



Micro Commercial Components



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DTC143ECA

Digital Transistors

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epitaxial Planar Die Construction
- Complementary PNP Types Available
- Built-In Biasing Resistors
- Marking: 23
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

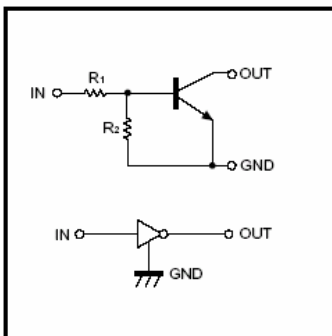
Absolute maximum ratings @ 25°C

| Symbol | Parameter | Min | Typ | Max | Unit |
|-----------|----------------------|-----|-----|-----|------|
| V_{CC} | Supply Voltage | --- | --- | 50 | V |
| I_C | Collector current | --- | 100 | --- | mA |
| V_{IN} | Input voltage | -10 | --- | +30 | V |
| P_d | Power dissipation | --- | 200 | --- | mW |
| T_j | Junction temperature | --- | 150 | --- | °C |
| T_{stg} | Storage temperature | -55 | --- | 150 | °C |

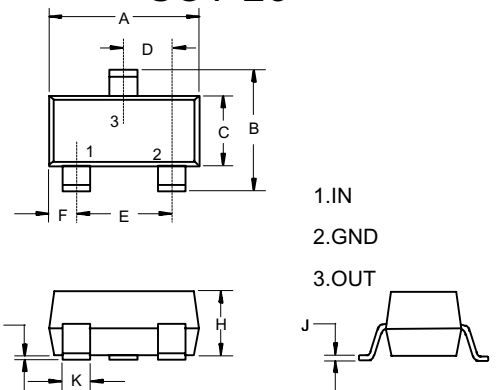
Electrical Characteristics @ 25°C

| Symbol | Parameter | Min | Typ | Max | Unit |
|--------------|--|------|-----|------|------------|
| $V_{I(off)}$ | Input voltage ($V_{CC}=5V, I_o=100\mu A$) | --- | --- | 0.5 | V |
| $V_{I(on)}$ | Input voltage ($V_o=0.3V, I_o=20mA$) | 3.0 | --- | --- | V |
| $V_{O(on)}$ | Output voltage ($I_o=10mA, I_i=0.5mA$) | --- | --- | 0.3 | V |
| I_i | Input current ($V_i=5V$) | --- | --- | 1.8 | mA |
| $I_{O(off)}$ | Output current ($V_{CC}=50V, V_i=0$) | --- | --- | 0.5 | μA |
| G_1 | DC current gain ($V_o=5V, I_o=10mA$) | 30 | --- | --- | |
| R_1 | Input resistance | 3.29 | 4.7 | 6.11 | K Ω |
| R_2/R_1 | Resistance ratio | 0.8 | 1 | 1.2 | |
| f_T | Transition frequency ($V_{CE}=10V, I_E=5mA, f=100MHz$) | --- | 250 | --- | MHz |

Equivalent circuit



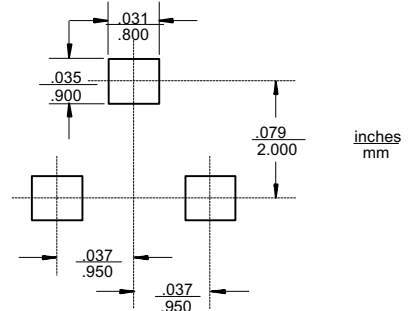
SOT-23



DIMENSIONS

| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|------|------|------|
| | MIN | MAX | MIN | MAX | |
| A | .110 | .120 | 2.80 | 3.04 | |
| B | .083 | .098 | 2.10 | 2.64 | |
| C | .047 | .055 | 1.20 | 1.40 | |
| D | .035 | .041 | .89 | 1.03 | |
| E | .070 | .081 | 1.78 | 2.05 | |
| F | .018 | .024 | .45 | .60 | |
| G | .0005 | .0039 | .013 | .100 | |
| H | .035 | .044 | .89 | 1.12 | |
| J | .003 | .007 | .085 | .180 | |
| K | .015 | .020 | .37 | .51 | |

Suggested Solder Pad Layout



Typical Characteristics

Electrical characteristic curves

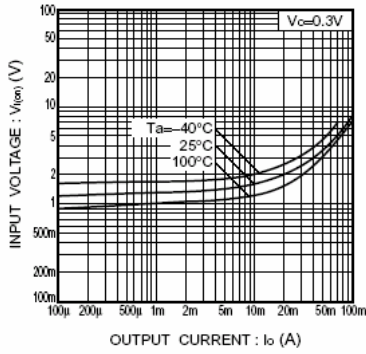


Fig.1 Input voltage vs. output current (ON characteristics)

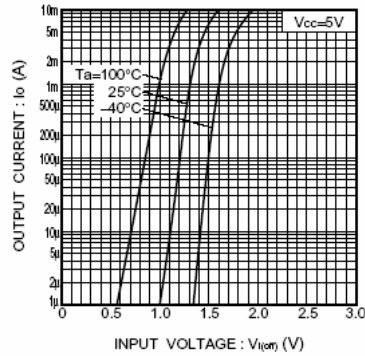


Fig.2 Output current vs. input voltage (OFF characteristics)

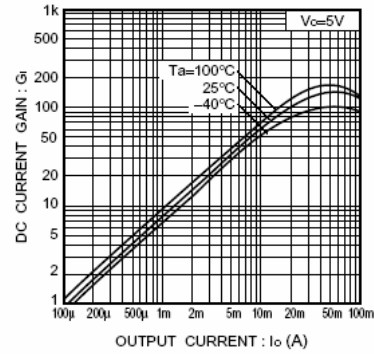


Fig.3 DC current gain vs. output current

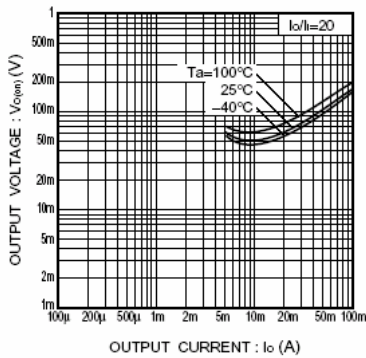


Fig.4 Output voltage vs. output current



TM

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Ordering Information :

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

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