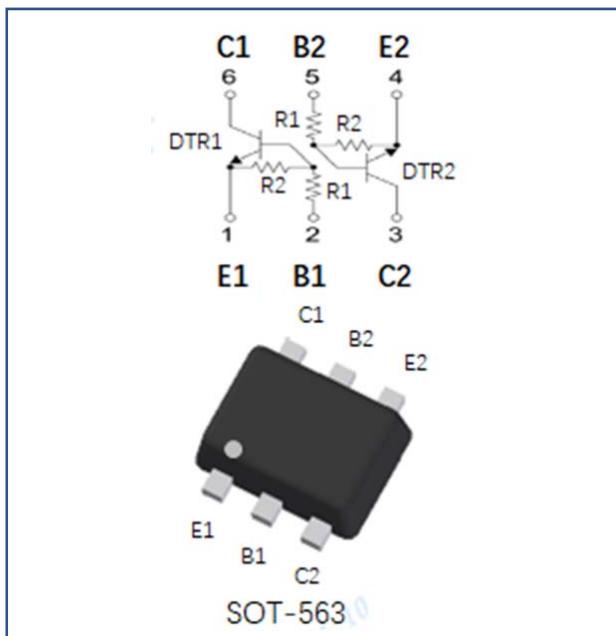


Dual NPN Digital Transistors (Built-in Resistors)



Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic Insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package:** SOT-563
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

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

| Item | Symbol | Unit | Conditions | Value |
|----------------------|------------------|------|------------|-------------|
| Device marking code | | | | H13 |
| Supply voltage | V _{CC} | V | | 50 |
| Input voltage | V _{IN} | V | | -5 to +30 |
| Output current | I _O | mA | | 100 |
| Power dissipation | P _D | mW | | 150 |
| Junction temperature | T _J | °C | | -55 to +150 |
| Storage temperature | T _{STG} | °C | | -55 to +150 |

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

| Item | Symbol | Unit | Conditions | Min | Typ | Max |
|----------------------|--------------------------------|------|---|------|-----|------|
| Input voltage | VI _(off) | V | V _{CC} =5V, I _C =100uA | 0.5 | | |
| | VI _(on) | V | V _O =0.3V, I _C =5mA | | | 1.3 |
| Output voltage | V _{O(on)} | V | I _O /I _i =5mA/0.25 mA | | | 0.3 |
| Input current | I _i | mA | V _i =5V | | | 1.8 |
| Output current | I _{O(off)} | uA | V _{CC} =50V, V _i =0 | | | 0.5 |
| DC current gain | G _i | | V _O =5V, I _O =10mA | 80 | | |
| Input resistance | R ₁ | kΩ | | 3.29 | 4.7 | 6.11 |
| Resistance ratio | R ₂ /R ₁ | | | 8 | 10 | 12 |
| Transition frequency | f _T | MHz | V _{CE} =10V, I _E =5mA, f=100MHz | | 250 | |

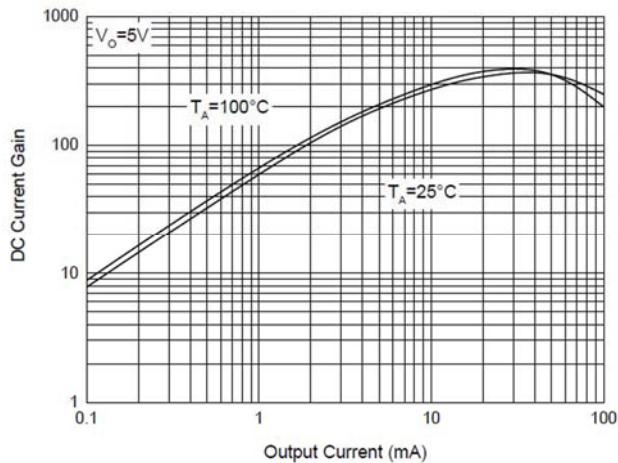
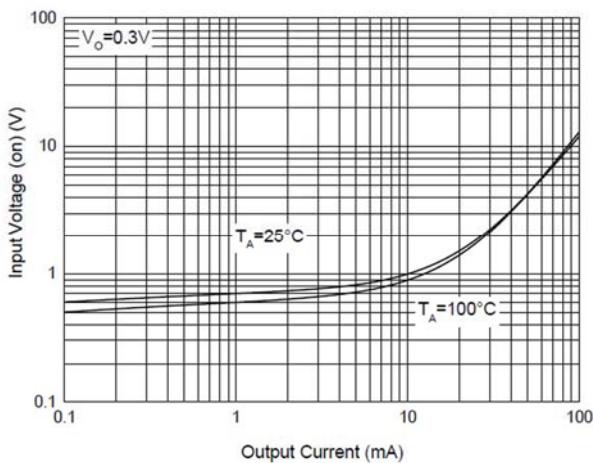
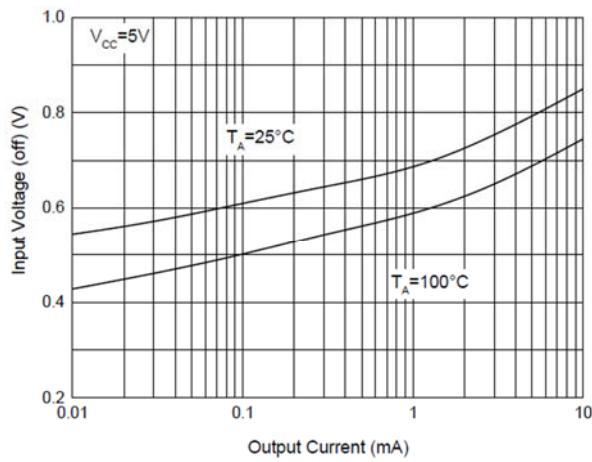
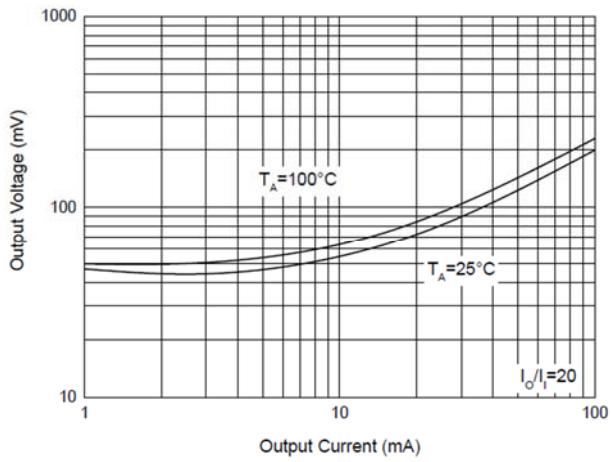
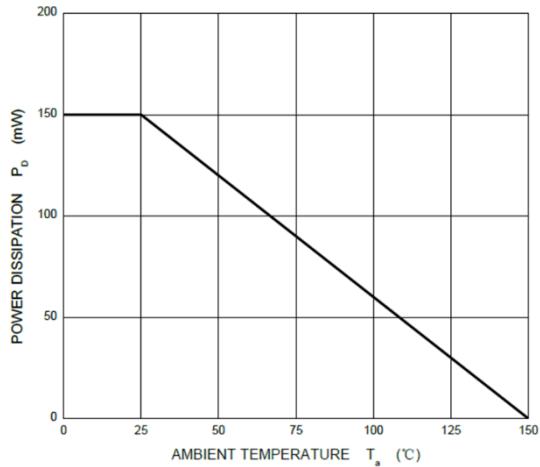
■ Thermal Characteristics

| Parameter | Symbol | Unit | Value |
|---|----------------------------------|------|-------|
| Thermal resistance, junction-to-ambient | R _{θJ-A} ⁽¹⁾ | °C/W | 833 |
| Thermal resistance, junction-to-case | R _{θJ-C} ⁽¹⁾ | °C/W | 667 |

Note: Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 25.4mm*25.4mm copper pad areas

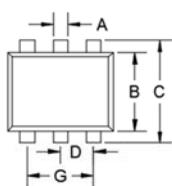
■ Ordering Information

| Preferred P/N | Packing code | Unit weight(g) | Minimum package(pcs) | Inner box quantity(pcs) | Outer carton quantity(pcs) | Delivery mode |
|---------------|--------------|--------------------|----------------------|-------------------------|----------------------------|---------------|
| EMH13 | F2 | Approximate 0.0035 | 3000 | 30000 | 120000 | 7" reel |

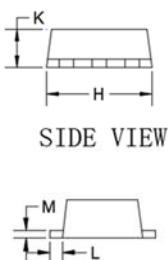
■ Characteristics**Fig 1: DC Current Gain Characteristics****Fig 2: Input Voltage (On) Characteristics****Fig 3: Input Voltage (Off) Characteristics****Fig 4: Output Voltage Characteristics****Fig 5: P_D -Ta Curve**

■ Outline Dimensions

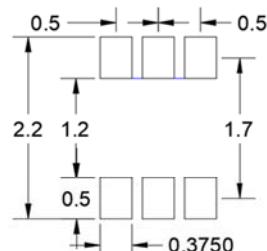
SOT-563



TOP VIEW



SIDE VIEW



单位: mm

SUGGESTED SOLDER PAD LAYOUT

| DIMENSIONS | | | | |
|------------|--------|-------|-------|-------|
| DIM | INCHES | | MM | |
| | MIN | MAX | MN | MAX |
| A | 0.006 | 0.011 | 0.150 | 0.300 |
| B | 0.043 | 0.051 | 1.100 | 1.300 |
| C | 0.059 | 0.067 | 1.500 | 1.700 |
| D | 0.016 | 0.024 | 0.400 | 0.600 |
| G | 0.035 | 0.043 | 0.900 | 1.100 |
| H | 0.059 | 0.067 | 1.500 | 1.700 |
| K | 0.021 | 0.026 | 0.550 | 0.650 |
| L | 0.004 | 0.011 | 0.100 | 0.300 |
| M | 0.004 | 0.007 | 0.100 | 0.180 |

Note:

1. All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位, 除非另有说明]
2. General tolerances: $\pm 0.10\text{mm}$ unless otherwise specified.
[通用公差为 $\pm 0.10\text{mm}$, 除非另有说明]
3. Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
4. All dimensions shown are exclusive of burrs and gate residues.
Burr and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
5. Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
6. Dimensions B and H are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[B和H是塑封体的外部极限尺寸, 不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺, 但是包含了包封错位的最大尺寸]
7. Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面, 共面性最大为0.1mm]
8. ★It is the key size.
[★ 标记为关键尺寸]



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