

Figure 2: Logic Diagram

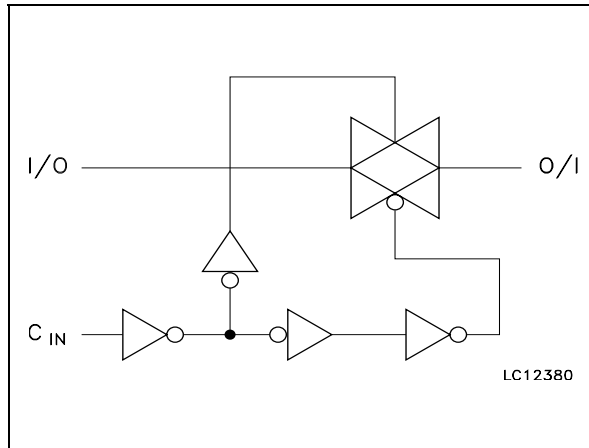


Table 2: Pin Description

PIN N°	SYMBOL	NAME AND FUNCTION
1, 4, 8, 11	1 to 4 I/O	Independent Input/Output
2, 3, 9, 10	1 to 4 O/I	Independent Output/Input
13, 5, 6, 12	1C to 4C	Enable Input (Active HIGH)
7	GND	Ground (0V)
14	V _{CC}	Positive Supply Voltage

Table 3: Truth Table

A	B
H	ON
L	OFF*

(*) High Impedance

Table 4: Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V _{CC}	Supply Voltage	-0.5 to +7	V
V _I	DC Input Voltage	-0.5 to V _{CC} + 0.5	V
V _O	DC Output Voltage	-0.5 to V _{CC} + 0.5	V
I _{IK}	DC Input Diode Current	± 20	mA
I _{OK}	DC Output Diode Current	± 20	mA
I _O	DC Output Current	± 50	mA
I _{CC} or I _{GND}	DC V _{CC} or Ground Current	± 200	mA
T _{stg}	Storage Temperature	-65 to +150	°C
T _L	Lead Temperature (10 sec)	300	°C

Absolute Maximum Ratings are those values beyond which damage to the device may occur. Functional operation under these conditions is not implied.

Table 5: Recommended Operating Conditions

Symbol	Parameter	Value	Unit
V _{CC}	Supply Voltage (note 1)	2 to 5.5	V
V _I	Input Voltage	0 to V _{CC}	V
V _O	Output Voltage	0 to V _{CC}	V
T _{op}	Operating Temperature	-55 to 125	°C
dt/dv	Input Rise and Fall Time on control pin V _{CC} = 3.0V (note 2)	0 to 10	ns/V

1) Truth Table guaranteed: 1.2V to 5.5V

2) V_{IN} from 30% to 70%V_{CC}

Table 6: DC Specifications

Symbol	Parameter	Test Condition		Value						Unit	
				T _A = 25°C			-40 to 85°C		-55 to 125°C		
		V _{CC} (V)		Min.	Typ.	Max.	Min.	Max.	Min.		Max.
V _{IH}	High Level Input Voltage	2.7 to		0.7 V _{CC}			0.7 V _{CC}		0.7 V _{CC}		V
V _{IL}	Low Level Input Voltage	5.5				0.3 V _{CC}		0.3 V _{CC}		0.3 V _{CC}	V
R _{ON}	ON Resistance	3.3 (**)	V _I =V _{IH} V _{I/O} =V _{CC} to GND I _{I/O} ≤ 1mA		16.5	23		32		40	Ω
		5.0(*)	I _{I/O} ≤ 1mA		12	17		22		26	
		3.3 (**)	V _I =V _{IH} V _{I/O} =V _{CC} or GND		12	17		24		30	
		5.0(*)	I _{I/O} ≤ 1mA		9.5	13		17		20	
R _{ON}	Difference of ON Resistance Between Switches	3.0 to 5.5	V _I =V _{IH} V _{I/O} =V _{CC} to GND I _{I/O} ≤ 1mA		2						Ω
I _{OFF}	Input/Output Leakage Current (SWITCH OFF)	5.5	V _{OS} = V _{CC} to GND V _{IS} = V _{CC} to GND V _I = V _{IL}			± 0.1		± 1.0		± 1.0	μA
I _{Iz}	Switch Input Leakage Current (SWITCH ON, OUTPUT OFF)	5.5	V _{OS} = V _{CC} to GND V _I = V _{IH}			± 0.1		± 1.0		± 1.0	μA
I _{IN}	Control Input Leakage Current	5.5	V _I = V _{CC} or GND			± 0.1		± 1.0		± 1.0	μA
I _{CC}	Quiescent Supply Current	5.5	V _I = V _{CC} or GND			2		20		20	μA

(*)Voltage range is 5V ±0.5V

(**)Voltage range is 3.3V ±0.3V

Table 7: AC Electrical Characteristics ($C_L = 50$ pF, Input $t_r = t_f = 3$ ns)

Symbol	Parameter	Test Condition		Value						Unit	
		V_{CC} (V)		$T_A = 25^\circ\text{C}$			-40 to 85°C		-55 to 125°C		
				Min.	Typ.	Max.	Min.	Max.	Min.		Max.
t_{PD}	Delay Time	3.3(*)			0.4	0.8		1.2		2.0	ns
		5.0(**)			0.1	0.2		1.0		1.8	
t_{PZL} t_{PZH}	Output Enable Time	3.3(*)	$R_L = 1$ k Ω		2.5	4.0		5.0		7.0	ns
		5.0(**)			2.0	4.0		5.0		7.0	
t_{PLZ} t_{PHZ}	Output Disable Time	3.3(*)	$R_L = 1$ k Ω		5.0	7.5		9.0		11.0	ns
		5.0(**)			5.0	7.5		9.0		11.0	
C_{IN}	Input Capacitance				5						pF
$C_{I/O}$	Switch Terminal Capacitance				10						pF
C_{PD}	Power Dissipation Capacitance (note 1)	3.3			2.5						pF
		5.0			3						

1) C_{PD} is defined as the value of the IC's internal equivalent capacitance which is calculated from the operating current consumption without load. (Refer to Test Circuit). Average operating current can be obtained by the following equation. $I_{CC(opr)} = C_{PD} \times V_{CC} \times f_{IN} + I_{CC}/4$ (Switch).

(*) Voltage range is $3.3V \pm 0.3V$

(**) Voltage range is $5V \pm 0.5V$

Table 8: Analog Switch Characteristics ($GND = 0$ V, $T_A = 25^\circ\text{C}$)

Symbol	Parameter	Test Condition		Value	Unit	
		V_{CC} (V)	V_{IN} (V _{p-p})			
	Sine Wave Distortion (THD)	3.3 5.0(*)	2.75 4	$f_{IN} = 1$ KHz $R_L = 10$ K Ω $C_L = 50$ pF	0.04 0.04	%
f_{MAX}	Frequency Response (Switch ON)	3.3	Adjust f_{IN} voltage to Obtain 0dBm at V_{OS} . Increase f_{IN} Frequency until dB Meter reads -3dB $R_L = 50\Omega$, $C_L = 10$ pF		150	MHz
		5.0(*)		180		
	Feed through Attenuation (Switch OFF)	3.3 5.0(*)	V_{IN} is centered at $V_{CC}/2$. Adjust input for 0dBm $R_L = 600\Omega$, $C_L = 50$ pF, $f_{IN} = 1$ MHz sine wave	-60 -60	dB	
	Crosstalk (Control Input to Signal Output)	3.3 5.0(*)		$R_L = 600\Omega$, $C_L = 50$ pF, $f_{IN} = 1$ MHz square wave		60 60
	Crosstalk (Between Any Switches)	3.3 5.0(*)	$R_L = 600\Omega$, $C_L = 50$ pF, $f_{IN} = 1$ MHz sine wave	-60 -60	dB	

(*) Voltage range is $5V \pm 0.5V$

Figure 3: Switching Characteristics Test Circuit

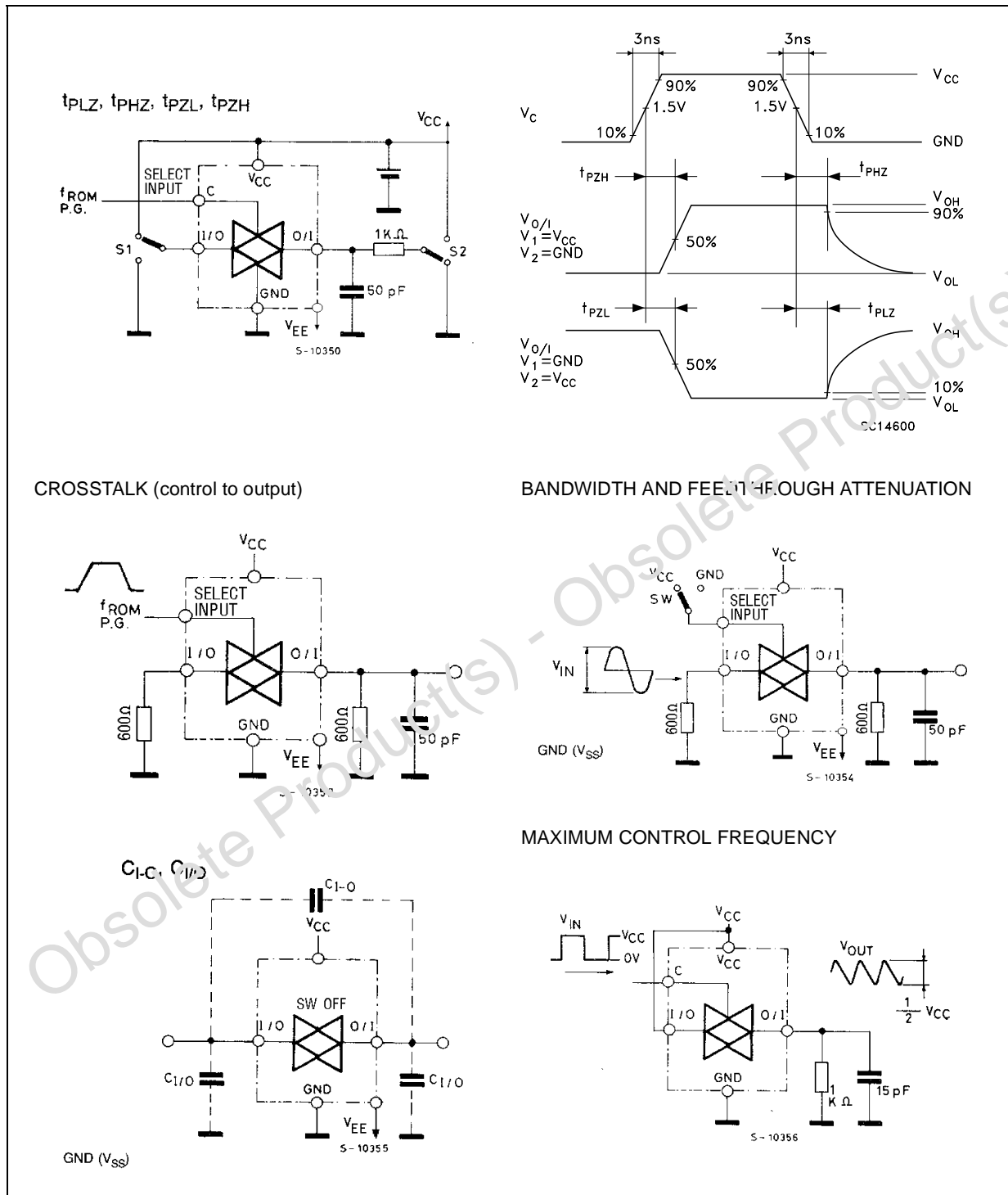
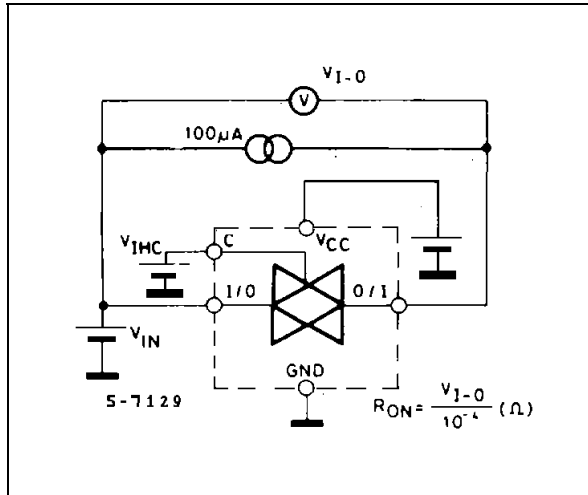
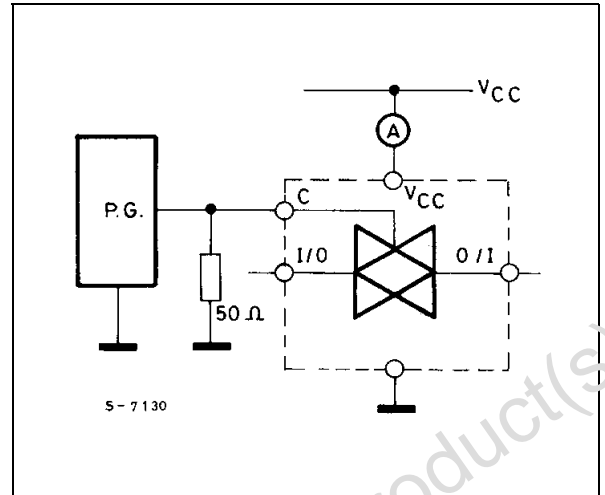
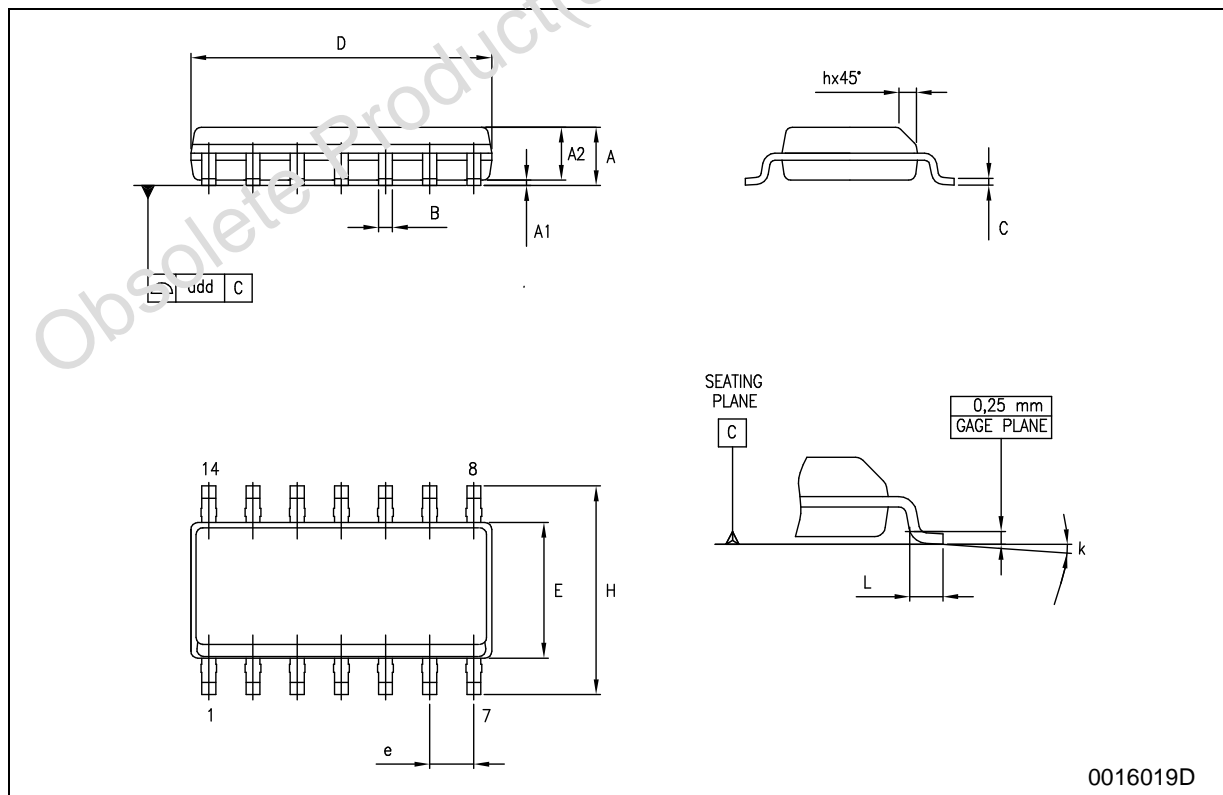


Figure 4: Channel Resistance (R_{ON})Figure 5: I_{CC} (Opr.)

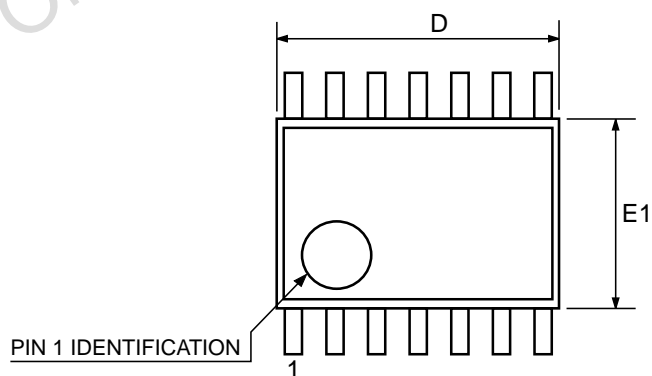
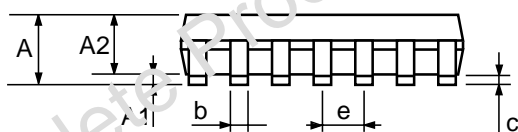
SO-14 MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	1.35		1.75	0.053		0.069
A1	0.1		0.25	0.004		0.010
A2	1.10		1.65	0.043		0.065
B	0.33		0.51	0.013		0.020
C	0.19		0.25	0.007		0.010
D	8.55		8.75	0.337		0.344
E	3.8		4.0	0.150		0.157
e		1.27			0.050	
H	5.8		6.2	0.228		0.244
h	0.25		0.50	0.010		0.020
L	0.4		1.27	0.016		0.050
k	0°		8°	0°		8°
ddd			0.100			0.004



TSSOP14 MECHANICAL DATA

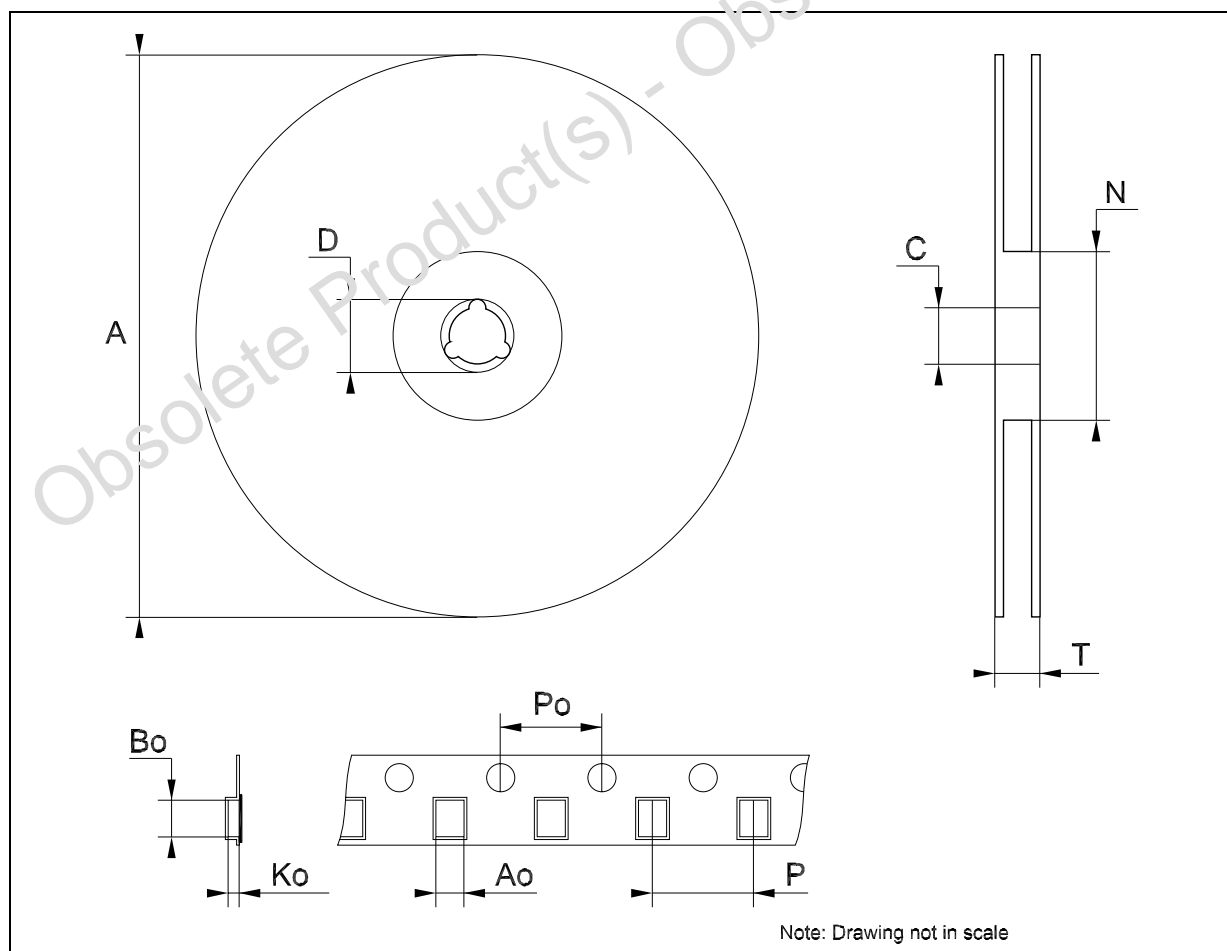
DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A			1.2			0.047
A1	0.05		0.15	0.002	0.004	0.006
A2	0.8	1	1.05	0.031	0.039	0.041
b	0.19		0.30	0.007		0.012
c	0.09		0.20	0.004		0.008
D	4.9	5	5.1	0.193	0.197	0.201
E	6.2	6.4	6.6	0.244	0.252	0.260
E1	4.3	4.4	4.48	0.169	0.173	0.176
e		0.65 BSC			0.0256 BSC	
K	0°		8°	0°		8°
L	0.45	0.60	0.75	0.018	0.024	0.030



0080337D

Tape & Reel SO-14 MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A			330			12.992
C	12.8		13.2	0.504		0.519
D	20.2			0.795		
N	60			2.362		
T			22.4			0.882
Ao	6.4		6.6	0.252		0.260
Bo	9		9.2	0.354		0.362
Ko	2.1		2.3	0.082		0.090
Po	3.9		4.1	0.153		0.161
P	7.9		8.1	0.311		0.319



Tape & Reel TSSOP14 MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A			330			12.992
C	12.8		13.2	0.504		0.519
D	20.2			0.795		
N	60			2.362		
T			22.4			0.882
Ao	6.7		6.9	0.264		0.272
Bo	5.3		5.5	0.209		0.217
Ko	1.6		1.8	0.063		0.071
Po	3.9		4.1	0.153		0.161
P	7.9		8.1	0.311		0.319

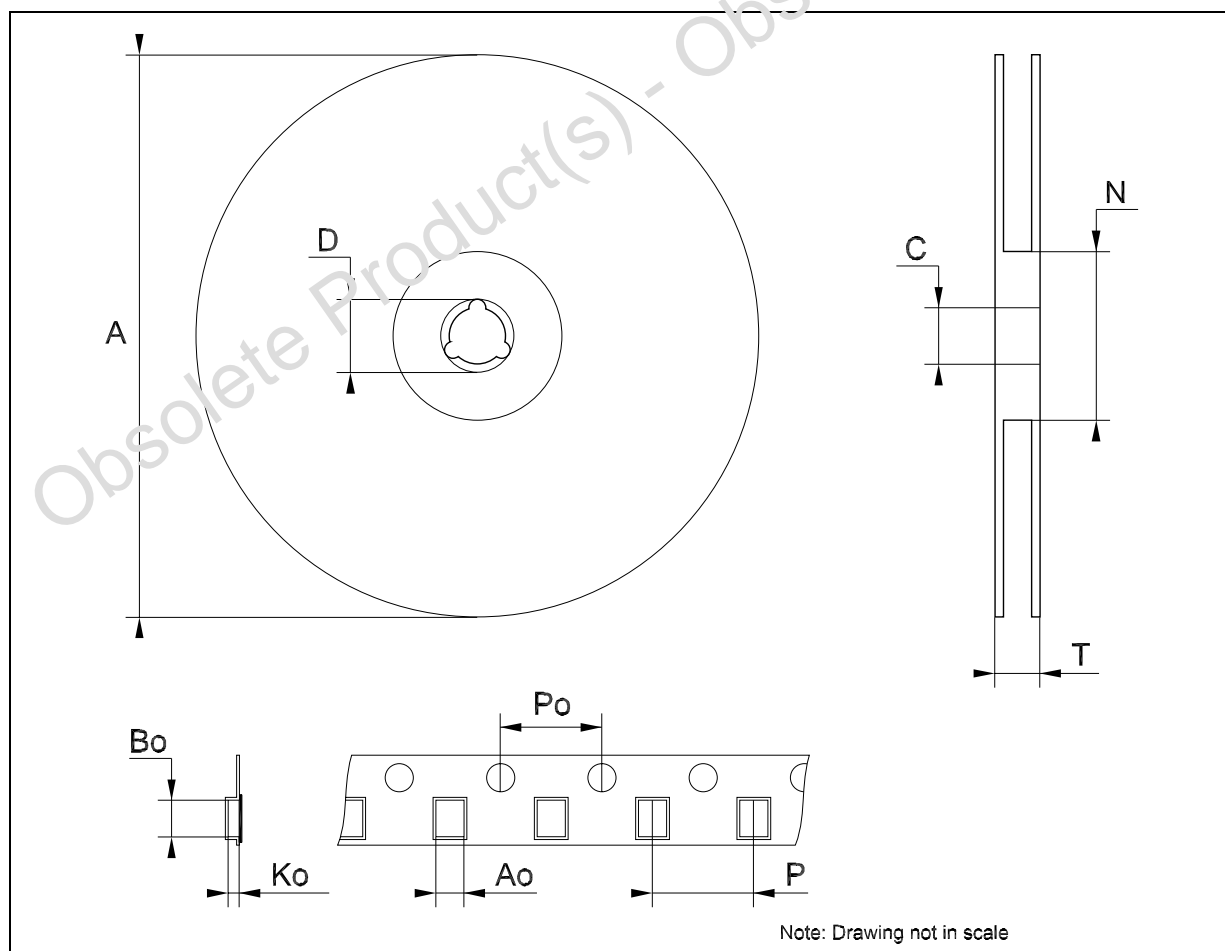


Table 9: Revision History

Date	Revision	Description of Changes
29-Jul-2004	8	Ordering Codes Revision - pag. 1.

Obsolete Product(s) - Obsolete Product(s)

Obsolete Product(s) - Obsolete Product(s)

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