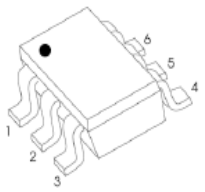
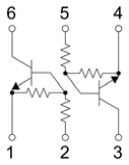
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

# Digital Transistors (Built-in Resistors)

## UMH9N Dual Digital Transistors (NPN+NPN)

**SOT-363**




### FEATURES

- Two DTC114Y chips in a package
- Transistor elements are independent, eliminating interference
- Mounting cost and area can be cut in half

**MARKING：H9**

**Absolute maximum ratings(Ta=25℃)**

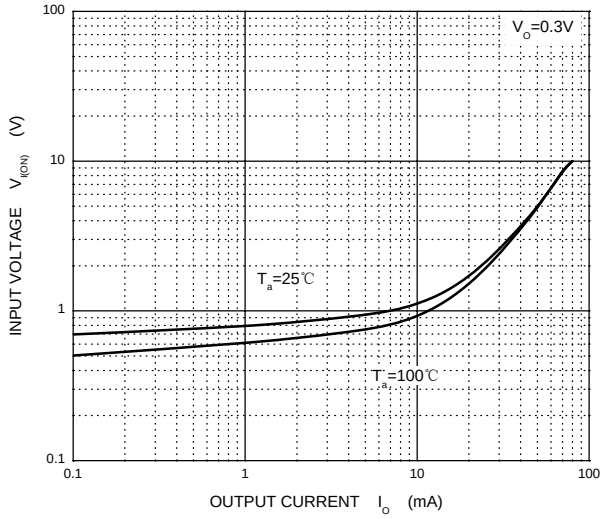
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| **Supply voltage** | $V_{CC}$ | 50 | V |
| **Input voltage** | $V_{IN}$ | -6~40 | V |
| **Output current** | $I_O$ | 70 | mA |
| | $I_{C(MAX)}$ | 100 | |
| **Power dissipation** | Pd | 150(TOTAL) | mW |
| **Junction temperature** | Tj | 150 | ℃ |
| **Storage temperature** | Tstg | -55~150 | ℃ |

**Electrical characteristics (Ta=25℃)**

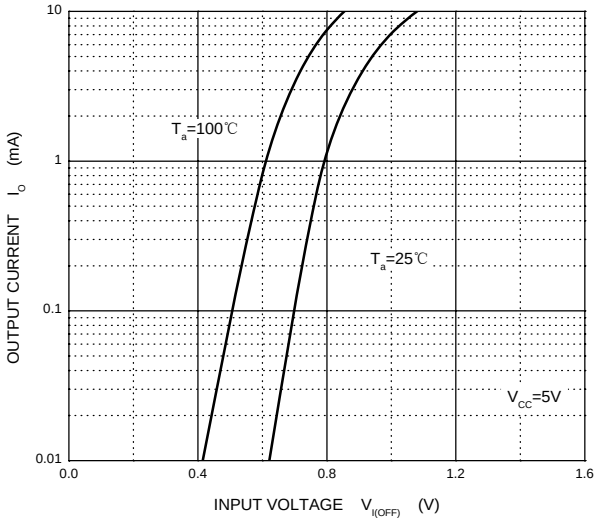
| Parameter | Symbol | Min. | Typ | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|
| **Input voltage** | $V_{I(off)}$ | 0.3 | | | V | $V_{CC}$=5V ,$I_O$=100μA |
| | $V_{I(on)}$ | | | 1.4 | | $V_O$=0.3V ,$I_O$=1 mA |
| **Output voltage** | $V_{O(on)}$ | | | 0.3 | V | $I_O/I_I$=5mA/0.25mA |
| **Input current** | $I_I$ | | | 0.88 | mA | $V_I$=5V |
| **Output current** | $I_{O(off)}$ | | | 0.5 | μA | $V_{CC}$=50V, $V_I$=0 |
| **DC current gain** | $G_I$ | 68 | | | | $V_O$=5V ,$I_O$=5mA |
| **Input resistance** | $R_1$ | 7 | 10 | 13 | KΩ | |
| **Resistance ratio** | $R_2/R_1$ | 3.7 | 4.7 | 5.7 | | |
| **Transition frequency** | $f_T$ | | 250 | | MHz | $V_{CE}$=10V ,$I_E$=-5mA,f=100MHz |

# Typical Characteristics

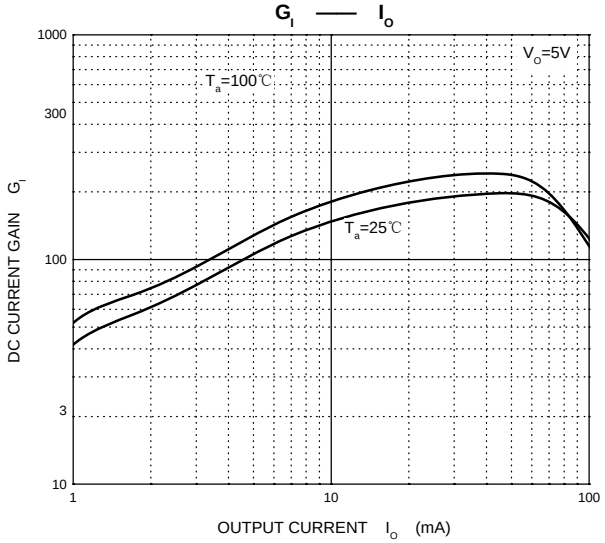
**ON Characteristics**



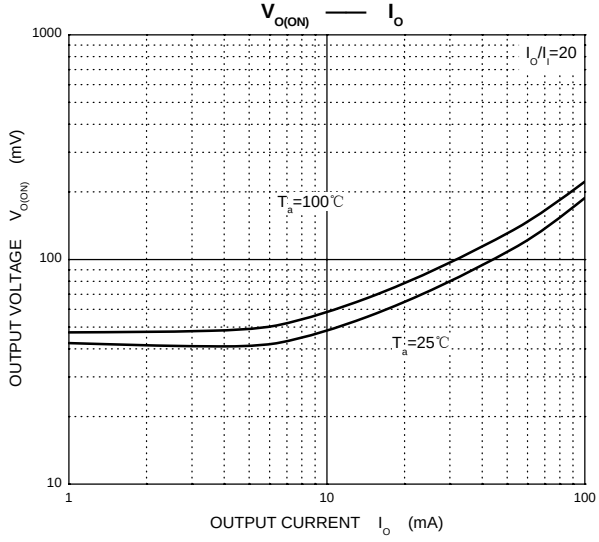

**OFF Characteristics**



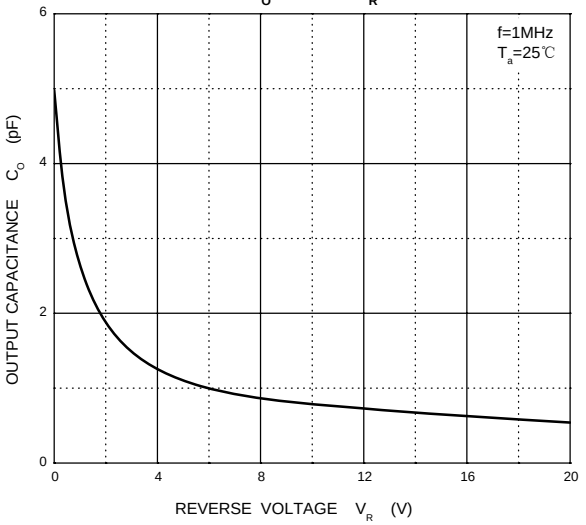

**$G_I$ —— $I_O$**



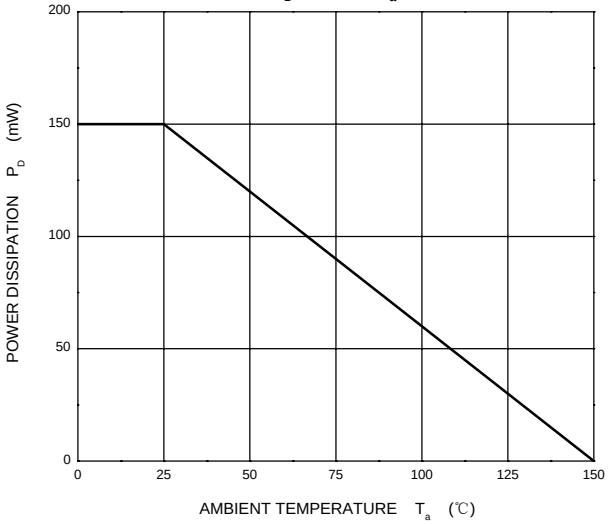

**$V_{O(ON)}$ —— $I_O$**



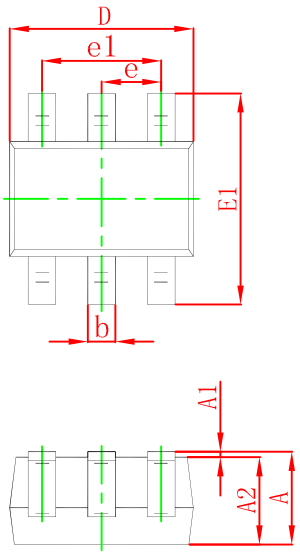

**$C_O$ —— $V_R$**

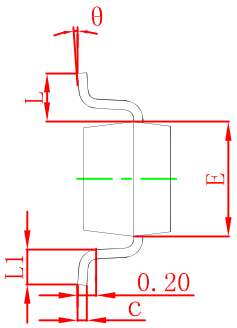



**$P_D$ —— $T_a$**



## SOT-363 Package Outline Dimensions



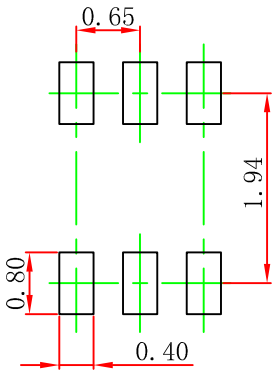







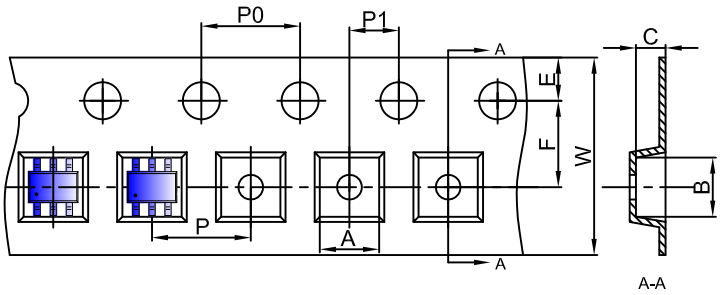
| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.150 | 0.350 | 0.006 | 0.014 |
| c | 0.100 | 0.150 | 0.004 | 0.006 |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.150 | 1.350 | 0.045 | 0.053 |
| E1 | 2.150 | 2.400 | 0.085 | 0.094 |
| e | 0.650 TYP | | 0.026 TYP | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525 REF | | 0.021 REF | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| θ | 0° | 8° | 0° | 8° |

## SOT-363 Suggested Pad Layout




Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

## SOT-363 Embossed Carrier Tape

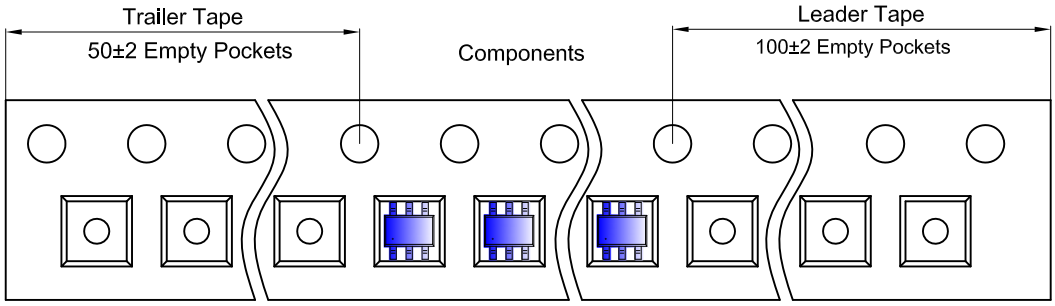



Packaging Description:

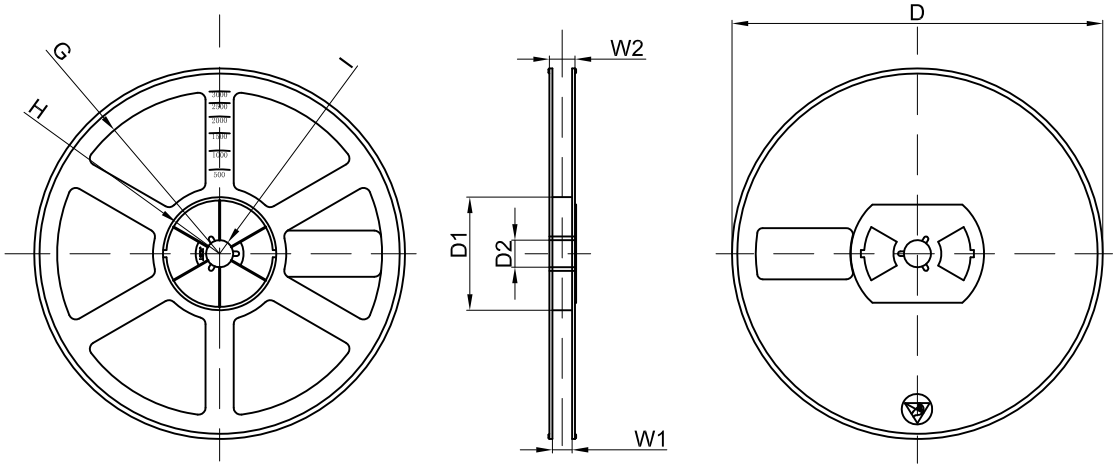
SOT-363 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

| Dimensions are in millimeter | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Pkg type | A | B | C | d | E | F | P0 | P | P1 | W |
| SOT-363 | 2.25 | 2.55 | 1.20 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

## SOT-363 Tape Leader and Trailer




## SOT-363 Reel




| Dimensions are in millimeter | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7"Dia | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|---|---|---|---|---|---|---|
| 3000 pcs | 7 inch | 45,000 pcs | 203×203×195 | 180,000 pcs | 438×438×220 | |