



TSC2411D

General Purpose Dual NPN Transistor

SOT-363



Pin assignment:

- | | |
|----------------|----------------|
| 1. Emitter 1 | 6. Collector 1 |
| 2. Base 1 | 5. Base 2 |
| 3. Collector 2 | 4. Emitter 2 |

$BV_{CEO} = 40V$

$I_C = 600mA$

$V_{CE(SAT)}, = 0.2V(\text{typ.}) @ I_C / I_B = 500mA / 50mA$

Features

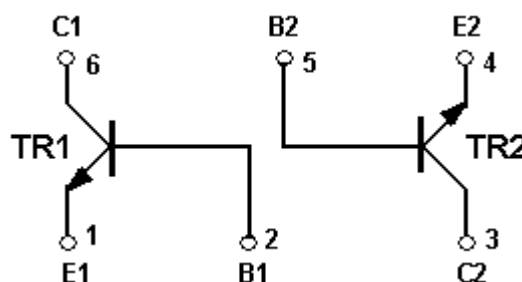
- ◇ Two TSC2411 chips in a SOT-363 package
- ◇ Transistor elements are independent, eliminating interference
- ◇ Optimal for low voltage operation

Structure

- ◇ Epitaxial planar type.
- ◇ Mounting possible with SOT-323 automatic mounting machines.
- ◇ Complementary to TSA1036DCU6

Ordering Information

| Part No. | Packing | Package | Marking |
|-------------|--------------|---------|---------|
| TSC2411DCU6 | 3kpcs / reel | SOT-363 | 1PR |



Absolute Maximum Rating ($T_a = 25^\circ C$ unless otherwise noted)

| Parameter | Symbol | Limit | Unit |
|--|-----------|--------------|------------|
| Collector-Base Voltage | V_{CBO} | 60V | V |
| Collector-Emitter Voltage | V_{CEO} | 40V | V |
| Emitter-Base Voltage | V_{EBO} | 6 | V |
| Collector Current | I_C | 0.6 | A |
| Collector Power Dissipation (note) | P_D | 200 (total) | mW |
| Operating Junction Temperature | T_J | +150 | $^\circ C$ |
| Operating Junction and Storage Temperature Range | T_{STG} | - 55 to +150 | $^\circ C$ |

Note: 1. 150mW per element must not be exceeded.

Electrical Characteristics ($T_a = 25^\circ C$ unless otherwise noted)

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|--------------------------------------|---------------------------------------|----------------|-----|------|------|---------|
| Collector-Base Voltage | $I_C = 100\mu A, I_E = 0$ | BV_{CBO} | 60 | -- | -- | V |
| Collector-Emitter Breakdown Voltage | $I_C = 1mA, I_B = 0$ | BV_{CEO} | 40 | -- | -- | V |
| Emitter-Base Breakdown Voltage | $I_E = 10\mu A, I_C = 0$ | BV_{EBO} | 6 | -- | -- | V |
| Collector Cutoff Current | $V_{CE} = 35V, V_{EB} = 0.4V$ | I_{CE} | -- | -- | 0.1 | μA |
| Collector-Emitter Saturation Voltage | $I_C / I_B = 150mA / 15mA$ | $V_{CE(SAT)1}$ | -- | -- | 0.4 | V |
| Collector-Emitter Saturation Voltage | $I_C / I_B = 500mA / 50mA$ | $V_{CE(SAT)2}$ | -- | 0.20 | 0.75 | V |
| DC Current Transfer Ratio | $V_{CE} = 1V, I_C = 100\mu A$ | h_{FE1} | 20 | -- | -- | |
| | $V_{CE} = 1V, I_C = 1mA$ | h_{FE2} | 40 | -- | -- | |
| | $V_{CE} = 1V, I_C = 10mA$ | h_{FE3} | 80 | -- | -- | |
| | $V_{CE} = 1V, I_C = 150mA$ | h_{FE4} | 82 | -- | 390 | |
| | $V_{CE} = 2V, I_C = 500mA$ | h_{FE5} | 40 | -- | -- | |
| Transition Frequency | $V_{CE} = 5V, I_C = 20mA, f = 100MHz$ | f_T | -- | 250 | -- | MHz |
| Output Capacitance | $V_{CB} = 5V, f = 1MHz$ | C_{ob} | -- | 6 | -- | pF |

Note : pulse test: pulse width $\leq 380\mu s$, duty cycle $\leq 2\%$

Electrical Characteristics Curve

Figure 1. Current Gain vs Collector Current

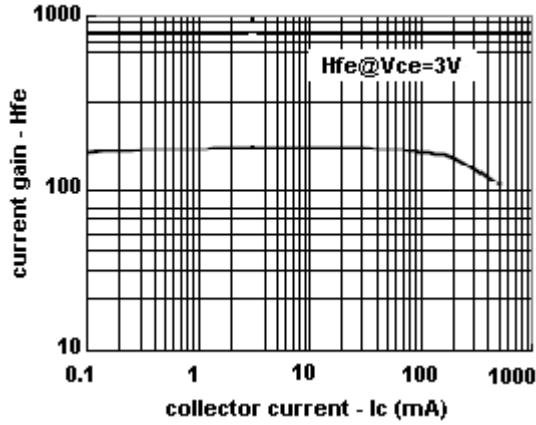


Figure 2. Saturation Voltage vs Collector Current

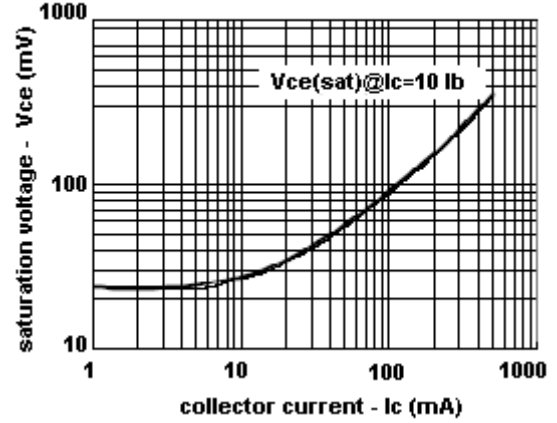


Figure 3. Saturation Voltage vs Collector Current

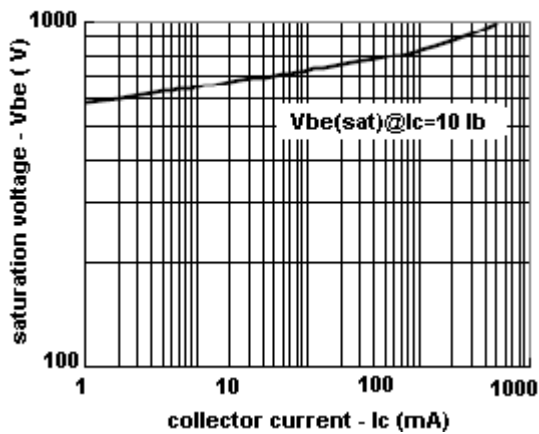


Figure 4. Power Derating Curves

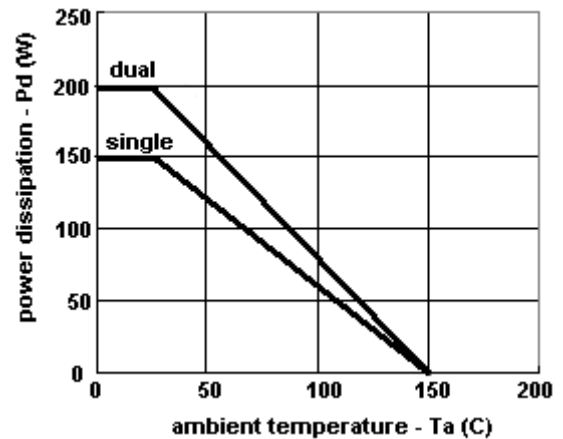
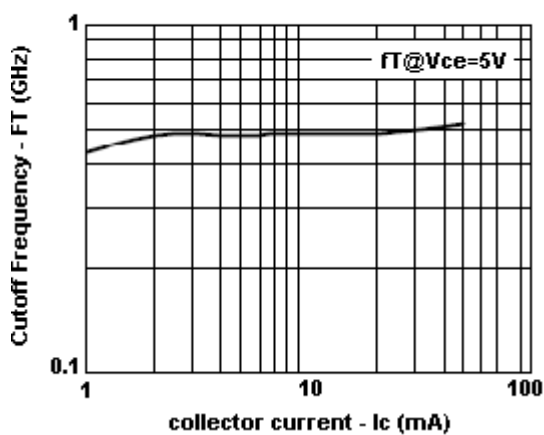
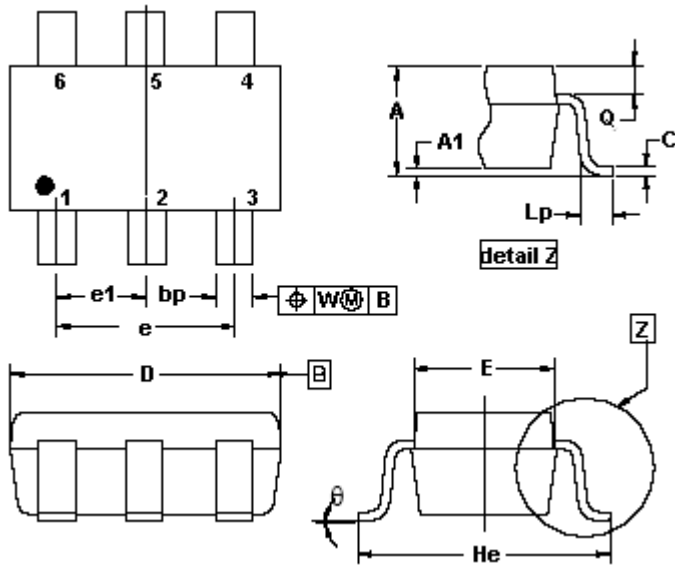


Figure 5. Cutoff Frequency vs Collector Current



SOT-363 Mechanical Drawing



| SOT-363 DIMENSION | | | | |
|-------------------|-------------|------|-------------|-------|
| DIM | MILLIMETERS | | INCHES | |
| | MIN | MAX | MIN | MAX |
| A | 0.80 | 1.10 | 0.031 | 0.043 |
| A1 | -- | 0.10 | -- | 0.004 |
| bp | 0.10 | 0.30 | 0.004 | 0.012 |
| C | 0.10 | 0.25 | 0.004 | 0.010 |
| D | 1.80 | 2.20 | 0.071 | 0.087 |
| E | 1.15 | 1.35 | 0.045 | 0.053 |
| e | 1.30 (typ) | | 0.052 (typ) | |
| e1 | 0.65 (typ) | | 0.026 (typ) | |
| He | 2.00 | 2.20 | 0.079 | 0.087 |
| Lp | 0.10 | 0.3 | 0.004 | 0.012 |
| Q | 0.20 (typ) | | 0.008 (typ) | |
| W | 0.20 (typ) | | 0.008 (typ) | |
| θ | 10° (typ) | | 10° (typ) | |