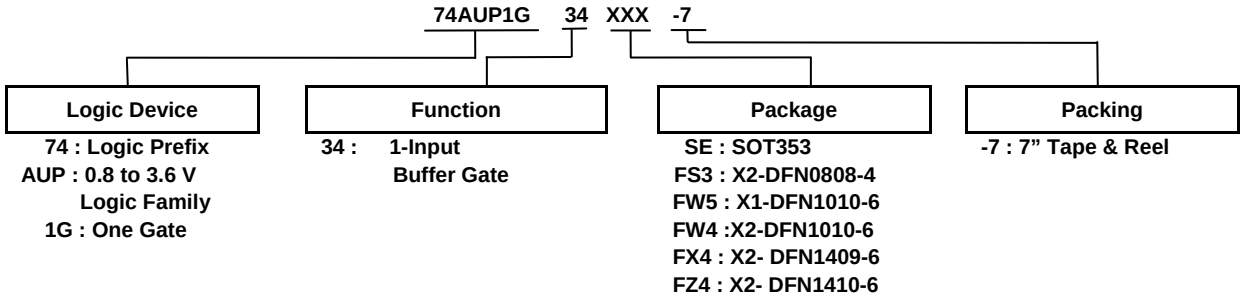
Ordering Information



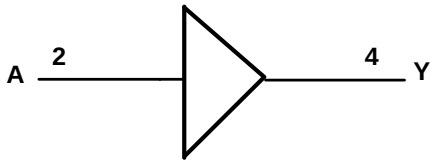
Device	Package Code	Package (Notes 4, 5)	Package Size	7" Tape and Reel	
				Quantity	Part Number Suffix
74AUP1G34SE-7	SE	SOT353	2.0mm X 2.0mm X 1.1mm 0.65 mm lead pitch	3000/Tape & Reel	-7
74AUP1G34FS3-7	FS3	X2-DFN0808-4	0.8mm X 0.8mm X 0.35mm 0.5 mm pad pitch (diamond)	5000/Tape & Reel	-7
74AUP1G34FW5-7	FW5	X1-DFN1010-6	1.0mm X 1.0mm X 0.5mm 0.35 mm pad pitch	5000/Tape & Reel	-7
74AUP1G34FW4-7	FW4	X2-DFN1010-6	1.0mm X 1.0mm X 0.4mm 0.35 mm pad pitch	5000/Tape & Reel	-7
74AUP1G34FX4-7	FX4	X2-DFN1409-6 Chip scale alternative	1.4mm X 0.9mm X 0.4mm 0.5 mm pad pitch	5000/Tape & Reel	-7
74AUP1G34FZ4-7	FZ4	X2-DFN1410-6	1.4mm X 1.0mm X 0.4mm 0.5 mm pad pitch	5000/Tape & Reel	-7

Notes: 4. Pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
5. The taping orientation is located on our website at http://www.diodes.com/datasheets/ap02007.pdf.

Pin Descriptions

Pin Name	Function
NC	No Connection
A	Data Input
GND	Ground
Y	Data Output
V_{CC}	Supply Voltage

Logic Diagram



Function Table

Inputs	Output
A	Y
H	H
L	L

Absolute Maximum Ratings (Notes 6, 7) (@T_A = +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
V_{CC}	Supply Voltage Range	-0.5 to +4.6	V
V_I	Input Voltage Range	-0.5 to +4.6	V
V_o	Voltage Applied to Output in High or Low State	-0.5 to V_{CC} +0.5	V
I_{IK}	Input Clamp Current $V_I < 0$	50	mA
I_{OK}	Output Clamp Current ($V_O < 0$)	50	mA
I_O	Continuous Output Current (V_O = 0 to V_{CC})	±20	mA
I_{CC}	Continuous Current Through V_{CC}	50	mA
I_{GND}	Continuous Current Through GND	-50	mA
T_J	Operating Junction Temperature	-40 to +150	°C
T_{STG}	Storage Temperature	-65 to +150	°C

Notes: 6. Stresses beyond the absolute maximum may result in immediate failure or reduced reliability. These are stress values and device operation should be within recommend values.
7. Forcing the maximum allowed voltage could cause a condition exceeding the maximum current or conversely forcing the maximum current could cause a condition exceeding the maximum voltage. The ratings of both current and voltage must be maintained within the controlled range.

Recommended Operating Conditions (Note 8) (@T_A = +25°C, unless otherwise specified.)

Symbol	Parameter		Min	Max	Unit
V_{CC}	Operating Voltage		0.8	3.6	V
V_I	Input Voltage		0	3.6	V
V_O	Output Voltage		0	V_{CC}	V
I_{OH}	High-Level output current	V_{CC} = 0.8V	—	-20	µA
		V_{CC} = 1.1V	—	-1.1	mA
		V_{CC} = 1.4V	—	-1.7	
		V_{CC} = 1.65V	—	-1.9	
		V_{CC} = 2.3V	—	-3.1	
		V_{CC} = 3.0V	—	-4	
I_{OL}	Low-Level output current	V_{CC} = 0.8V	—	20	µA
		V_{CC} = 1.1V	—	1.1	mA
		V_{CC} = 1.4V	—	1.7	
		V_{CC} = 1.65V	—	1.9	
		V_{CC} = 2.3V	—	3.1	
		V_{CC} = 3.0V	—	4	
Δt/ΔV	Input Transition Rise or Fall Rate	V_{CC} = 0.8V to 3.6V	—	200	ns/V
T_A	Operating Free-Air Temperature		-40	+125	°C

Note: 8. Unused inputs should be held at V_{CC} or Ground.

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	V_{CC}	T_A = +25°C		T_A = -40°C to +85°C		Unit
				Min	Max	Min	Max	
V_{IH}	High-Level Input Voltage	—	0.8V to 1.65V	0.80 X V_{CC}	—	0.80 X V_{CC}	—	V
		—	1.65V to 1.95V	0.65 X V_{CC}	—	0.65 X V_{CC}	—	
		—	2.3V to 2.7V	1.6	—	1.6	—	
		—	3.0V to 3.6V	2.0	—	2.0	—	
V_{IL}	Low-Level Input Voltage	—	0.8V to 1.65V	—	0.30 X V_{CC}	—	0.30 X V_{CC}	V
		—	1.65V to 1.95V	—	0.35 X V_{CC}	—	0.35 X V_{CC}	
		—	2.3V to 2.7V	—	0.7	—	0.7	
		—	3.0V to 3.6V	—	0.9	—	0.9	
V_{OH}	High-Level Output Voltage	I_{OH} = -20µA	0.8V to 3.6V	V_{CC} – 0.1	—	V_{CC} – 0.1	—	V
		I_{OH} = -1.1mA	1.1V	0.75 X V_{CC}	—	0.7 X V_{CC}	—	
		I_{OH} = -1.7mA	1.4V	1.11	—	1.03	—	
		I_{OH} = -1.9mA	1.65V	1.32	—	1.3	—	
		I_{OH} = -2.3mA	2.3V	2.05	—	1.97	—	
		I_{OH} = -3.1mA		1.9	—	1.85	—	
		I_{OH} = -2.7mA	3V	2.72	—	2.67	—	
		I_{OH} = -4mA		2.6	—	2.55	—	
V_{OL}	Low-Level Output Voltage	I_{OL} = 20µA	0.8V to 3.6V	—	0.1	—	0.1	V
		I_{OL} = 1.1mA	1.1V	—	0.3 X V_{CC}	—	0.3 X V_{CC}	
		I_{OL} = 1.7mA	1.4V	—	0.31	—	0.37	
		I_{OL} = 1.9mA	1.65V	—	0.31	—	0.35	
		I_{OL} = 2.3mA	2.3V	—	0.31	—	0.33	
		I_{OL} = 3.1mA		—	0.44	—	0.45	
		I_{OL} = 2.7mA	3V	—	0.31	—	0.33	
		I_{OL} = 4mA		—	0.44	—	0.45	
I_I	Input Current	A or B Input V_I = GND to 3.6V	0 to 3.6V	—	±0.1	—	±0.5	µA
I_{OFF}	Power Down Leakage Current	V_I or V_O = 0V to 3.6V	0	—	0.2	—	0.6	µA
ΔI_{OFF}	Delta Power Down Leakage Current	V_I or V_O = 0V to 3.6V	0 to 0.2V	—	0.2	—	0.6	µA
I_{CC}	Supply Current	V_I = GND or V_{CC}, I_O = 0	0.8V to 3.6V	—	0.5	—	0.9	µA
ΔI_{CC}	Additional Supply Current	Input at V_{CC} -0.6	3.3V	—	40	—	50	µA

Electrical Characteristics (cont.) (@T_A = +25°C, unless otherwise specified.)

Symbol	Parameter	Test Conditions	V_{CC}	T_A = -40°C to +125°C		Unit
				Min	Max	
V_{IH}	High-Level Input Voltage	—	0.8V to 1.65V	0.80 X V_{CC}	—	V
		—	1.65V to 1.95V	0.70 X V_{CC}	—	
		—	2.3V to 2.7V	1.6	—	
		—	3.0V to 3.6V	2.0	—	
V_{IL}	Low-Level Input Voltage	—	0.8V to 1.65V	—	0.25 X V_{CC}	V
		—	1.65V to 1.95V	—	0.30 X V_{CC}	
		—	2.3V to 2.7V	—	0.7	
		—	3.0V to 3.6V	—	0.9	
V_{OH}	High-Level Output Voltage	I_{OH} = -20µA	0.8V to 3.6V	V_{CC} – 0.11	—	V
		I_{OH} = -1.1mA	1.1V	0.6 X V_{CC}	—	
		I_{OH} = -1.7mA	1.4V	0.93	—	
		I_{OH} = -1.9mA	1.65V	1.17	—	
		I_{OH} = -2.3mA	2.3V	1.77	—	
		I_{OH} = -3.1mA		1.67	—	
		I_{OH} = -2.7mA	3V	2.40	—	
		I_{OH} = -4mA		2.30	—	
V_{OL}	Low-Level Output Voltage	I_{OL} = 20µA	0.8V to 3.6V	—	0.11	V
		I_{OL} = 1.1mA	1.1V	—	0.33 X V_{CC}	
		I_{OL} = 1.7mA	1.4V	—	0.41	
		I_{OL} = 1.9mA	1.65V	—	0.39	
		I_{OL} = 2.3mA	2.3V	—	0.36	
		I_{OL} = 3.1mA		—	0.50	
		I_{OL} = 2.7mA	3V	—	0.36	
		I_{OL} = 4mA		—	0.50	
I_I	Input Current	A or B Input V_I = GND to 3.6V	0 to 3.6V	—	±0.75	µA
I_{OFF}	Power Down Leakage Current	V_I or V_O = 0 to 3.6V	0	—	±3.5	µA
ΔI_{OFF}	Delta Power Down Leakage Current	V_I or V_O = 0 to 3.6V	0 to 0.2V	—	±2.5	µA
I_{CC}	Supply Current	V_I = GND or V_{CC}, I_O = 0	0.8V to 3.6V	—	3.0	µA
ΔI_{CC}	Additional Supply Current	Input at V_{CC} -0.6V Other inputs at V_{CC} or GND	3.3V	—	75	µA

Switching Characteristics

C_L=5pF see Figure 1

Parameter	From Input	To Output	V_{CC}	T_A = +25°C			T_A = -40°C to +85°C		T_A = -40°C to +125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t_{pd}	A or B	Y	0.8V	—	15.0	—	—	—	—	—	ns
			1.2V ± 0.1V	2.6	4.7	9.2	2.0	10.0	2.0	11.0	
			1.5V ± 0.1V	2.1	3.4	5.7	1.6	6.5	1.6	7.2	
			1.8V ± 0.15V	1.8	2.9	4.5	1.4	5.2	1.4	5.8	
			2.5V ± 0.2V	1.5	2.3	3.5	1.2	4.2	1.2	4.6	
			3.3V ± 0.3V	1.0	2.1	3.2	1.0	3.8	1.0	4.2	

C_L=10pF see Figure 1

Parameter	From Input	To Output	V_{CC}	T_A = +25°C			T_A = -40°C to +85°C		T_A = -40°C to +125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t_{pd}	A or B	Y	0.8V	—	18.4	—	—	—	—	—	ns
			1.2V ± 0.1V	3.2	5.6	10.9	2.3	11.8	2.3	13.1	
			1.5V ± 0.1V	2.6	4.1	6.7	1.9	7.7	1.9	8.5	
			1.8V ± 0.15V	2.3	3.4	5.3	1.7	6.2	1.7	6.9	
			2.5V ± 0.2V	2.0	2.9	4.2	1.5	5.0	1.5	5.5	
			3.3V ± 0.3V	1.4	2.6	3.8	1.4	4.6	1.4	5.1	

C_L=15pF see Figure 1

Parameter	From Input	To Output	V_{CC}	T_A = +25°C			T_A = -40°C to +85°C		T_A = -40°C to +125°C		Unit
				Min	Typ	Max	Min	Max	Min	Max	
t_{pd}	A or B	Y	0.8V	—	21.9	—	—	—	—	—	ns
			1.2V ± 0.1V	3.6	6.4	12.6	2.6	13.8	2.6	15.2	
			1.5V ± 0.1V	3.0	4.6	7.6	2.2	8.9	2.2	9.8	
			1.8V ± 0.15V	2.6	3.9	6.0	2.0	7.2	2.0	7.9	
			2.5V ± 0.2V	2.3	3.3	4.8	1.8	5.7	1.8	6.3	
			3.3V ± 0.3V	1.6	3.1	4.2	1.6	5.0	1.6	5.5	

C_L=30pF see Figure 1

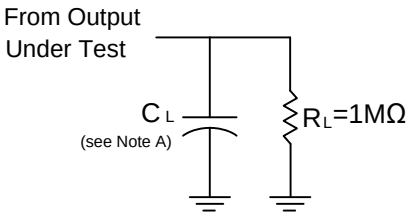
Parameter	From Input	To Output	V_{CC}	T_A = +25°C			T_A = -40°C to +85°C		T_A = -40°C to +125°C		Unit
				Min	Typ	Min	Min	Max	Min	Max	
t_{pd}	A or B	Y	0.8V	—	32.1	—	—	—	—	—	ns
			1.2V ± 0.1V	4.8	8.9	16.3	3.6	18.9	3.6	20.8	
			1.5V ± 0.1V	4	6.2	10.3	3.4	12.2	3.4	13.4	
			1.8V ± 0.15V	3.6	5.2	8.1	3.2	9.8	3.2	10.8	
			2.5V ± 0.2V	3	4.4	6.4	2.7	7.7	2.7	8.5	
			3.3V ± 0.3V	1.9	4.2	5.6	1.9	6.5	1.9	7.2	

Operating and Package Characteristics (@T_A = +25°C, unless otherwise specified.)

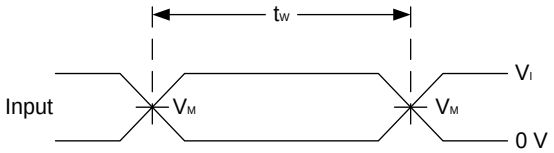
Parameter		Test Conditions		V_{CC}	Typ	Unit
C_{pd}	Power Dissipation Capacitance	f = 1MHz No Load		0.8V	6.7	pF
				1.2V ± 0.1V	6.6	
				1.5V ± 0.1V	6.5	
				1.8V ± 0.15V	6.5	
				2.5V ± 0.2V	6.4	
				3.3V ± 0.3V	6.3	
C_i	Input Capacitance	$V_i = V_{CC}$ or GND		0V or 3.3V	1.5	pF
θ_{JA}	Thermal Resistance Junction-to-Ambient	SOT353	(Note 9)	—	371	°C/W
		X2-DFN0808-4		—	430	
		X1-DFN1010-6		—	435	
		X2-DFN1010-6		—	445	
		X2-DFN1409-6		—	470	
		X2-DFN1410-6		—	460	
θ_{JC}	Thermal Resistance Junction-to-Case	SOT353	(Note 9	—	143	°C/W
		X2-DFN0808-4		—	240	
		X1-DFN1010-6		—	250	
		X2-DFN1010-6		—	250	
		X2-DFN1409-6		—	275	
		X2-DFN1410-6		—	265	

Note: 9. Test condition for each of the 6 package types: Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

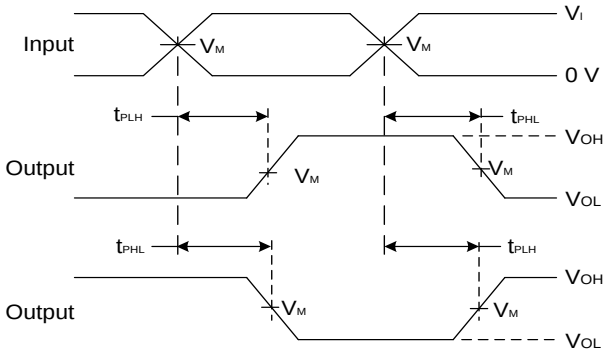
Parameter Measurement Information



Vcc	Inputs		V_M	C_L
	V_I	t_r/t_f		
0.8V	V_{CC}	≤3ns	$V_{CC}/2$	5, 10, 15, 30pF
1.2V±0.1V	V_{CC}	≤3ns	$V_{CC}/2$	5, 10, 15, 30pF
1.5V±0.1V	V_{CC}	≤3ns	$V_{CC}/2$	5, 10, 15, 30pF
1.8V ±0.15V	V_{CC}	≤3ns	$V_{CC}/2$	5, 10, 15, 30pF
2.5V±0.2V	V_{CC}	≤3ns	$V_{CC}/2$	5, 10, 15, 30pF
3.3V±0.3V	V_{CC}	≤3ns	$V_{CC}/2$	5, 10, 15, 30pF



Voltage Waveform Pulse Duration



Voltage Waveform Propagation Delay Times
Inverting and Non Inverting Outputs

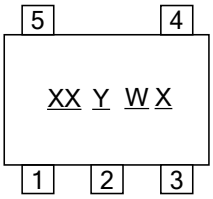
Figure 1 Load Circuit and Voltage Waveforms

Notes: A. Includes test lead and test apparatus capacitance.
B. All pulses are supplied at pulse repetition rate ≤ 10MHz.
C. Inputs are measured separately one transition per measurement.
D. t_{PLH} and t_{PHL} are the same as t_{PD}.

Marking Information

(1) SOT353

(Top View)

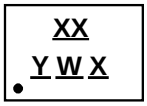


XX : Identification code
Y : Year 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents 52 and 53 week
X : A~Z : Internal code

Part Number	Package	Identification Code
74AUP1G34SE	SOT353	XV

(2) X2-DFN0808-4, X1-DFN1010-6, X2-DFN1010-6, X2-DFN1409-6 and X2-DFN1410-6

(Top View)



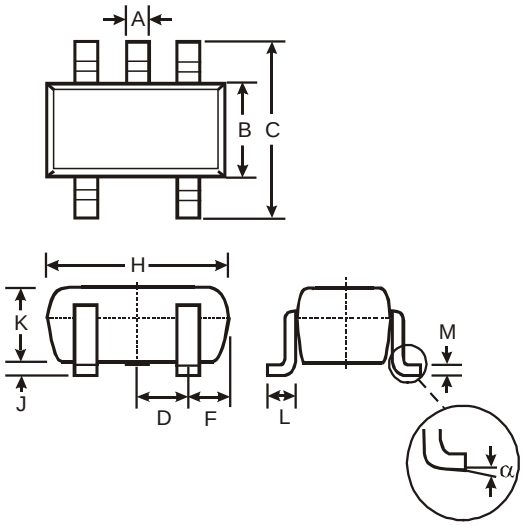
XX : Identification Code
Y : Year : 0~9
W : Week : A~Z : 1~26 week;
a~z : 27~52 week; z represents 52 and 53 week
X : A~Z : Internal code

Part Number	Package	Identification Code
74AUP1G34FS3	X2-DFN0808-4	YV
74AUP1G34FW5	X1-DFN1010-6	QV
74AUP1G34FW4	X2-DFN1010-6	XV
74AUP1G34FX4	X2-DFN1409-6	HM
74AUP1G34FZ4	X2-DFN1410-6	XV

Package Outline Dimensions (All dimensions in mm.)

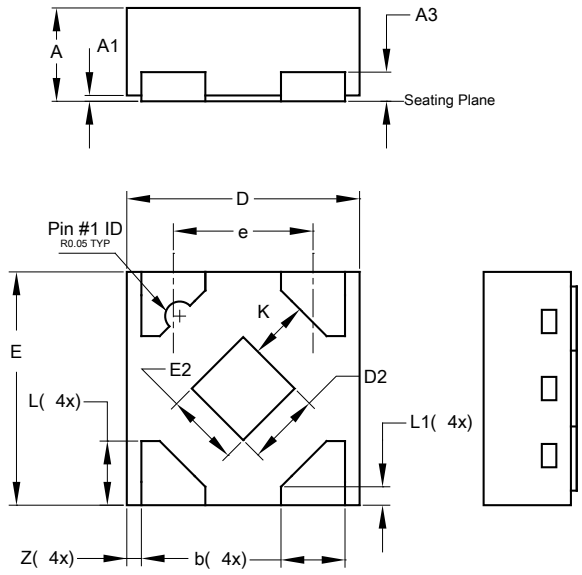
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.

(1) SOT353



SOT353			
Dim	**Min**	**Max**	**Typ**
A	0.10	0.30	0.25
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	0.65 Typ		
F	0.40	0.45	0.425
H	1.80	2.20	2.15
J	0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.22	0.11
α	0°	8°	-
All Dimensions in mm			

(2) X2-DFN0808-4

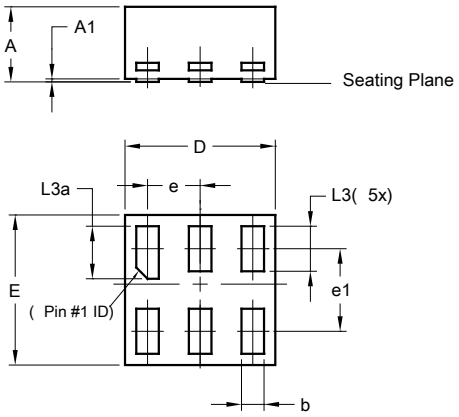


X2-DFN0808-4			
Dim	**Min**	**Max**	**Typ**
A	0.25	0.35	0.30
A1	0	0.04	0.02
A3	-	-	0.13
b	0.17	0.27	0.22
D	0.75	0.85	0.80
D2	0.15	0.35	0.25
E	0.75	0.85	0.80
E2	0.15	0.35	0.25
e	-	-	0.48
K	0.20	-	-
L	0.17	0.27	0.22
L1	0.02	0.12	0.07
Z	-	-	0.05
All Dimensions in mm			

Package Outline Dimensions (cont.) (All dimensions in mm.)

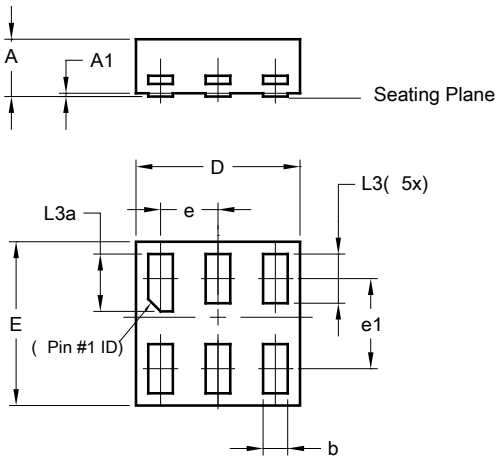
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.

(3) Package Type: X1-DFN1010-6



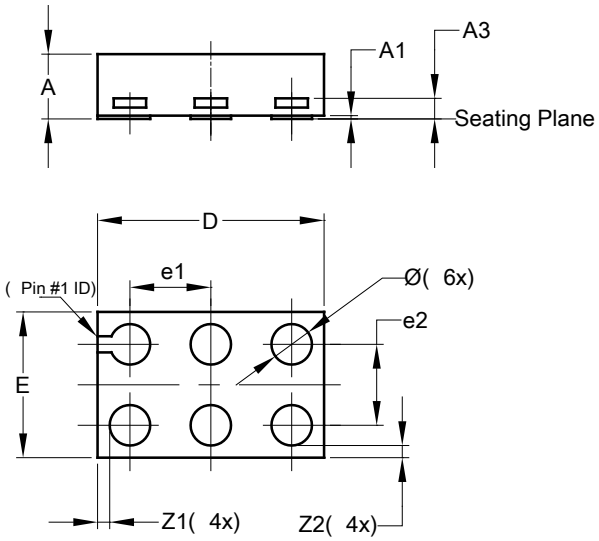
X1-DFN1010-6			
Dim	**Min**	**Max**	**Typ**
A	-	0.50	0.39
A1	-	0.04	-
b	0.12	0.20	0.15
D	0.95	1.050	1.00
E	0.95	1.050	1.00
e	0.55 BSC		
e1	0.35 BSC		
L3	0.27	0.30	0.30
L3a	0.32	0.40	0.35
All Dimensions in mm			

(4) X2-DFN1010-6



X2-DFN1010-6			
Dim	**Min**	**Max**	**Typ**
A	-	0.35	-
A1	-	0.04	-
b	0.12	0.20	0.15
D	0.95	1.050	1.00
E	0.95	1.050	1.00
e	0.55 BSC		
e1	0.35 BSC		
L3	0.27	0.30	0.30
L3a	0.32	0.40	0.35
All Dimensions in mm			

(5) X2-DFN1409-6

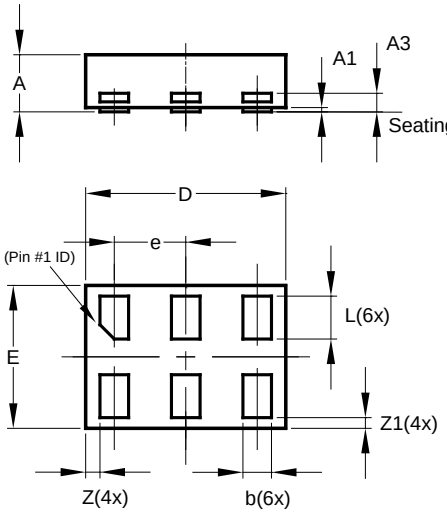


X2-DFN1409-6			
Dim	**Min**	**Max**	**Typ**
A	-	0.40	0.39
A1	0	0.05	0.02
A3	-	-	0.13
Ø	0.20	0.30	0.25
D	1.35	1.45	1.40
E	0.85	0.95	0.90
e1	-	-	0.50
e2	-	-	0.50
Z1	-	-	0.075
Z2	-	-	0.075
All Dimensions in mm			

Package Outline Dimensions (cont.) (All dimensions in mm.)

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.

(6) X2-DFN1410-6

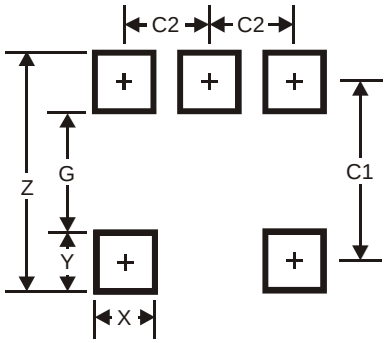


X2-DFN1410-6			
Dim	**Min**	**Max**	**Typ**
A	—	0.40	0.39
A1	0.00	0.05	0.02
A3	—	—	0.13
b	0.15	0.25	0.20
D	1.35	1.45	1.40
E	0.95	1.05	1.00
e	—	—	0.50
L	0.25	0.35	0.30
Z	—	—	0.10
Z1	0.045	0.105	0.075
All Dimensions in mm			

Suggested Pad Layout

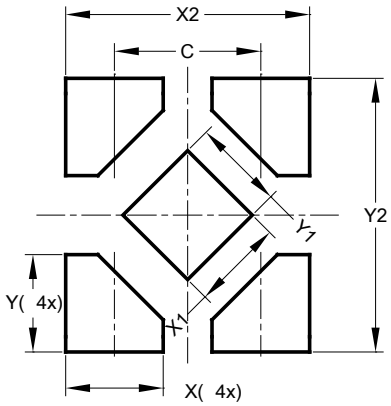
Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version

(1) SOT353



Dimensions	Value (in mm)
Z	2.5
G	1.3
X	0.42
Y	0.6
C1	1.9
C2	0.65

(2) X2-DFN0808-4

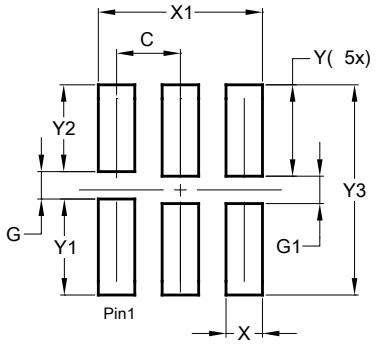


Dimensions	Value (in mm)
C	0.480
X	0.320
X1	0.300
X2	0.800
Y	0.320
Y1	0.300
Y2	0.900

Suggested Pad Layout

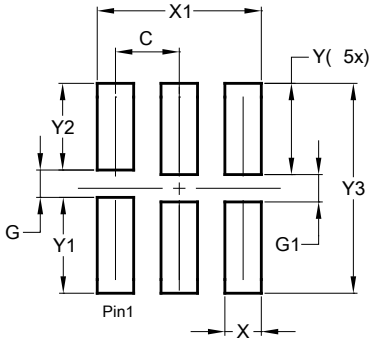
Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version

(3) X1-DFN1010-6



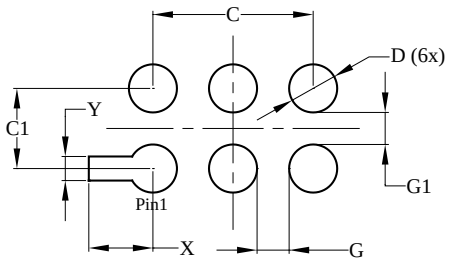
Dimensions	Value (in mm)
C	0.350
G	0.150
G1	0.150
X	0.200
X1	0.900
Y	0.500
Y1	0.525
Y2	0.475
Y3	1.150

(4) X2-DFN1010-6



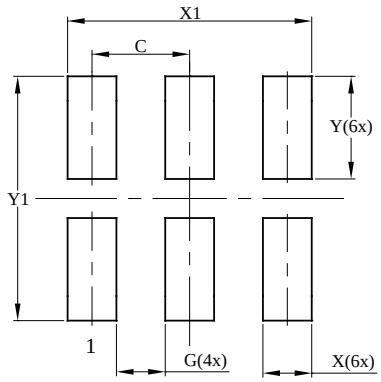
Dimensions	Value (in mm)
C	0.350
G	0.150
G1	0.150
X	0.200
X1	0.900
Y	0.500
Y1	0.525
Y2	0.475
Y3	1.150

(5) X2-DFN1409-6



Dimensions	Value (in mm)
C	1.000
C1	0.500
D	0.300
G	0.200
G1	0.200
X	0.400
Y	0.150

(6) X2-DFN1410-6



Dimensions	Value (in mm)
C	0.500
G	0.250
X	0.250
X1	1.250
Y	0.525
Y1	1.250

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