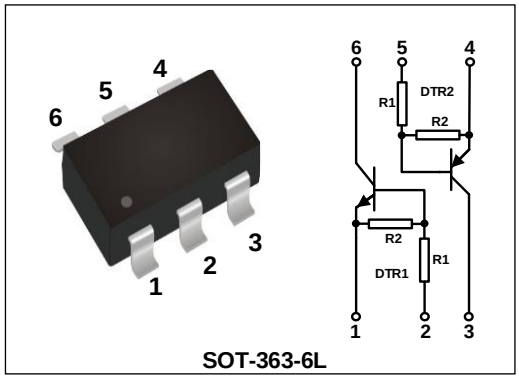
WT123JDW

Dual NPN+PNP Digital Transistors

Features

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



Mechanical Characteristics

- SOT-363-6L package
- Marking: Marking Code
- Packaging: Tape and Reel
- RoHS Compliant & HF
- Device meets MSL3 requirement

Applications

- Digital application in automotive and industrial segments
- Controlling IC inputs
- Switching loads

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

Parameter	Symbol	Value		Unit
		DTR1	DTR2	
Supply Voltage	V_{CC}	50	-50	V
Input Voltage	V_{IN}	-5 to +12	-12 to +5	V
Output Current	I_O	100	-100	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	200	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J ,T_{STG}	-55 to +150	°C

DTR1 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 = 5mA	1.1	-	-	V
Output Voltage	$V_{O(on)}$	I_O = 5mA, I_I = 0.25mA	-	-	0.3	V
Input Current	I_I	V_I = 5V	-	-	3.6	mA
Output Current	$I_{O(off)}$	V_{CC} = 50V, V_I = 0V	-	-	0.5	μA
DC Current Gain	G_I	V_O = 5V, I_O = 10mA	80	-	-	
Input Resistance	R_1		1.54	2.2	2.86	kΩ
Resistance Ratio	R_2/R_1		17	21	26	
Transition Frequency	f_T	V_{CE} = 10V,I_C = 5mA,f = 100MHz	-	250	-	MHz

DTR2 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 = -5mA	-1.1	-	-	V
Output Voltage	$V_{O(on)}$	I_O = -5mA, I_I = -0.25mA	-	-	-0.3	V
Input Current	I_I	V_I = -5V	-	-	-3.6	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 = -10mA	80	-	-	
Input Resistance	R_1		1.54	2.2	2.86	kΩ
Resistance Ratio	R_2/R_1		17	21	26	
Transition Frequency	f_T	V_{CE} = -10V,I_C = -5mA,f = 100MHz	-	250	-	MHz

DTR1 Typical Characteristics

Figure 1. ON Characteristics

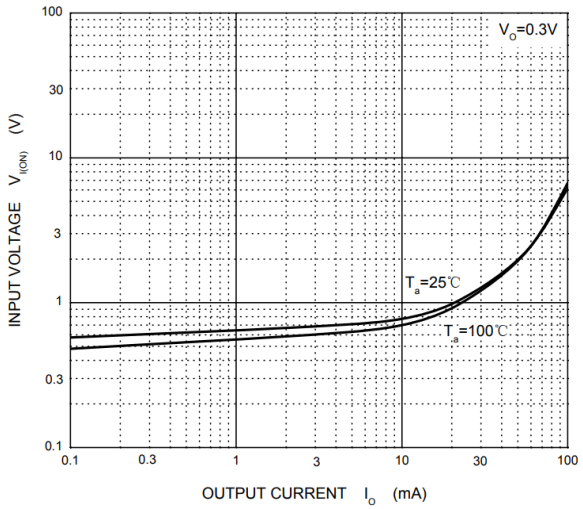
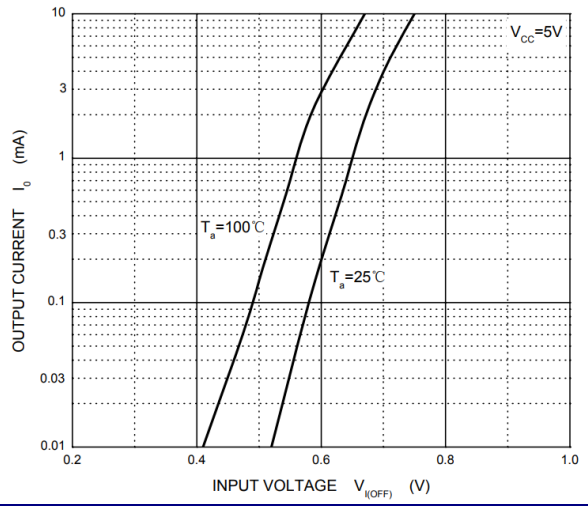


Figure 2. OFF Characteristics



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Figure 3. G_I- I_O

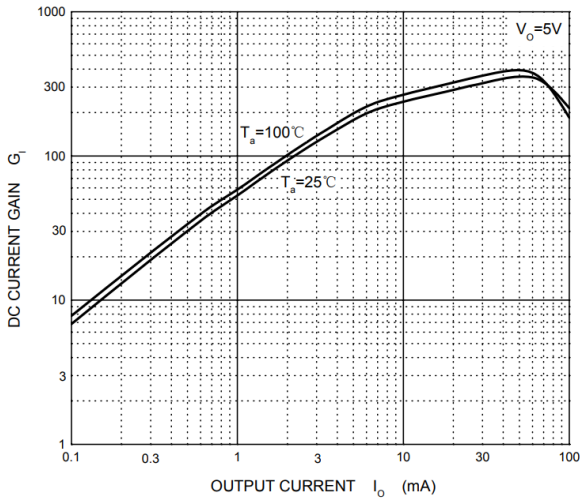
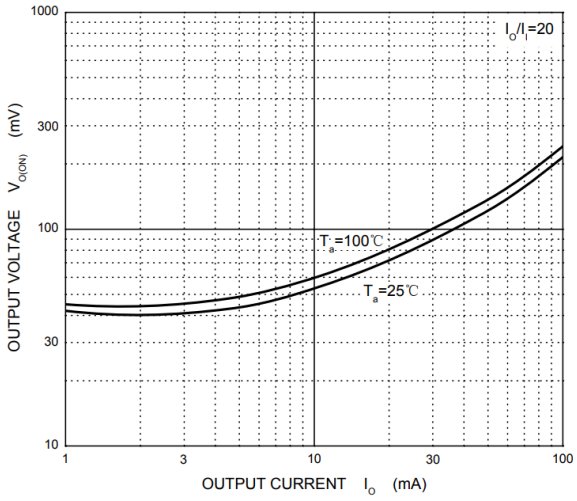


Figure 4. $V_{O(on)}$ - I_O



DTR2 Typical Characteristics

Figure 1. ON Characteristics

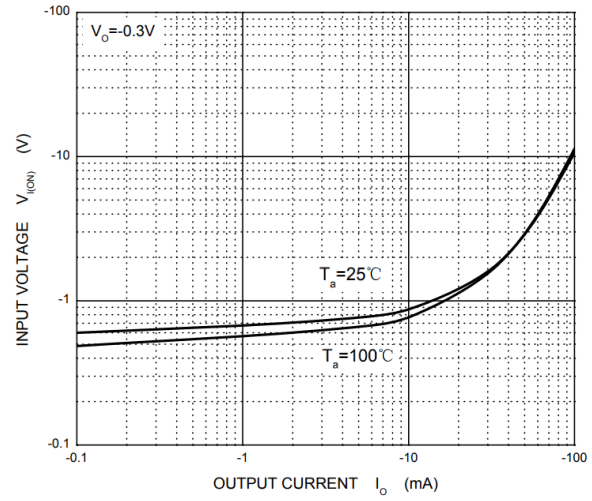


Figure 2. OFF Characteristics

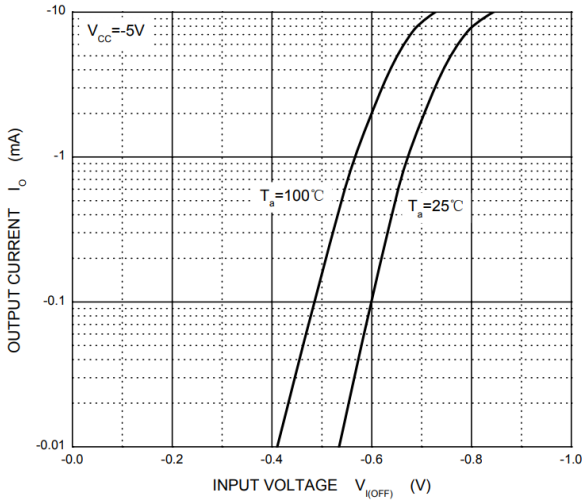


Figure 3. G_I- I_O

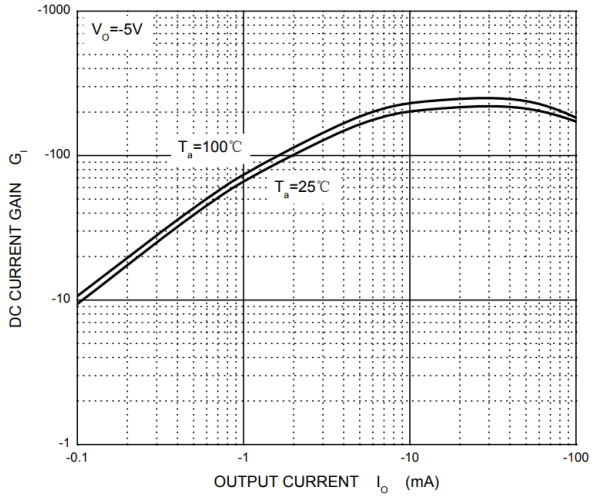
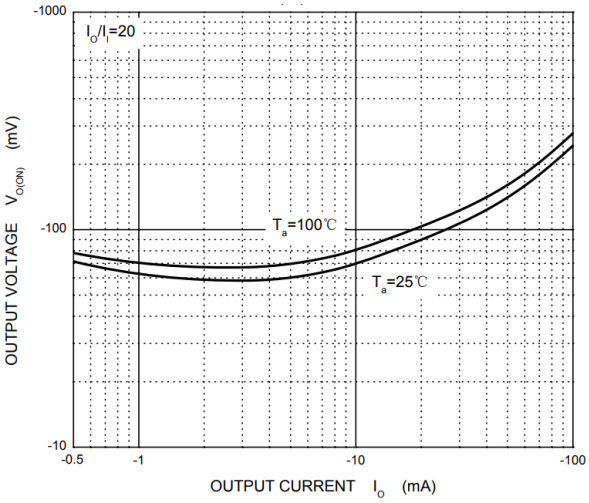
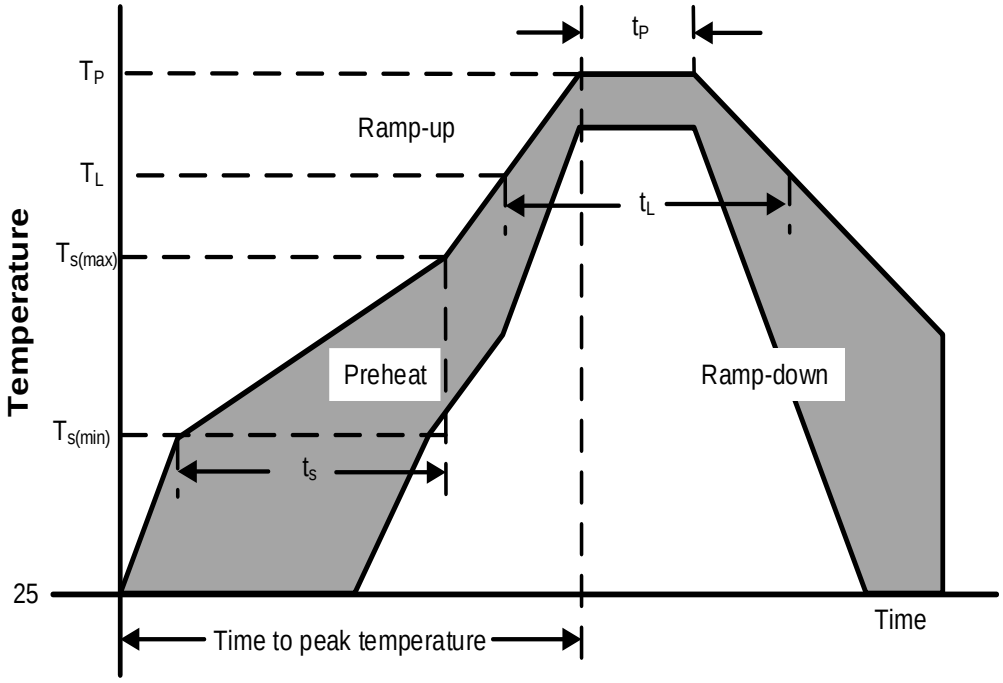


Figure 4. $V_{O(on)}$ - I_O



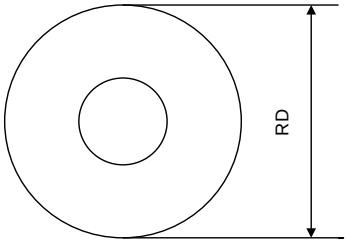
Soldering Parameters

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

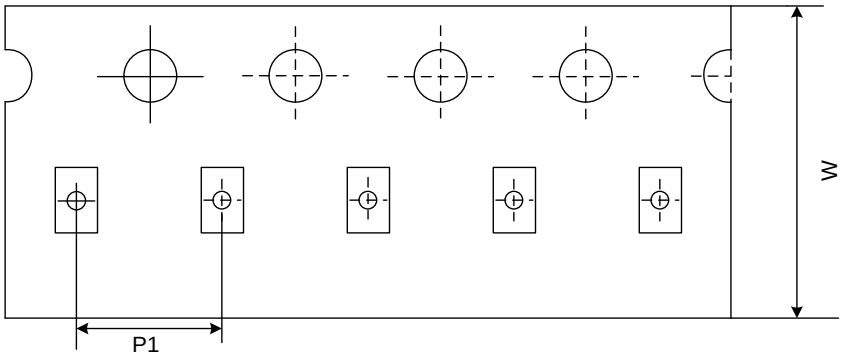


Tape And Reel Information

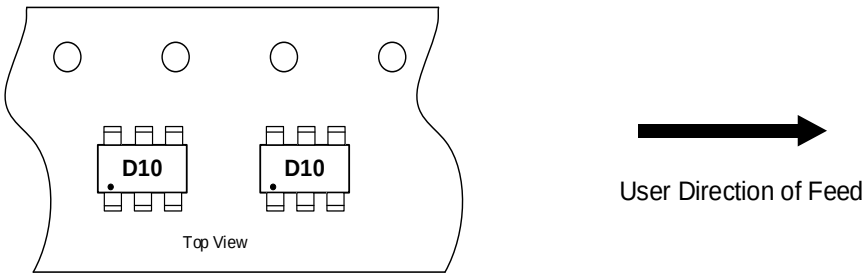
Reel Dimensions



Tape Dimensions



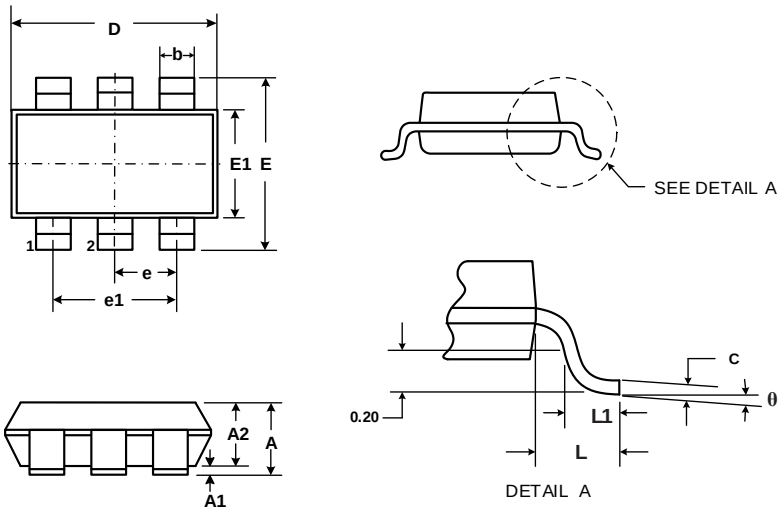
Quadrant Assignments For PIN1 Orientation In Tape

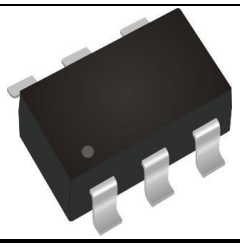


RD	Reel Dimensions	7 inch
W	Overall width of the carrier tape	8 mm
P1	Pitch between successive cavity centers	4 mm

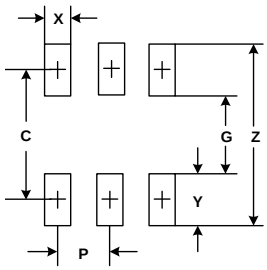
Outline Drawing – SOT-363

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°

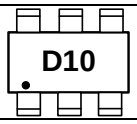


DIMENSIONS		
DIM	INCHES	MILLIMETERS
Z	0.110	2.79
G	0.043	1.09
C	0.076	1.94
P	0.026 TYP	0.65 TYP
X	0.016	0.40
Y	0.033	0.85

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	WT123JDW
Marking Code	

Package Information

Qty：3k/Reel

CONTACT INFORMATION

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WAYON website: **http://www.way-on.com**
For additional information, please contact your local Sales Representative.

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Product Specification Statement

1. The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

2. The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

3. WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

4. Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

5. The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. WAYON shall assume no responsibility for any consequences resulting from such usage.

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