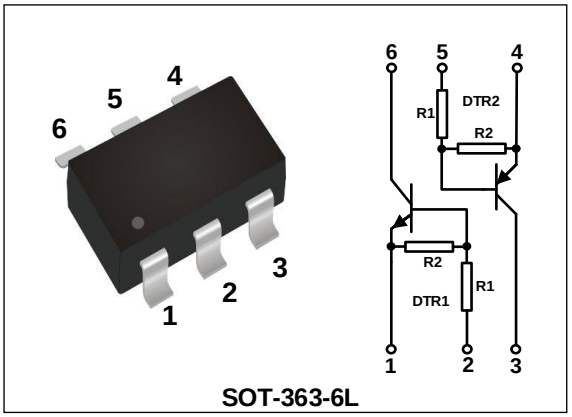
WT114YDW

Dual NPN+PNP Digital Transistors

Features

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



SOT-363-6L

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}	-6 to +40	-40 to -+6	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	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range	T_J ,T_{STG}	-55 to +150	°C

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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	0.3	-	-	V
	$V_{I(on)}$	V_O = 0.3V, I_O = 1mA	-	-	1.4	V
Output Voltage	$V_{O(on)}$	I_O = 5mA, I_I = 0.25mA	-	-	0.3	V
Input Current	I_I	V_I = 5V	-	-	0.88	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 = 5mA	68	-	-	
Input Resistance	R_1		7	10	13	kΩ
Resistance Ratio	R_2/R_1		3.7	4.7	5.7	
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	-0.3	-	-	V
	$V_{I(on)}$	V_O = -0.3V, I_O = -1mA	-	-	-1.4	V
Output Voltage	$V_{O(on)}$	I_O = -5mA, I_I = -0.25mA	-	-	-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	68	-	-	
Input Resistance	R_1		7	10	13	kΩ
Resistance Ratio	R_2/R_1		3.7	4.7	5.7	
Transition Frequency	f_T	V_{CE} = -10V,I_C = -5mA,f = 100MHz	-	250	-	MHz

DTR1 Typical Characteristics

Figure 1. ON Characteristics

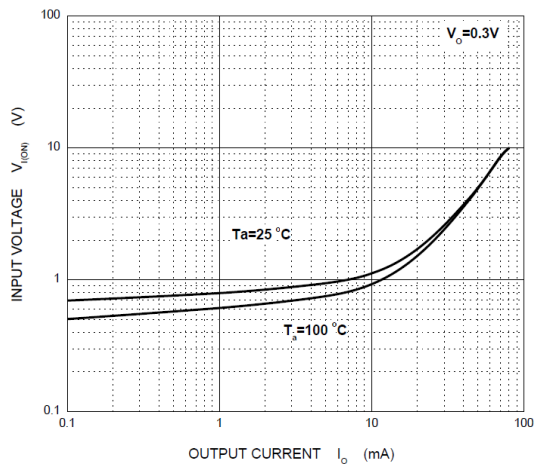


Figure 2. OFF Characteristics

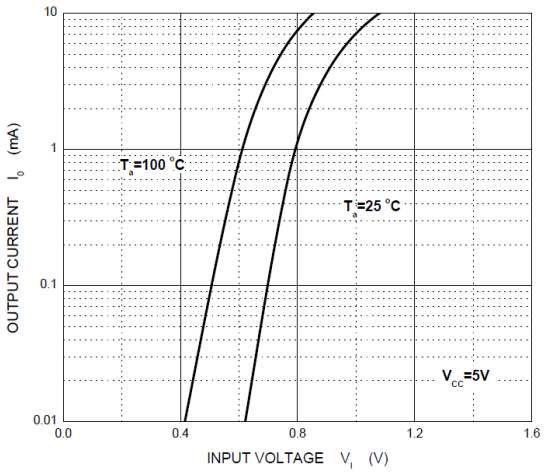


Figure 3. G_I - I_O

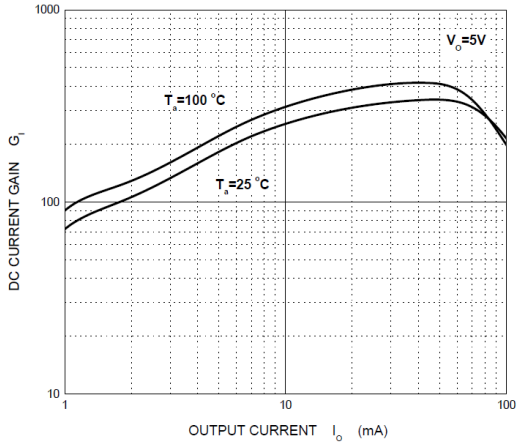
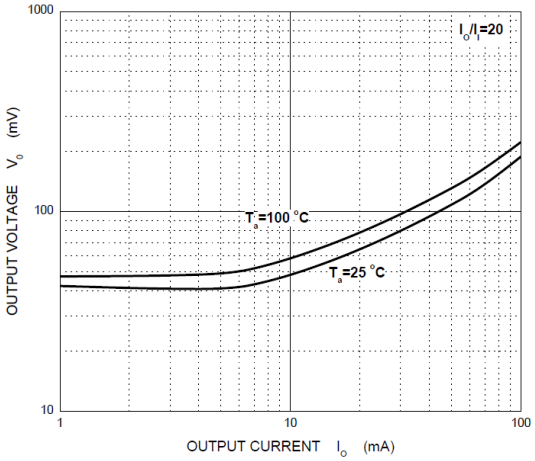


Figure 4. V_O - I_O



DTR2 Typical Characteristics

Figure 1. ON Characteristics

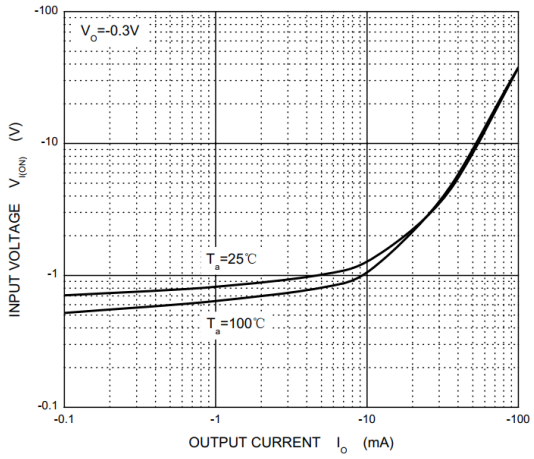


Figure 2. OFF Characteristics

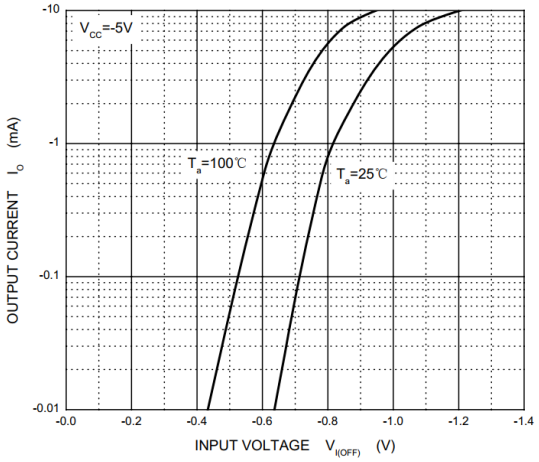


Figure 3. G_I - I_O

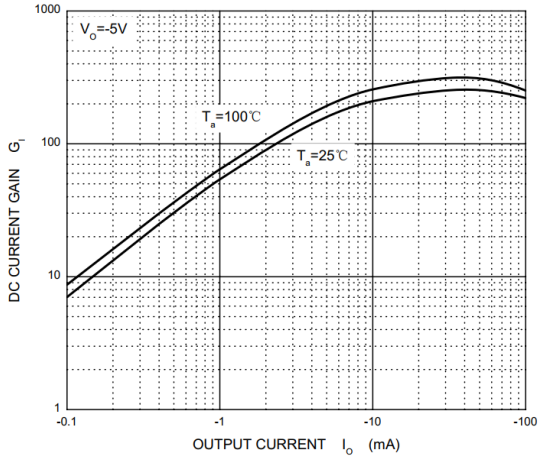
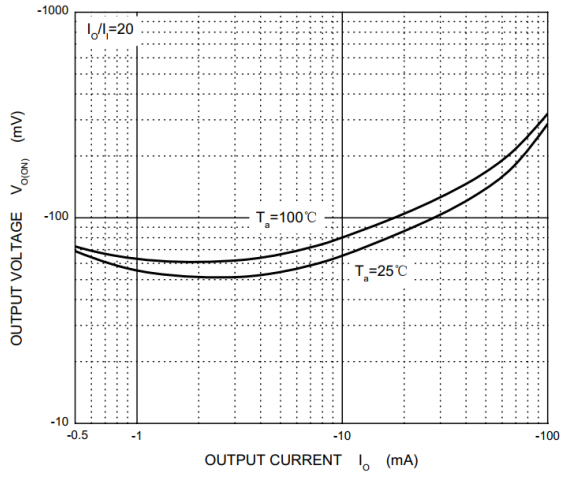
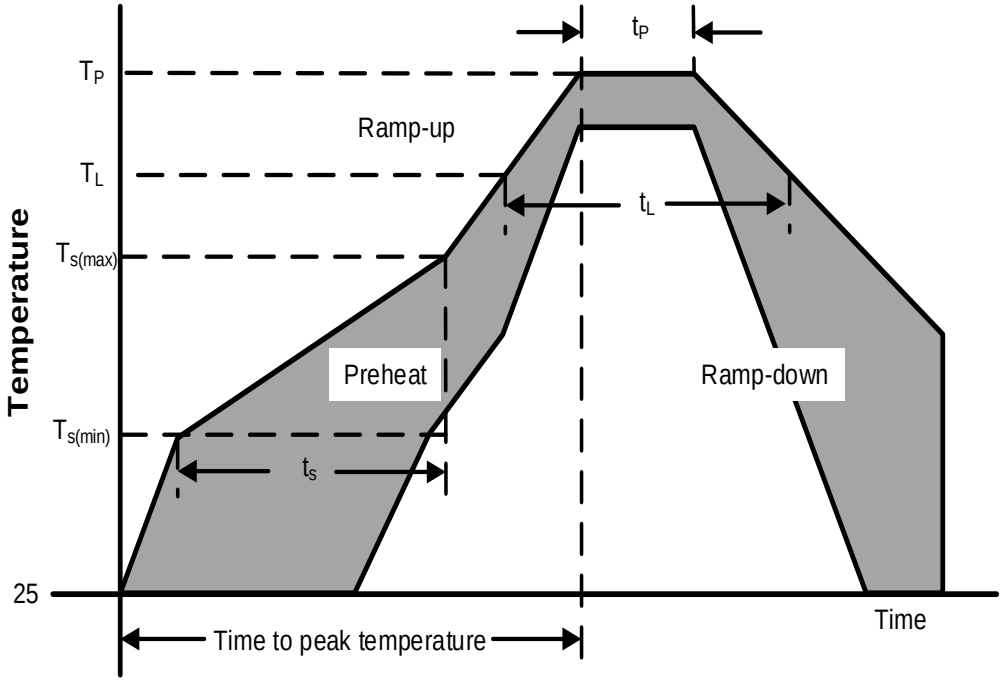


Figure 4. V_O - I_O



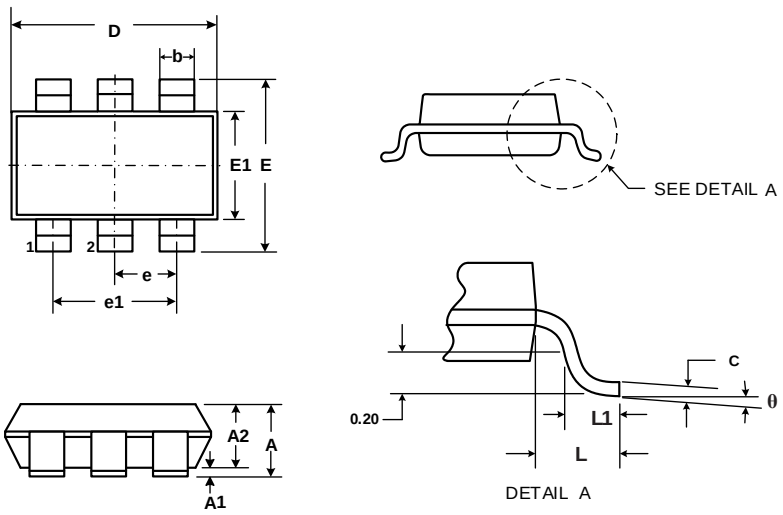
Soldering Parameters

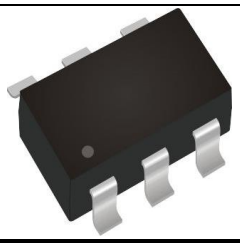
Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (ts)	60 – 190 secs
Average ramp up rate (Liquidus Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L——Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (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



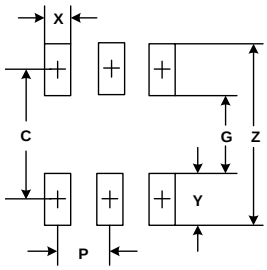
Outline Drawing – SOT-363

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	WT144YDW
Marking Code	D9

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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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.