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[Micro Commercial Components \(MCC\)](#)
[DTC144TUA-TP](#)

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M.C.C.

Micro Commercial Components



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DTC144TUA

NPN Digital Transistor

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation, making device design easy
- Halogen free available upon request by adding suffix "-HF"

Absolute Maximum Ratings

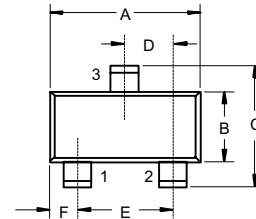
| Parameter | Symbol | Value | Unit |
|------------------------------|-----------|---------|------|
| Collector-Base Voltage | V_{CBO} | 50 | V |
| Collector-Emitter Voltage | V_{CEO} | 50 | V |
| Emitter-Base voltage | V_{EBO} | 5 | V |
| Collector Current-Continuous | I_C | 100 | mA |
| Collector Dissipation | P_C | 200 | mW |
| Junction Temperature | T_J | 150 | °C |
| Storage Temperature Range | T_{STG} | -55~150 | °C |

Electrical Characteristics

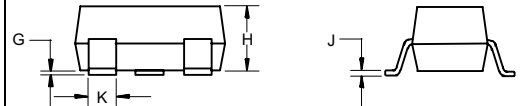
| Sym | Parameter | Min | Typ | Max | Unit |
|---------------|---|------|-----|------|-----------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_C=50\mu A, I_E=0$) | 50 | --- | --- | V |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage ($I_C=1mA, I_B=0$) | 50 | --- | --- | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage ($I_E=50\mu A, I_C=0$) | 5 | --- | --- | V |
| I_{CBO} | Collector Cut-off Current ($V_{CB}=50V, I_E=0$) | --- | --- | 0.5 | μA |
| I_{EBO} | Emitter Cut-off Current ($V_{EB}=4V, I_C=0$) | --- | --- | 0.5 | μA |
| h_{FE} | DC Current Gain ($V_{CE}=5V, I_C=1mA$) | 100 | 300 | 600 | --- |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage ($I_C=10mA, I_B=1mA$) | --- | --- | 0.3 | V |
| R_1 | Input resistance | 32.9 | 47 | 61.1 | $K\Omega$ |
| f_T | Transition Frequency ($V_{CE}=10V, I_C=-5mA, f=100MHz$) | --- | 250 | --- | MHz |

*Marking: 06

SOT-323



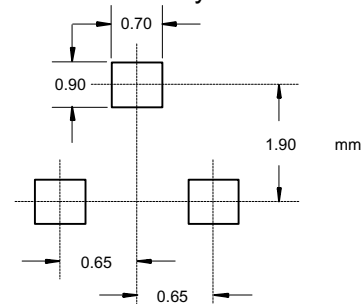
- 1: Base
- 2: Emitter
- 3: Collector



DIMENSIONS

| DIM | INCHES | | MM | | NOTE |
|-----|--------------|------|--------------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .071 | .087 | 1.80 | 2.20 | |
| B | .045 | .053 | 1.15 | 1.35 | |
| C | .083 | .096 | 2.10 | 2.45 | |
| D | .026 Nominal | | 0.65 Nominal | | |
| E | .047 | .055 | 1.20 | 1.40 | |
| F | .012 | .016 | .30 | .40 | |
| G | .000 | .004 | .000 | .100 | |
| H | .035 | .039 | .90 | 1.00 | |
| J | .004 | .010 | .100 | .250 | |
| K | .006 | .016 | .15 | .40 | |

Suggested Solder Pad Layout



DTC144TUA

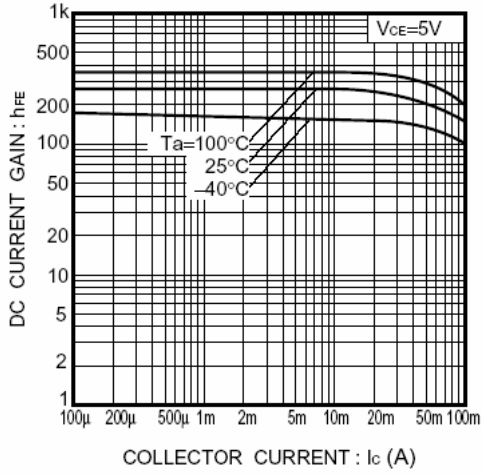


Fig.1 DC current gain vs. collector current

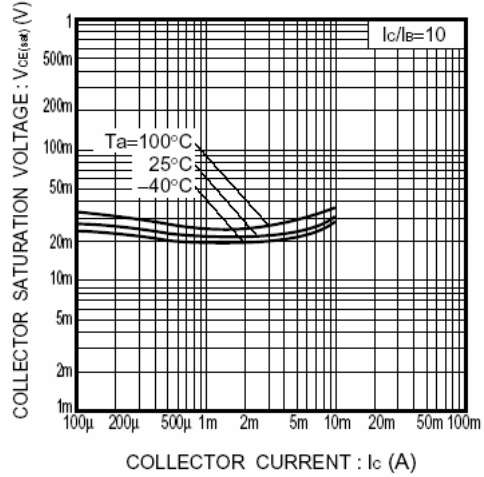
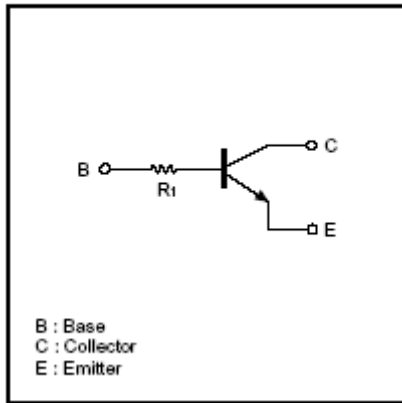


Fig.2 Collector-emitter saturation voltage vs. collector current

● Equivalent circuit





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Ordering Information :

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel; 3Kpcs/Reel |

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