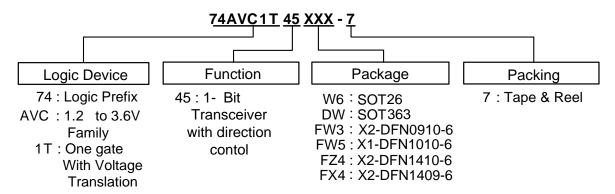


### **Ordering Information**



Part Number	Doolsono Codo	Dookoaina	7" Tape and Reel (Note 7)					
Part Number	Package Code	Packaging	Quantity	Part Number Suffix				
74AVC1T45W6-7	W6	SOT26	3000/Tape & Reel	-7				
74AVC1T45DW-7	DW	SOT363	3000/Tape & Reel	-7				
74AVC1T45FW3-7	FW3	X2-DFN0910-6	5000/Tape & Reel	-7				
74AVC1T45FW5-7	FW5	X1-DFN1010-6	5000/Tape & Reel	-7				
74AVC1T45FZ4-7	FZ4	X2-DFN1410-6	5000/Tape & Reel	-7				
74AVC1T45FX4-7	FX4	X2-DFN1409-6	5000/Tape & Reel	-7				

Notes: 4. Taping orientation is located on our website at https://www.diodes.com/assets/Packaging-Support-Docs/Ap02007.pdf.

### **Pin Descriptions**

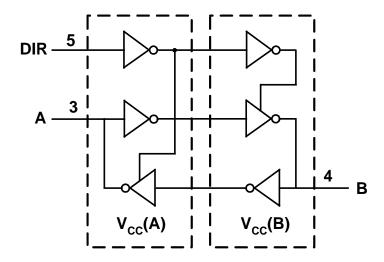
Pin Name	Pin	Function
VCC(A)	1	Supply for I/O pin A and Reference for DIR
GND	2	Ground
Α	3	Data Input/Output
В	4	Data Input/Output
DIR	5	Direction Control
VCC(B)	6	Supply for I/O pin B

### **Function Table**

Supply voltage	Input		Input/Output
$V_{CC(A)}, V_{CC(B)}$	DIR (Direction Pin)	Α	В
1.2 V to 3. 6 V	L	A = B	Input
1.2 V to 3. 6 V	Н	Input	B = A
GND	X	Z	Z



# **Logic Diagram**



## Absolute Maximum Ratings (Note 5) (@TA = +25°C, unless otherwise specified.)

Symbol	Parameter		Rating	Unit
ESD HBM	Human Body Model ESD Protection		2	kV
ESD CDM	Charged Device Model ESD Protection		1	kV
ESD MM	Machine Model ESD Protection		200	V
V <sub>CC</sub> (A), V <sub>CC</sub> (B)	Supply Voltage Range		-0.5 to +4.6	V
VI	Input Voltage Range	-0.5 to +4.6	V	
Vo	Voltage Applied to Output in High Impedance or IOFF	-0.5 to +4.6	V	
V	Voltage Applied to Output in Lligh or Low State	A pin	-0.5 to V <sub>CC</sub> (A) +0.5	V
Vo	Voltage Applied to Output in High or Low State	B pin	-0.5 to V <sub>CC</sub> (B) +0.5	V
I <sub>IK</sub>	Input Clamp Current V <sub>I</sub> <0		-50	mA
I <sub>OK</sub>	Output Clamp Current		-50	mA
lo	Continuous Output Current		±50	mA
_	Continuous Current Through V <sub>CC</sub> or GND		±100	mA
TJ	Operating Junction Temperature		-40 to +150	°C
T <sub>STG</sub>	Storage Temperature		-65 to +150	°C

Note:

5. Stresses beyond the absolute maximum can result in immediate failure or reduced reliability. These are stress values and device operation should be within recommend values.



# Recommended Operating Condition (Notes 6, 7 & 8) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Symbol	Para	meter	V <sub>CCI</sub>	V <sub>cco</sub>	Min	Max	Units
V <sub>CC</sub> (A)	Operating Volta	ge			1.2	3.6	V
V <sub>CC</sub> (B)	Operating Volta	ge			1.2	3.6	V
			1.2V to 1.95V	1.2V to 3.6V	0.65 × V <sub>CC(A)</sub>	_	
V <sub>IH</sub>	High-Level Input Voltage	Data Inputs	1.95V to 2.7V	1.2V to 3.6V	1.6	_	V
	mpat voltage		2.7V to 3.6V	1.2V to 3.6V	2	_	
			1.2V to 1.95V	1.2V to 3.6V	_	0.35 × V <sub>CC(A)</sub>	
VIL	Low-Level Input Voltage	Data Inputs	1.95V to 2.7V	1.2V to 3.6V	_	0.7	V
	input voltage		2.7V to 3.6V	1.2V to 3.6V	_	0.8	
		DIR	1.2V to 1.95V	1.2V to 3.6V	0.65 × V <sub>CC(B)</sub>	_	
V <sub>IH</sub>	High-Level Input Voltage	(Referenced to	1.95V to 2.7V	1.2V to 3.6V	1.6	_	V
	input voltage	V <sub>CCA</sub> )	2.7V to 3.6V	1.2V to 3.6V	2	_	
		DIR	1.2V to 1.95V	1.2V to 3.6V	_	0.35 × V <sub>CC(B)</sub>	
V <sub>IL</sub>	V <sub>IL</sub> Low-Level	(Referenced to	1.95V to 2.7V	1.2V to 3.6V	_	0.7	V
		V <sub>CCA</sub> )	2.7 to 3.6V	1.2V to 3.6V	_	0.8	
VI	Input Voltage		_	_	0	3.6	V
	Outract Maltana	Active State	_	_	0	Vcco	٧
Vo	Output Voltage	3-State	_	_	0	3.6	٧
			1.2V to 3.6V	1.2V	_	-3	
			1.2V to 3.6V	1.4V to 1.6V	_	-6	
Іон	High-Level Outp	out Current	1.2V to 3.6V	1.65V to 1.95V	_	-8	mA
			1.2V to 3.6V	2.3V to 2.7V	_	-9	
			1.2V to 3.6V	3V to 3.6V	_	-12	
			1.2V to 3.6V	1.2V	_	3	
		-	1.2V to 3.6V	1.4V to 1.6V	_	6	
loL	Low-Level Outp	out Current	1.2V to 3.6V	1.65V to 1.95V	_	8	mA
	'		1.2V to 3.6V	2.3V to 2.7V	_	9	
			1.2V to 3.6V	3V to 3.6V	_	12	
Δt/ΔV	Input Transition Rise or Fall Rate		1.2V to 3.6V 1.2V to 3.6V		_	5	ns/V
T <sub>A</sub>	Operating Free-	-Air Temperature			-40	+85	°C

Note:

- 6.  $V_{\text{CCO}}$  is the  $V_{\text{CC}}$  associated with the output port.
- 7.  $V_{CCI}$  is the  $V_{CC}$  associated with the input port. 8. All unused inputs of the device must be held at  $V_{CCI}$  of GND.



### Electrical Characteristics (Notes 9 & 10) (@T<sub>A</sub> = +40°C to +85°C, unless otherwise specified.)

Comple ed	Danamatan	_	ant Canaditions	\/ (A)	V (D)	Т	<sub>A</sub> = +25°	С	T <sub>A</sub> = -40°C	to +85°C	
Symbol	Parameter	11	est Conditions	V <sub>CC</sub> (A)	V <sub>CC</sub> (B)	Min	Тур	Max	Min	Max	Unit
		I <sub>OH</sub> = -1	00μΑ	1.2V to 3.6V	1.2V to 3.6V	_	_	-	V <sub>CC</sub> - 0.2	_	
		I <sub>OH</sub> = -3	mA	1.2V	1.2V	_	0.95	_	_	_	
V <sub>OH</sub>	High Level	I <sub>OH</sub> = -6	mA	1.4V	1.4V	_	_	_	1.05	_	V
VOH	Output Voltage	I <sub>OH</sub> = -8	mA	1.65V	1.65V	_	_	_	1.2	_	V
		$I_{OH} = -9mA$		2.3V	2.3V	_	_	_	1.75	_	
		I <sub>OH</sub> = -1	2mA	3V	3V	_	_	_	2.3	_	
		I <sub>OL</sub> = 10	0μΑ	1.2V to 3.6V	1.2V to 3.6V	_	_	_	_	0.2	
		$I_{OL} = 3n$	nA	1.2V	1.2V	_	0.15	_	_	_	
V <sub>OL</sub>	Low-Level Output	$I_{OL} = 6n$	nA	1.4V	1.4V	_	_	_	_	0.35	V
VOL	Voltage	$I_{OL} = 8n$	nA	1.65V	1.65V	_	_		_	0.45	V
		$I_{OL} = 9n$	nA	2.3V	2.3V	_	_	_	_	0.55	
		I <sub>OL</sub> = 12	mA	3V	3V	_	_	_	_	0.7	
II	Input Current	DIR	$V_I = V_{CC}(A)$ or GND	1.2V to 3.6V	1.2V to 3.6V	-0.25	±0.25	0.25	-1	1	μΑ
l <sub>OFF</sub>	Power Down	A Pin	$V_1$ or $V_0 = 0V$ to 3.6V	0V	0V to 3.6V	-1	±0.1	1	-5	5	μΑ
	Leakage Current	B Pin		0V to 3.6V	0V	-1	±0.1	1	-5	5	•
١.	3-State Leakage	B Pin	$V_O = V_{CCO}$ or GND	0V	0V to 3.6V	-2.5	±0.5	2.5	-5	5	
loz	Current	A Pin	V <sub>I</sub> = V <sub>CCI</sub> or GND	0V to 3.6V	0V	-2.5	±0.5	2.5	-5	5	μΑ
				1.2 to 3.6V	11.2V to 3.6V	_	_	-	_	10	
I <sub>CCA</sub>	Supply Current	_	or GND	3.6V	0V	_	_	-	_	-2	μΑ
		$I_0 = 0$		0V	3.6V	_	_	-	_	10	
		., .,	OND	1.2V to 3.6V	1.2V to 3.6V	_	_		_	10	
I <sub>CCB</sub>	Supply Current		or GND	0V	3.6V	_	_	_	_	10	μΑ
		$I_O = 0$		3.6V	0V	_	_	_	_	-2	
I <sub>CCA</sub> +	Supply Current	$V_{I} = V_{C0}$ $I_{O} = 0$	ci or GND	1.2V to 3.6V	1.2V to 3.6V	_	_	_	_	20	μΑ
Cı	Input Capacitance	DIR	V <sub>I</sub> = V <sub>CC</sub> (A) or GND	3.3V	3.3V		2.5	_	_	_	pF
C <sub>IO</sub>	Input/Output Capacitance	A or B pin	$V_{I}=V_{CC}(A)/(B)$ or GND	3.3V	3.3V	_	6.0	_	_	_	pF

Notes:

<sup>9.</sup>  $V_{CCO}$  is the  $V_{CC}$  associated with the output port. 10.  $V_{CCI}$  is the  $V_{CC}$  associated with the input port.



### Package Characteristics ( $V_{CC} = 3.3V$ , $T_A = +25$ °C, unless otherwise specified.)

Symbol	Parameter	Package	Test Conditions	Min	Тур	Max	Unit
		SOT26		_	166		
		SOT363		_	371		
0	Θ <sub>JA</sub> Thermal Resistance Junction-to-Ambient	X2-DFN0910-6	(Note 11)	_	530	_	°C/W
<del>O</del> JA		X2- DFN1410-6	(Note 11)	_	430		C/VV
		X2-DFN1409-6		_	450		
		X1-DFN1010-6		_	510	_	
		SOT26		_	46	1	
		SOT363		_	143	1	°C/W
	Thermal Resistance Junction-	X2-DFN0910-6	(Note 11)	_	260	1	
θ <sub>JC</sub>	to-Case	X2- DFN1410-6	(Note 11)	_	190		C/VV
		X2-DFN1409-6		_	200	_	
		X1-DFN1010-6		_	250	_	

Note:

## **Switching Characteristics**

 $V_{CC}$  (A) = 1.2V,  $T_A$  = -40°C to +85°C, See Figure 1

Parameter	From (Input)	To (Output)	V <sub>CC</sub> (B) = 1.2V	V <sub>CC</sub> (B) = 1.5V ±0.1	V <sub>CC</sub> (B) = 1.8V ±0.15V	V <sub>CC</sub> (B) = 2.5V ±0.2V	V <sub>CC</sub> (B) = 3.3V ±0.3V	Unit
	(iliput)	(Output)	TYP	TYP	TYP	TYP	TYP	
t <sub>pLH</sub>	Α	В	3.3	2.7	2.4	2.3	2.4	ns
t <sub>pHL</sub>	Λ	Ь	3.3	2.7	2.4	2.3	2.4	113
t <sub>pLH</sub>	В	А	3.3	3.1	2.9	2.8	2.7	ns
t <sub>pHL</sub>	ь	A	3.3	3.1	2.9	2.8	2.7	115
$t_{pHZ}$	DIR	А	5.1	5.2	5.3	5.2	3.7	ns
$t_{pLZ}$	DIIX	Α	5.1	5.2	5.3	5.2	3.7	113
$t_pHZ$	DIR	В	5.3	4.3	4.0	3.3	3.7	ns
$t_{pLZ}$	DIIX	Ь	5.3	4.3	4.0	3.3	3.7	113
t <sub>pZH</sub> *	DIR	Α	8.6	7.3	6.8	6.1	6.4	ns
t <sub>pZL</sub> *	DIIX	Α	8.6	7.3	6.8	6.1	6.4	113
t <sub>pZH</sub> *	DIR	В	8.3	7.8	7.7	7.5	5.8	ns
t <sub>pZL</sub> *	DIK	В	8.3	7.8	7.7	7.5	5.8	115

<sup>\*</sup>Enable times are calculated vales see table at end of switching characteristics.

 $V_{CC}$  (A) = 1.5V ± 0.1V,  $T_A$  = -40°C to +85°C, See Figure 1

Parameter	From (Input)	To (Output)	V <sub>CC</sub> (B) = 1.2V	(B) = 1.2V $V_{CC}(B) = 1.5V$ $V_{CC}(B) = 1.8V$ $\pm 0.1$ $\pm 0.15V$			V <sub>CC</sub> (B) ±0.		V <sub>CC</sub> (B)	Unit			
	(iliput)	iput) (Output)	TYP	Min	Max	Min	Max	Min	Max	Min	Max		
t <sub>pLH</sub>	Α	В	2.9	0.7	5.6	0.6	5.2	0.5	4.2	0.5	3.8	20	
$t_{pHL}$	A	Ь	2.9	0.7	5.6	0.6	5.2	0.5	4.2	0.5	3.8	ns	
$t_{pLH}$	В	Α	2.6	0.6	5.5	0.4	5.3	0.3	4.9	0.3	4.8	ns	
$t_{pHL}$	ь		A	2.6	0.6	5.5	0.4	5.3	0.3	4.9	0.3	4.8	113
$t_{pHZ}$	DIR	А	3.8	1.6	6.7	1.5	6.8	0.3	6.9	0.9	6.9	ns	
$t_{pLZ}$	DIK		3.8	1.6	6.7	1.5	6.8	0.3	6.9	0.9	6.9	110	
$t_{\text{pHZ}}$	DIR	В	5.1	1.8	8.1	1.6	7.1	1.1	4.7	1.4	4.5	ns	
$t_{pLZ}$	DIK	ь	5.1	1.8	8.1	1.6	7.1	1.1	4.7	1.4	4.5	10	
t <sub>pZH</sub> *	DIB	Α	7.7		13.6		12.4	_	9.6	_	9.3	20	
t <sub>pZL</sub> *	DIR	A	7.7	_	13.6	_	12.4	_	9.6	_	9.3	ns	
t <sub>pZH</sub> *	DIB	DIR B	6.7	_	12.3	_	12	_	11.1	_	10.7	ns	
t <sub>pZL</sub> *	אוט	ь в	6.7	_	12.3	_	12	_	11.1	_	10.7	115	

<sup>\*</sup>Enable times are calculated vales see table at end of switching characteristics.

<sup>11.</sup> Test condition for all packages: Device mounted on FR-4 substrate PC board, 2oz copper with minimum recommended pad layout.



# **Switching Characteristics** (continued)

### V<sub>CC</sub> (A) = 1.8V ± 0.15V, T<sub>A</sub> = -40°C to +85°C, See Figure 1

Parameter	From (Input)	To (Output)	V <sub>CC</sub> (B) = 1.2V	V <sub>CC</sub> (B)	= 1.5V ).1		= 1.8V 15V	V <sub>CC</sub> (B) ±0	= 2.5V .2V		= 3.3V .3V	Unit		
	(iliput)	(Output)	TYP	Min	Max	Min	Max	Min	Max	Min	Max			
t <sub>pLH</sub>	Α	В	2.7	0.6	5.3	0.5	5.0	0.4	3.9	0.4	3.4	ns		
$t_pHL$	Λ	Ь	2.7	0.6	5.3	0.5	5.0	0.4	3.9	0.4	3.4	110		
t <sub>pLH</sub>	В	Α	2.3	0.5	5.2	0.4	5.0	0.3	4.6	0.2	4.4	ns		
t <sub>pHL</sub>	В А	2.3	0.5	5.2	0.4	5.0	0.3	4.6	0.2	4.4	115			
$t_{pHZ}$	DIR	Α	3.8	1.6	5.9	1.6	5.9	1.6	5.9	0.5	6.0	ns		
$t_{pLZ}$	DIIX	^	3.8	1.6	5.9	1.6	5.9	1.6	5.9	0.5	6.0	113		
$t_{pHZ}$	DIR	В	5.0	1.8	7.7	1.4	6.8	1.0	4.4	1.4	5.3	ns		
$t_{pLZ}$	DIK	Ь	5.0	1.8	7.7	1.4	6.8	1.0	4.4	1.4	5.3	110		
t <sub>pZH</sub> *	DIB	Δ	7.3		12.9	_	11.8	_	9.0	_	8.7	ns		
t <sub>pZL</sub> *	DIR A	DIR A	Α	7.3	1	12.9	_	11.8		9.0	_	8.7	115	
t <sub>pZH</sub> *	DID	DIB B	6.5	1	11.2	_	10.9	1	9.8	_	9.4	ne		
t <sub>pZL</sub> *	DIR	DIR	DIR	IR B	6.5	1	11.2	_	10.9	1	9.8		9.4	ns

<sup>\*</sup>Enable times are calculated vales see table at end of switching characteristics.

### $V_{CC}$ (A) = 2.5V ± 0.2V, $T_A$ = -40°C to +85°C, See Figure 1

Parameter	From (Input)	To (Output)	V <sub>CC</sub> (B) = 1.2V	V <sub>CC</sub> (B)	= 1.5V ).1		= 1.8V 15V	V <sub>CC</sub> (B) ±0	= 2.5V .2V	V <sub>CC</sub> (B) = 3.3V ±0.3V		Unit	
	(iliput)	(Output)	TYP	Min	Max	Min	Max	Min	Max	Min	Max		
t <sub>pLH</sub>	Α	В	2.6	0.5	4.9	0.4	4.6	0.3	3.4	0.3	3.0	20	
t <sub>pHL</sub>	A	Ь	2.6	0.5	4.9	0.4	4.6	0.3	3.4	0.3	3.0	ns	
t <sub>pLH</sub>	В	Α	2.2	0.4	4.2	0.3	3.8	0.2	3.4	0.2	3.3	20	
t <sub>pHL</sub>	Б	В	2.2	0.4	4.2	0.3	3.8	0.2	3.4	0.2	3.3	ns	
t <sub>pHZ</sub>	DIR	А	2.8	0.3	3.8	0.8	3.8	0.4	3.8	0.5	3.8	ns	
t <sub>pLZ</sub>	DIK	_ ^	2.8	0.3	3.8	0.8	3.8	0.4	3.8	0.5	3.8	115	
t <sub>pHZ</sub>	DIR	В	4.9	2.0	7.6	1.5	6.5	0.6	4.1	1.0	4.0	20	
t <sub>pLZ</sub>	DIK	Ь	4.9	2.0	7.6	1.5	6.5	0.6	4.1	1.0	4.0	ns	
t <sub>pZH</sub> *	DIB	۸	7.1	_	11.8	_	10.3	_	7.5	_	7.3	no	
t <sub>pZL</sub> *	DIR A	Α	7.1		11.8	_	10.3	1	7.5	_	7.3	ns	
t <sub>pZH</sub> *	DIB	D	5.4	_	8.6	_	8.1	_	7.0	_	6.6	no	
t <sub>pZL</sub> *	אוט	DIR B	5.4	_	8.6	_	8.1	_	7.0	_	6.6	ns	

<sup>\*</sup>Enable times are calculated vales see table at end of switching characteristics.

### $V_{CC}$ (A) = 3.3V $\pm$ 0.3V, $T_A$ = -40°C to +85°C, See Figure 1

Parameter	From (Input)	To (Output)	V <sub>CC</sub> (B) = 1.2V	V <sub>CC</sub> (B)	= 1.5V ).1		= 1.8V 15V	V <sub>CC</sub> (B)	= 2.5V .2V		= 3.3V .3V	Unit
	(iliput)	(Output)	TYP	Min	Max	Min	Max	Min	Max	Min	Max	
t <sub>pLH</sub>	Α	В	2.6	0.4	4.7	0.3	4.4	0.2	3.3	0.2	2.8	ns
t <sub>pHL</sub>	A	Ь	2.6	0.4	4.7	0.3	4.4	0.2	3.3	0.2	2.8	115
t <sub>pLH</sub>	В	А	2.2	0.4	3.8	0.3	3.4	0.2	3	0.1	2.8	no
t <sub>pHL</sub>	Ь	_ ^	2.2	0.4	3.8	0.3	3.4	0.2	3	0.1	2.8	ns
t <sub>pHZ</sub>	DIR	Α	3.1	1.3	4.3	1.3	4.3	1.3	4.3	1.3	4.3	20
t <sub>pLZ</sub>	DIK	A	3.1	1.3	4.3	1.3	4.3	1.3	4.3	1.3	4.3	ns
t <sub>pHZ</sub>	DIR	В	4	0.7	7.4	0.6	6.5	0.7	4	1.5	4.9	20
t <sub>pLZ</sub>	DIK	Ь	4	0.7	7.4	0.6	6.5	0.7	4	1.5	4.9	ns
t <sub>pZH</sub> *	DID	^	6.2	_	11.2	_	9.9	_	7	_	6.7	20
t <sub>pZL</sub> *	DIR A	A	6.2		11.2	_	9.9	_	7	_	6.7	ns
t <sub>pZH</sub> *	DIR	В	5.7	_	8.9	_	8.5	_	7.2	_	6.8	20
t <sub>pZL</sub> *	אוט	Б	5.7	_	8.9	_	8.5	_	7.2	_	6.8	ns

 $<sup>^{\</sup>star}\mathsf{Enable}$  times are calculated vales see table at end of switching characteristics.



### **Enable Time Calculations**

Enable times can be calculated as follows:

- $t_{pZH}$  (DIR to A) =  $t_{pLZ}$  (DIR to B) +  $t_{pLH}$  (B to A)
- $t_{pZL}$  (DIR to A) =  $t_{pHZ}$  (DIR to B) +  $t_{pHL}$  (B to A)
- $t_{pZH}$  (DIR to B) =  $t_{pLZ}$  (DIR to A) +  $t_{pLH}$  (A to B)
- $t_{pZL}$  (DIR to B) =  $t_{pHZ}$  (DIR to A) +  $t_{pHL}$  (A to B)

These times represent the length of time from a direction change plus the propagation time through the part.

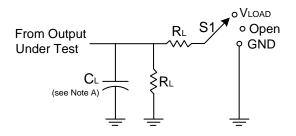
A new input signal must not be applied until the new input pin has been disabled.

### Operating Characteristics (T<sub>A</sub> = +25°C, unless otherwise specified.)

Parameter Power Dissipation Capacitance		Test Conditions	$V_{CC}(A) = V_{CC}(B) = 1.8V$ Typ	$V_{CC}(A) = V_{CC}(B) = 2.5V$ Typ	$V_{CC}(A) = V_{CC}(B) = 3.3V$ Typ	$V_{CC}(A) = V_{CC}(B) = 5V$ Typ	Unit
	A- Input, B- Output	$C_L = 0 pF$	3	4	4	4	
C <sub>pd</sub> (A)	B- Input, A- Output	f = 10  MHz tr = tf = 1  ns	18	19	20	21	pF
	A- Input, B- Output	$C_L = 0 pF$	18	19	20	21	
C <sub>pd</sub> (B)	B- Input, A- Output	f = 10  MHz tr = tf = 1  ns	3	4	4	4	pF

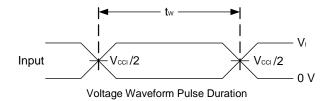


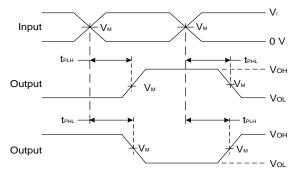
### **Parameter Measurement Information**



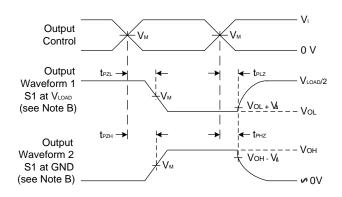
TEST	S1
t <sub>PLH</sub> /t <sub>PHL</sub>	Open
t <sub>PLZ</sub> /t <sub>PZL</sub>	Vload
t <sub>PHZ</sub> /t <sub>PZH</sub>	GND

Vcc	Inputs		V V	v			
	VI	t <sub>r</sub> /t <sub>f</sub>	V <sub>M</sub>	V <sub>LOAD</sub>	CL	RL	<b>V</b> Δ
1.2V	Vccı	≤2ns	V <sub>CCO</sub> /2	2 × V <sub>CCO</sub>	15pF	2ΚΩ	0.15V
1.8V±0.15V	V <sub>CCI</sub>	≤2ns	V <sub>CCO</sub> /2	2 × V <sub>CCO</sub>	15pF	2ΚΩ	0.15V
2.5V±0.2V	Vccı	≤2ns	V <sub>CCO</sub> /2	2 × Vcco	15pF	2ΚΩ	0.15V
3.3V±0.3V	V <sub>CCI</sub>	≤2.5ns	V <sub>CCO</sub> /2	2 × V <sub>CCO</sub>	15pF	2ΚΩ	0.3V





Voltage Waveform Propagation Delay Times Inverting and Non Inverting Outputs



Voltage Waveform Enable and Disable Times Low and High Level Enabling

Figure 1. Load Circuit and Voltage Waveforms

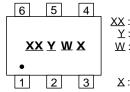
Notes: A. Includes test lead and test apparatus capacitance.

- B. Waveform 1 is for an output with input set up as a low and device coming out or into 3-state via DIR control. Waveform 2 is for an output with input set up as a high and device coming out or into 3-state via DIR control.
- C. All pulses are supplied at pulse repetition rate ≤ 10 MHz.
- D. t<sub>PLZ</sub> and t<sub>PHZ</sub> are the same as t<sub>dis.</sub>
- E.  $t_{PZL}$  and  $t_{PZH}$  are the same as  $t_{EN.}$
- F.  $t_{PLH}$  and  $t_{PHL}$  are the same as  $t_{PD.}$
- G.  $V_{\text{CCI}}$  is the  $V_{\text{CC}}$  associated with the input.
- F.  $V_{CCO}$  is the  $V_{CC}$  associated with the output.



### **Marking Information**

#### (1) SOT363, SOT563



XX: Identification code

Y: Year 0~9

<u>W</u>: Week: A~Z: 1~26 week;

a~z : 27~52 week; z represents 52 and 53 week

X: A~Z: Internal Code

Part Number	Package	Identification Code
74AVC1T45W6-7	SOT26	7A
74AVC1T45DW-7	SOT363	7B

#### (2) X2-DFN1010-6, X2-DFN1410-6, and X2-DFN1409-6

#### (Top View)

XX  $\frac{XX}{Y}$ : Identification Code  $\frac{X}{Y}$ : Year: 0~9

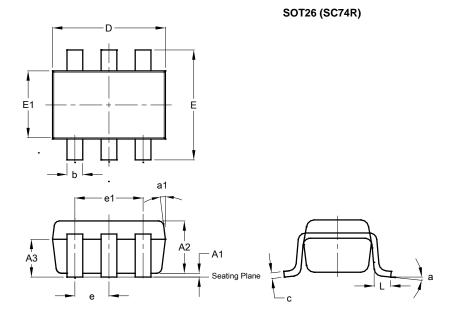
W: Week: A~Z: 1~26 week; a~z: 27~52 week; z represents 52 and 53 week

 $\underline{X}$ : A~Z: Internal code

Package	Identification Code
X2-DFN0910-6	7A
X1-DFN1010-6	7X
X2-DFN1409-6	7B
X2-DFN1410-6	7C
	X2-DFN0910-6 X1-DFN1010-6 X2-DFN1409-6



Please see http://www.diodes.com/package-outlines.html for the latest version.

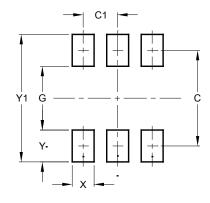


,	SOT26 (SC74R)				
Dim	Min	Max	Тур		
A1	0.013	0.10	0.05		
A2	1.00	1.30	1.10		
A3	0.70	0.80	0.75		
b	0.35	0.50	0.38		
С	0.10	0.20	0.15		
D	2.90	3.10	3.00		
е	-	-	0.95		
e1	-	-	1.90		
Е	2.70	3.00	2.80		
E1	1.50	1.70	1.60		
L	0.35	0.55	0.40		
а	-	-	8°		
a1	-	-	7°		
All Dimensions in mm					

### **Suggested Pad Layout**

Please see http://www.diodes.com/package-outlines.html for the latest version.

### SOT26 (SC74R)

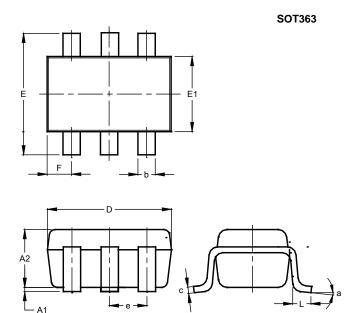


Dimensions	Value (in mm)
С	2.40
C1	0.95
G	1.60
Х	0.55
Y	0.80
Y1	3 20



# 

Please see http://www.diodes.com/package-outlines.html for the latest version.

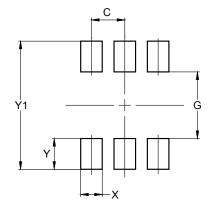


SOT363					
Dim	Min	Max	Тур		
A1	0.00	0.10	0.05		
A2	0.90	1.00	0.95		
b	0.10	0.30	0.25		
С	0.10	0.22	0.11		
D	1.80	2.20	2.15		
E	2.00	2.20	2.10		
E1	1.15	1.35	1.30		
е	C	).650 E	3SC		
F	0.40	0.45	0.425		
L	0.25	0.40	0.30		
а	0°	8°			
All Dimensions in mm					

# Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

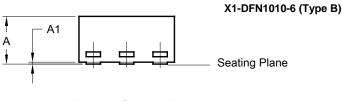
#### **SOT363**

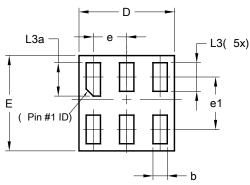


Dimensions	Value (in mm)
С	0.650
G	1.300
Х	0.420
Y	0.600
Y1	2.500



Please see http://www.diodes.com/package-outlines.html for the latest version.



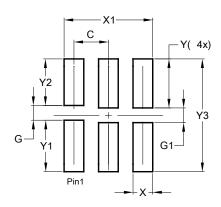


X1-DFN1010-6				
		pe B)		
Dim	Min	Max	Тур	
Α	1	0.50	0.39	
A1	-	0.04	-	
b	0.12	0.20	0.15	
D	0.95	1.050	1.00	
Е	0.95	1.050	1.00	
е		0.35 B	SC	
e1		0.55 B	SC	
L3	0.27	0.30	0.30	
L3a	0.32	0.40	0.35	
All Dimensions in mm				

### **Suggested Pad Layout**

Please see http://www.diodes.com/package-outlines.html for the latest version.

#### X1-DFN1010-6 (Type B)

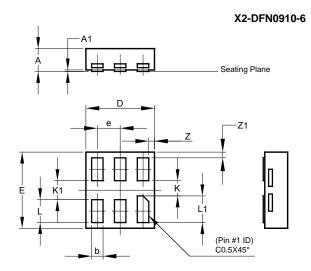


Dimensions	Value
Dillielisiolis	(in mm)
С	0.350
G	0.150
G1	0.150
Х	0.200
X1	0.900
Υ	0.500
Y1	0.525
Y2	0.475
Y3	1.150



# 

Please see http://www.diodes.com/package-outlines.html for the latest version.

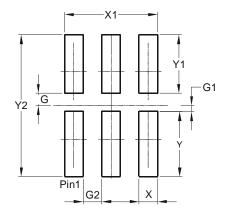


X2-DFN0910-6					
Dim	Min	Max	Тур		
Α	-	0.35	0.30		
A1	0	0.03	0.02		
b	0.10	0.20	0.15		
D	0.85	0.95	0.90		
Е	0.95	1.05	1.00		
е	-	-	0.30		
K	0.20	-	-		
K1	0.25	-	-		
L	0.25	0.35	0.30		
L1	0.30	0.40	0.35		
Z	-	-	0.075		
<b>Z</b> 1	-	-	0.075		
All Dimensions in mm					

### **Suggested Pad Layout**

Please see http://www.diodes.com/package-outlines.html for the latest version.

### X2-DFN0910-6

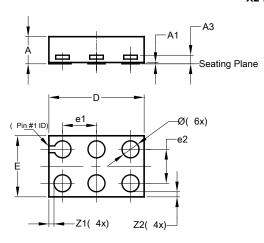


Dimensions	Value	
Difficilisions	(in mm)	
G	0.100	
G1	0.050	
G2	0.150	
Х	0.150	
X1	0.750	
Υ	0.525	
Y1	0.475	
Y2	1 150	



Please see http://www.diodes.com/package-outlines.html for the latest version.

#### X2-DFN1409-6

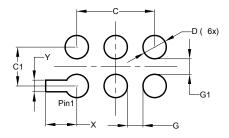


X2-DFN1409-6			
Dim	Min	Max	Тур
Α	-	0.40	0.39
A1	0	0.05	0.02
A3	-	-	0.13
Ø	0.20	0.30	0.25
D	1.35	1.45	1.40
Е	0.85	0.95	0.90
e1	-	-	0.50
e2	-	-	0.50
Z1	-	-	0.075
Z2	-	-	0.075
All Dimensions in mm			

### **Suggested Pad Layout**

Please see http://www.diodes.com/package-outlines.html for the latest version.

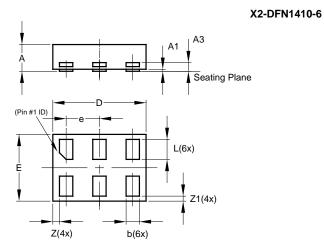
#### X2-DFN1409-6



Dimensions	Value	
Dillicitatoria	(in mm)	
С	1.000	
C1	0.500	
D	0.300	
G	0.200	
G1	0.200	
Х	0.400	
Υ	0.150	



Please see http://www.diodes.com/package-outlines.html for the latest version.

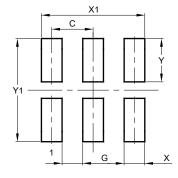


X2-DFN1410-6			
Dim	Min	Max	Тур
Α	_	0.40	0.39
A1	0.00	0.05	0.02
A3			0.13
b	0.15	0.25	0.20
D	1.35	1.45	1.40
Е	0.95	1.05	1.00
е	_		0.50
L	0.25	0.35	0.30
Z	_		0.10
Z1	0.045	0.105	0.075
All Dimensions in mm			

### **Suggested Pad Layout**

Please see http://www.diodes.com/package-outlines.html for the latest version.

#### X2-DFN1410-6



Dimension	Value
s	(in mm)
С	0.500
G	0.250
Х	0.250
X1	1.250
Υ	0.525
Y1	1.250



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