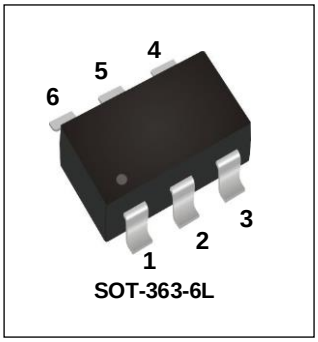
# WTDTC114EDW

## Dual NPN Digital Transistors

## Features




- 100mA Output Current Capability
- High Breakdown Voltage
- Built-in Resistors
- Simplifies Circuit Design
- Reduces Component Count

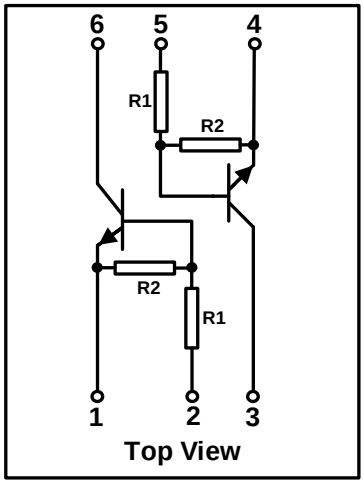
## Mechanical Characteristics

- SOT-363 package
- Marking: Marking Code
- Packaging: Tape and Reel
- RoHS Compliant & HF
- Device meets MSL3 requirement

## Applications

- Digital application
- Controlling IC inputs
- Switching loads

## Schematic & PIN Configuration



## Absolute Maximum Rating(Ta=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Supply Voltage | $V_{CC}$ | 50 | V |
| Input Voltage | $V_{IN}$ | -10 to +40 | V |
| Output Current | $I_O$ | 100 | mA |
| Power Dissipation | $P_D$ | 200 | mW |
| Operating and Storage Temperature Range | $T_J$ ,$T_{STG}$ | -55 to +150 | °C |

## Electrical Characteristics ($T_{amb}$=25°C unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Input Voltage | $V_{I(off)}$ | $V_{CC}$ = 5V, $I_O$ = 100μA | - | - | 0.5 | V |
| | $V_{I(on)}$ | $V_O$ = 0.3V, $I_O$ = 10mA | 3 | - | - | V |
| Output Voltage | $V_{O(on)}$ | $I_O$ = 10mA, $I_I$ = 0.5mA | - | - | 0.3 | V |
| Input Current | $I_I$ | $V_I$ = 5V | - | - | 0.88 | mA |
| Output Current | $I_{O(off)}$ | $V_{CC}$ = 50V, $V_I$ = 0 | - | - | 0.5 | μA |
| DC Current Gain | $G_I$ | $V_O$ = 5V, $I_O$ = 5mA | 30 | - | - | |
| Input Resistance | $R_1$ | | 7 | 10 | 13 | kΩ |
| Resistance Ratio | $R_2/R_1$ | | 0.8 | 1 | 1.2 | |
| Transition Frequency | $f_T$ | $V_{CE}$ = 10V,$I_C$ = 5mA,f = 100MHz | - | 250 | - | MHz |

## Typical Characteristics

Figure 1. ON Characteristics

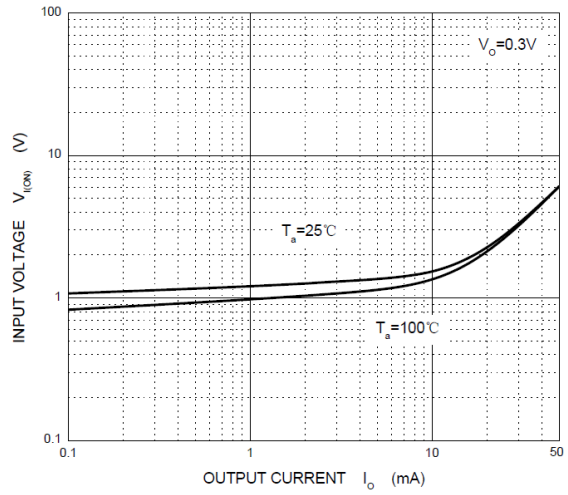



Figure 2. OFF Characteristics

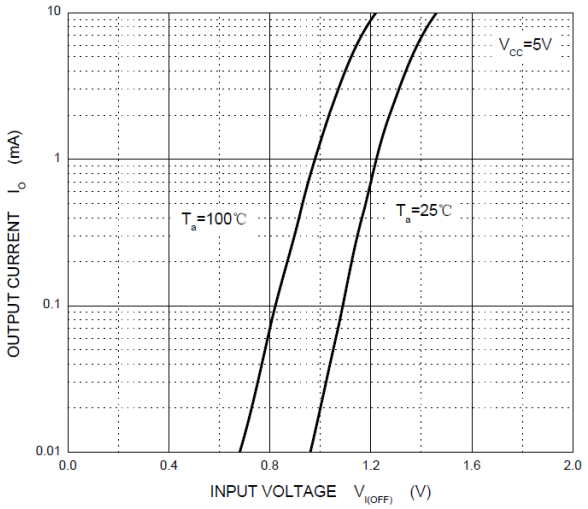



Figure 3. $G_I$ - $I_O$

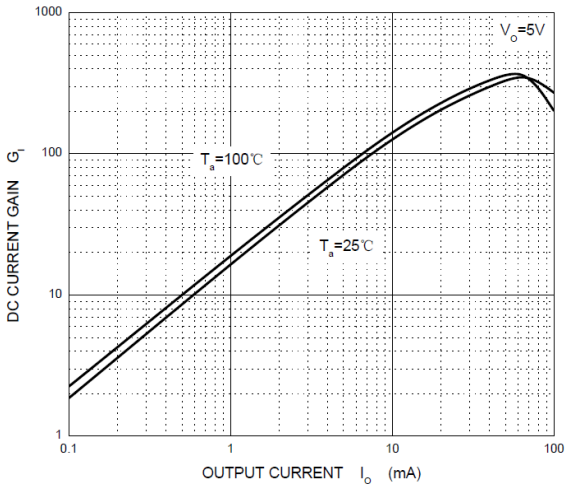
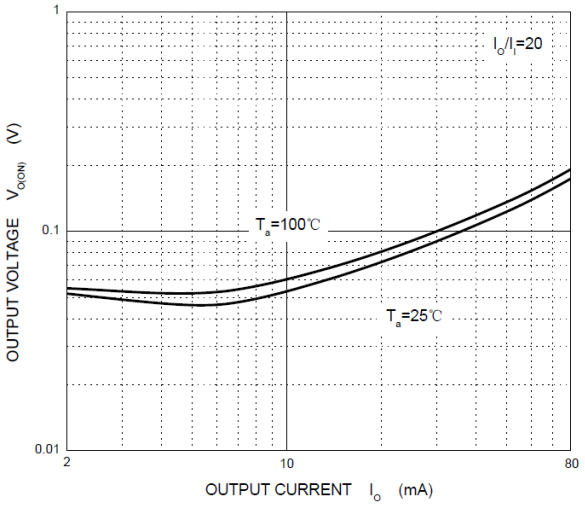
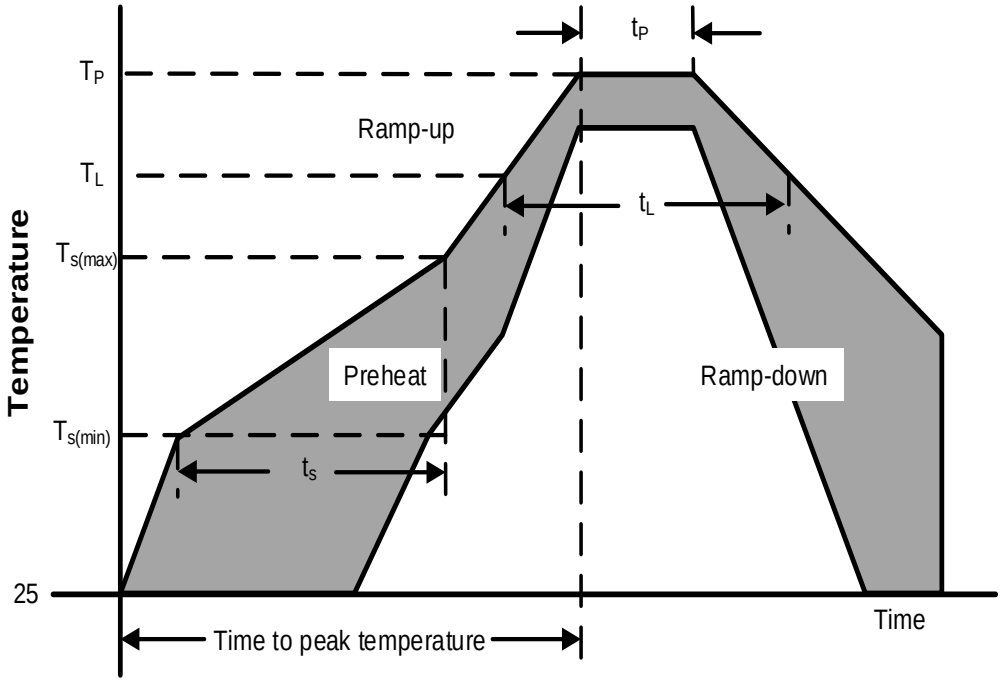



Figure 4. $V_O$ - $I_O$



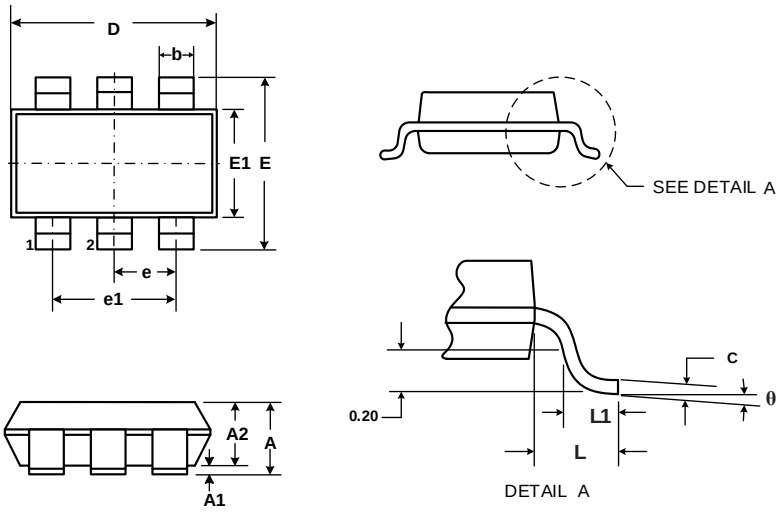
## Soldering Parameters

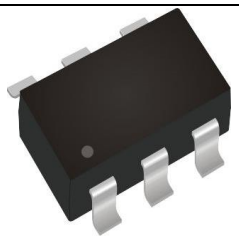
| Reflow Condition | | Pb – Free assembly |
|---|---|---|
| Pre Heat | Temperature Min ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (min to max) (ts ) | 60 – 190 secs |
| Average ramp up rate (Liquidus Temp) ($T_L$) to peak | | 5°C/second max |
| $T_{S(max)}$ to $T_L$——Ramp-up Rate | | 5°C/second max |
| Reflow | Temperature ($T_L$) (Liquidus) | 217°C |
| | Temperature ($t_L$) | 60 – 150 seconds |
| Peak Temperature ($T_P$) | | 260+0/-5 °C |
| Time within actual peak Temperature ($t_p$ ) | | 20 – 40 seconds |
| Ramp-down Rate | | 5°C/second max |
| Time 25°C to peak Temperature ($T_P$) | | 8 minutes Max. |
| Do not exceed | | 280°C |



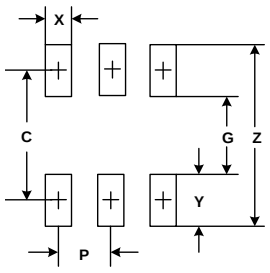
## Outline Drawing – SOT-363

### PACKAGE OUTLINE



| DIMENSIONS | | | | |
|---|---|---|---|---|
| SYMBOL | MILLIMETER | | 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 |
| E1 | 1.150 | 1.350 | 0.045 | 0.053 |
| E | 2.150 | 2.450 | 0.085 | 0.096 |
| 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° |




| DIMENSIONS | | |
|---|---|---|
| DIM | INCHES | MILLIMETERS |
| Z | 0.110 | 2.79 |
| G | 0.043 | 1.09 |
| C | 0.076 | 1.94 |
| P | 0.026 TYP | 0.65 TYP |
| X | 0.016 | 0.40 |
| Y | 0.033 | 0.85 |

**Notes**

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Pin 3 is the cathode (Unidirectional Only).
4. Dimensions are exclusive of mold flash and metal burrs.

## Marking Codes

| | |
|---|---|
| Part Number | WTDTC114EDW |
| Marking Code | 7A |

## Package Information

Qty：3k/Reel

### CONTACT INFORMATION

No.1001, Shiwan (7) Road, Pudong District, Shanghai, P.R.China.201207
Tel: 86-21-68969993 Fax: 86-21-50757680 Email: market@way-on.com
WAYON website: **http://www.way-on.com**
For additional information, please contact your local Sales Representative.

WAYON ® is registered trademark of Wayon Corporation.

*Specifications are subject to change without notice.*
*The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.*
*Users should verify actual device performance in their specific applications.*