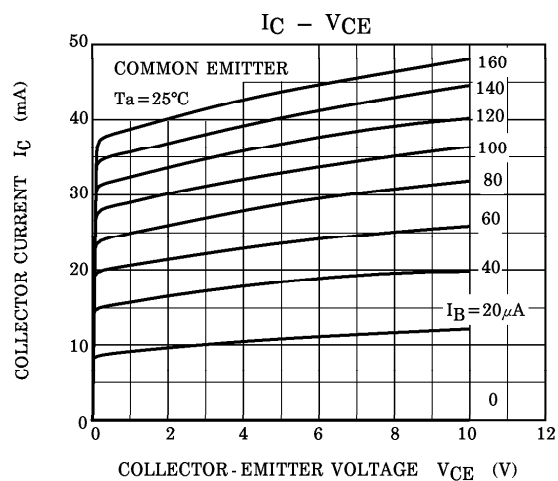
MARKING



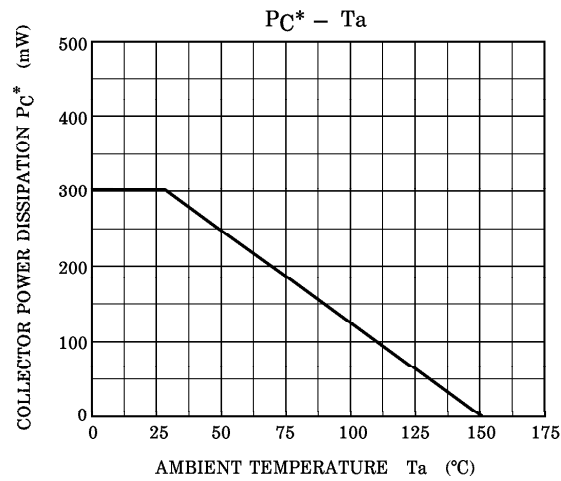
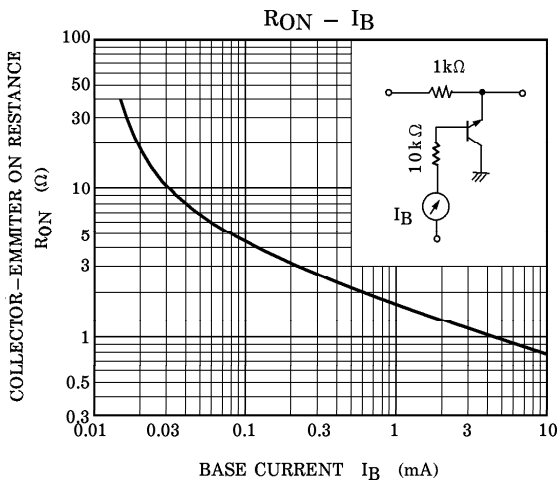
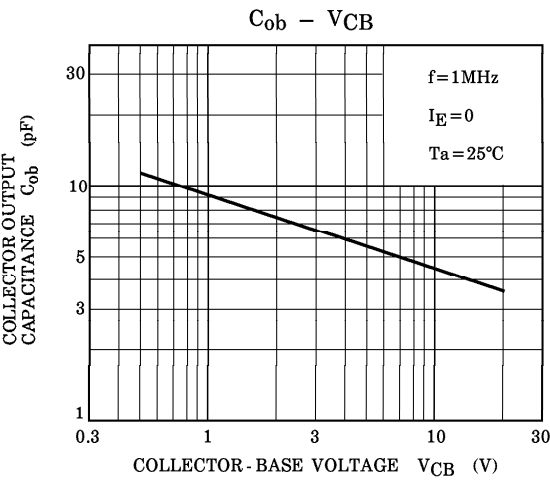
EQUIVALENT CIRCUIT (TOP VIEW)



(Q1, Q2 COMMON)



(Q1, Q2 COMMON)



\*: Total Rating