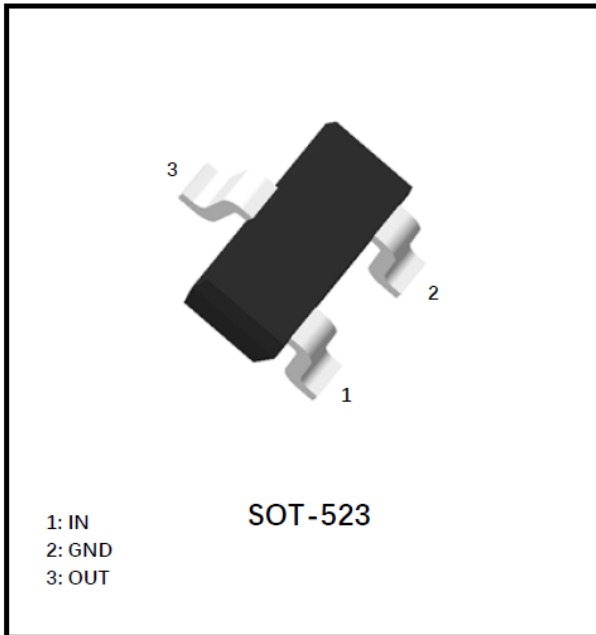


Digital Transistors (Built-in Resistors)



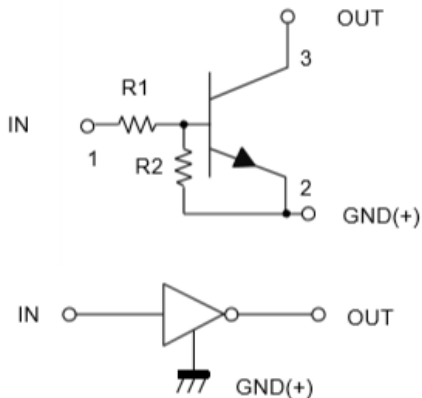
Features

- Moisture Sensitivity Level 1
- Surface mount package ideally Suited for Automatic Insertion
- Epoxy meets UL-94 V-0 flammability rating, halogen-free

Mechanical Data

- **Package:** SOT-523
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 25

Equivalent circuit



Maximum Ratings (Ta=25°C Unless otherwise specified)

| ITEM | SYMBOL | UNIT | CONDITIONS | VALUE |
|----------------------|-----------|------|------------|-------------|
| Supply Voltage | V_{CC} | V | | 50 |
| Input Voltage | V_{IN} | V | | -10 to +40 |
| Output Current | I_o | mA | | 100 |
| Power Dissipation | P_D | mW | | 150 |
| Junction Temperature | T_J | °C | | 150 |
| Storage Temperature | T_{STG} | °C | | -55 to +150 |



DTC124EE

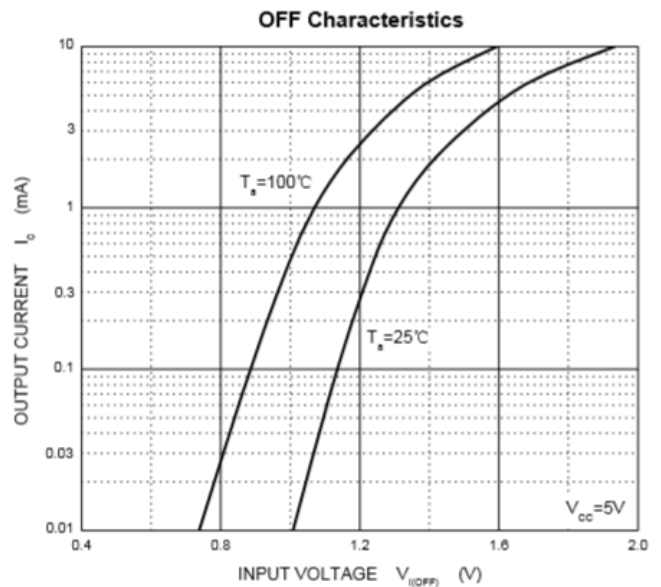
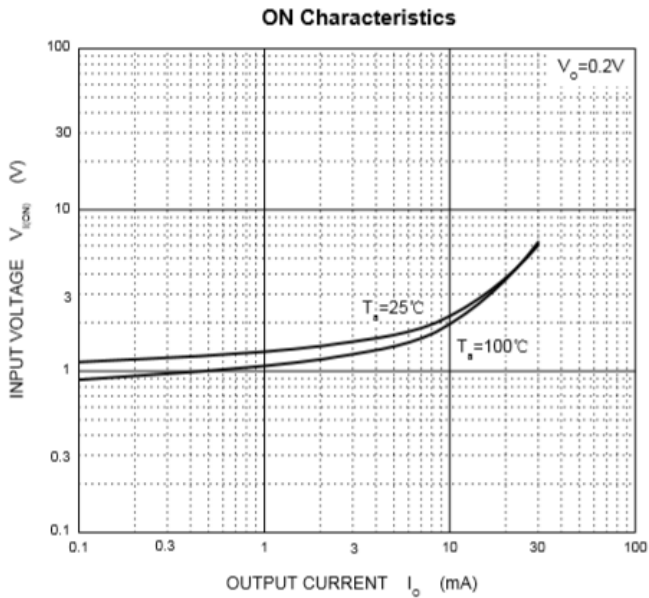
■ Electrical Characteristics (Ta=25°C unless otherwise specified)

| ITEM | SYMBOL | UNIT | CONDITIONS | MIN | TYP | MAX |
|----------------------|--------------|------------|--|------|-----|------|
| Input voltage | $V_{I(off)}$ | V | $V_{CC}=5V, I_o=100\mu A$ $V_o=0.2V, I_o=5mA$ | 0.5 | | |
| | $V_{I(on)}$ | V | | | | 3 |
| Output voltage | $V_{O(on)}$ | V | $I_o / I_i = 10mA / 0.5 mA$ | | | 0.3 |
| Input current | I_i | mA | $V_i=5V$ | | | 0.36 |
| Output current | $I_{O(off)}$ | μA | $V_{CC}=50V, V_i=0$ | | | 0.5 |
| DC current gain | G_i | | $V_o=5V, I_o=5mA$ | 56 | | |
| Input resistance | R_i | k Ω | | 15.4 | 22 | 28.6 |
| Resistance ratio | R_2/R_1 | | | 0.8 | 1 | 1.2 |
| Transition frequency | f_T | MHz | $V_o=10V, I_o=-5mA$ | | 250 | |

■ Ordering Information (Example)

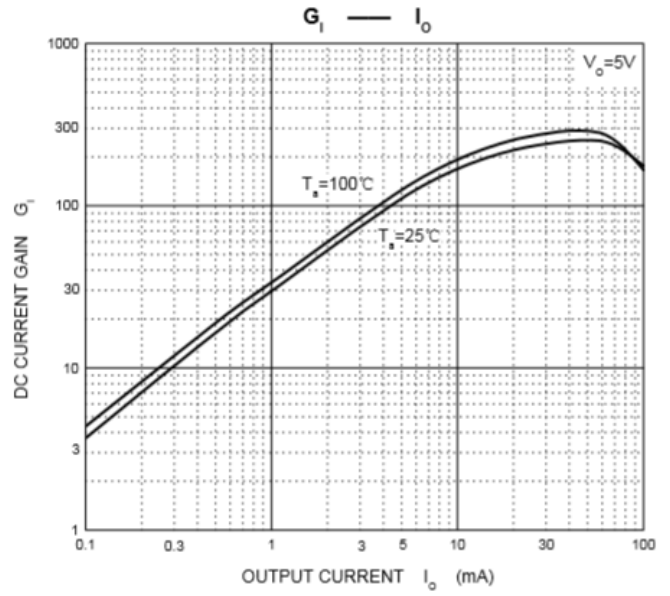
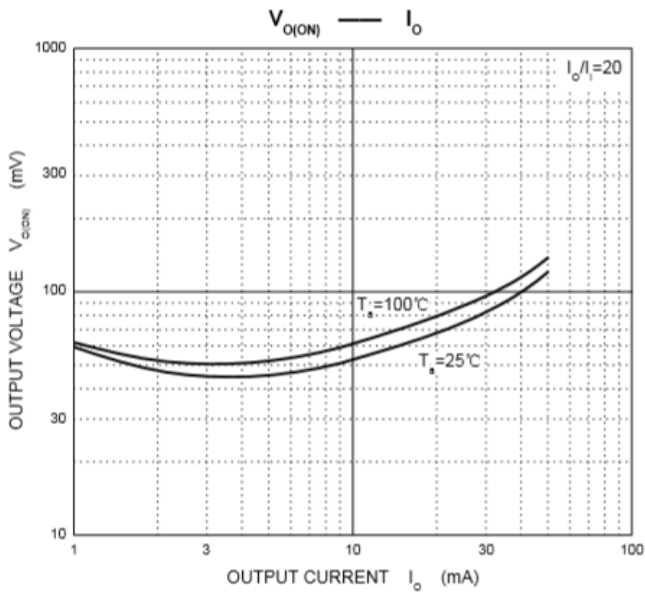
| Preferred P/N | Packing Code | Unit Weight(G) | Minimum Package(Pcs) | Inner Box Quantity(Pcs) | Outer Carton Quantity(Pcs) | Delivery Mode |
|---------------|--------------|--------------------|----------------------|-------------------------|----------------------------|---------------|
| DTC124EE | F2 | Approximate 0.0027 | 3000 | 30000 | 120000 | 7" reel |

■ Characteristics (Typical)

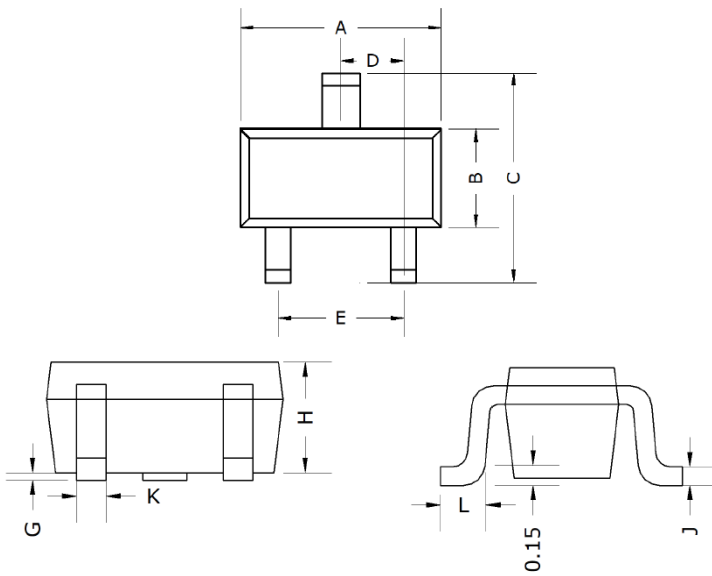




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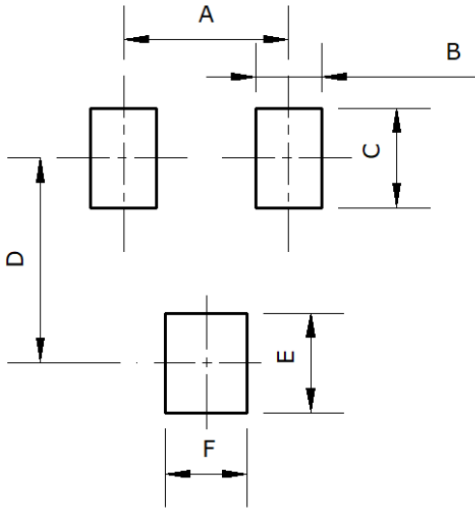
■ SOT-523 Package Outline Dimensions



| DIM | DIMENSIONS | | | |
|-----|------------|-------|---------|------|
| | INCHES | | MM | |
| | MIN | MAX | MIN | MAX |
| A | 0.059 | 0.067 | 1.50 | 1.70 |
| B | 0.030 | 0.033 | 0.75 | 0.85 |
| C | 0.057 | 0.069 | 1.45 | 1.75 |
| D | 0.020TYP | | 0.50TYP | |
| E | 0.035 | 0.043 | 0.90 | 1.10 |
| G | 0.000 | 0.004 | 0.00 | 0.10 |
| H | 0.024 | 0.031 | 0.60 | 0.80 |
| J | 0.004 | 0.008 | 0.10 | 0.20 |
| K | 0.006 | 0.014 | 0.15 | 0.35 |
| L | 0.010 | 0.018 | 0.26 | 0.46 |



■ SOT-523 Suggested Pad Layout



| DIMENSIONS | |
|------------|----------|
| DIM | MM (TYP) |
| A | 1.00 |
| B | 0.40 |
| C | 0.60 |
| D | 1.24 |
| E | 0.60 |
| F | 0.50 |



DTC124EE

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