# JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD <br> Digital Transistors (Built-in Resistors) 

## EMH10 Dual Digital Transistors (NPN+NPN)

## FEATURES

- Two DTC123J chips in a package.
- Mounting possible with SOT-563 automatic mounting machines.
- Transistor elements are independent, eliminating interference.
- Mounting cost and area be cut in half.

Marking: H10

## Absolute maximum ratings( $\mathrm{Ta}=25^{\circ} \mathrm{C}$ )

## SOT-563



| Parameter | Symbol | Limits | Unit |
| :--- | :---: | :---: | :---: |
| Supply voltage | $\mathrm{V}_{\mathrm{CC}}$ | 50 | V |
| Input voltage | $\mathrm{V}_{\mathrm{IN}}$ | $-5 \sim 12$ | V |
| Output current | $\mathrm{I}_{\mathrm{O}}$ | 100 | mA |
|  | $\mathrm{I}_{\mathrm{C}(\mathrm{MAX})}$ | 100 | mW |
| Power dissipation | Pd | 150 | mW |
| Operation Junction and <br> Storage Temperature Range | $\mathrm{T}_{\mathrm{J},} \mathrm{T}_{\text {stg }}$ | $-55 \sim+150$ | ${ }^{\circ} \mathrm{C}$ |

Electrical characteristics $\left(\mathbf{T a}=25^{\circ} \mathrm{C}\right.$ )

| Parameter | Symbol | Min. | Typ | Max. | Unit | Conditions |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Input voltage | $\mathrm{V}_{\text {I(off) }}$ | 0.5 |  |  | V | $\mathrm{~V}_{\mathrm{CC}}=5 \mathrm{~V}, \mathrm{I}_{\mathrm{O}}=100 \mu \mathrm{~A}$ |
|  | $\mathrm{~V}_{\mathrm{I}_{\text {(on) }}}$ |  |  | 1.1 |  | $\mathrm{~V}_{\mathrm{O}}=0.3 \mathrm{~V}, \mathrm{I}_{\mathrm{O}}=5 \mathrm{~mA}$ |
| Output voltage | $\mathrm{V}_{\mathrm{O} \text { (on) }}$ |  | 0.1 | 0.3 | V | $\mathrm{I}_{\mathrm{O}} / \mathrm{I}_{\mathrm{I}}=5 \mathrm{~mA} / 0.25 \mathrm{~mA}$ |
| Input current | $\mathrm{I}_{\mathrm{I}}$ |  |  | 3.6 | mA | $\mathrm{~V}_{\mathrm{I}}=5 \mathrm{~V}$ |
| Output current | $\mathrm{I}_{\mathrm{O} \text { (off) }}$ |  |  | 0.5 | $\mu \mathrm{~A}$ | $\mathrm{~V}_{\mathrm{CC}}=50 \mathrm{~V}, \mathrm{~V}_{\mathrm{I}}=0$ |
| DC current gain | $\mathrm{G}_{\mathrm{I}}$ | 80 |  |  |  | $\mathrm{~V}_{\mathrm{O}}=5 \mathrm{~V}, \mathrm{I}_{\mathrm{O}}=10 \mathrm{~mA}$ |
| Input resistance | $\mathrm{R}_{1}$ | 1.54 | 2.2 | 2.86 | $\mathrm{~K} \Omega$ | - |
| Resistance ratio | $\mathrm{R}_{2} / \mathrm{R}_{1}$ | 17 | 21 | 26 |  | - |
| Transition frequency | $\mathrm{f}_{\mathrm{T}}$ |  | 250 |  | MHz | $\mathrm{V}_{\mathrm{CE}}=10 \mathrm{~V}, \mathrm{I}_{\mathrm{E}}=5 \mathrm{~mA}, \mathrm{f}=100 \mathrm{MHz}$ |



| Symbol | Dimensions In Millimeters |  | Dimensions In Inches |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Min. | Max. | Min. | Max. |
| A | 0.525 | 0.600 | 0.021 | 0.024 |
| A1 | 0.000 | 0.050 | 0.000 | 0.002 |
| e | 0.450 | 0.550 | 0.018 | 0.022 |
| c | 0.090 | 0.160 | 0.004 | 0.006 |
| D | 1.500 | 1.700 | 0.059 | 0.067 |
| b | 0.170 | 0.270 | 0.007 | 0.011 |
| E1 | 1.100 | 1.300 | 0.043 | 0.051 |
| E | 1.500 | 1.700 | 0.059 | 0.067 |
| L | 0.100 | 0.300 | 0.004 | 0.012 |
| L1 | 0.200 | 0.400 | 0.008 | 0.016 |
| $\theta$ |  | $7^{0} \mathrm{REF}$. | $7^{0} \mathrm{REF}$. |  |

## SOT-563 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2. General tolerance $: \pm 0.05 \mathrm{~mm}$.
3.The pad layout is for reference purposes only.

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SOT-563 Embossed Carrier Tape


Packaging Description:
SOT-563 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 17.8 cm 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-563 | 1.78 | 1.78 | 0.69 | $\varnothing 1.50$ | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |  |  |  |

## SOT-563 Tape Leader and Trailer



## SOT-563 Reel



| Dimensions are in millimeter |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
| 7"Dia | $\varnothing 178.00$ | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |


| REEL | Reel Size | Box | Box Size $(\mathrm{mm})$ | Carton | Carton Size(mm) | G.W.(kg) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3000 pcs | 7 inch | 45,000 pcs | $203 \times 203 \times 195$ | $180,000 \mathrm{pcs}$ | $438 \times 438 \times 220$ |  |

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SMUN2214T3G SMUN5113DW1T1G SMUN5335DW1T1G NSBC143ZPDP6T5G NSVMUN5113DW1T3G SMUN5230DW1T1G
SMUN2214T1G FMA7AT148 DTC123TKAT146 MUN2135T1G DTC114EUA-TP 2SA1344-TB-E NSVDTA114EET1G SMUN5237DW1T1G SMUN5213DW1T1G SMUN5114DW1T1G SMUN2111T1G DTC124ECA-TP DTC123TM3T5G DTA114ECA-TP DTA113EM3T5G DTC113EM3T5G NSVMUN5135DW1T1G NSVMUN2237T1G NSVDTC143ZM3T5G SMUN5335DW1T2G SMUN5216DW1T1G NSVMUN5316DW1T1G NSVMUN5215DW1T1G

