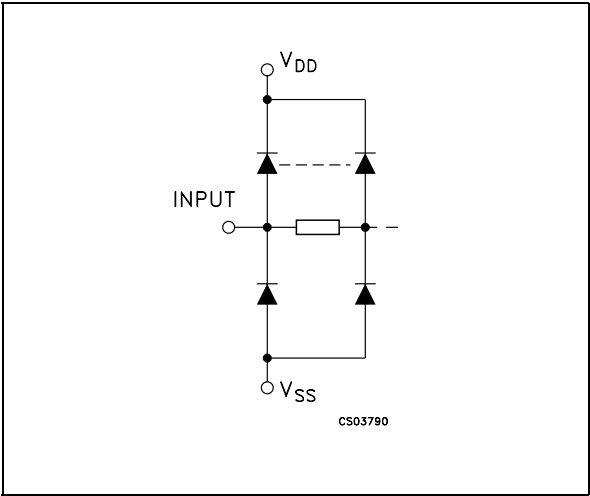


INPUT EQUIVALENT CIRCUIT



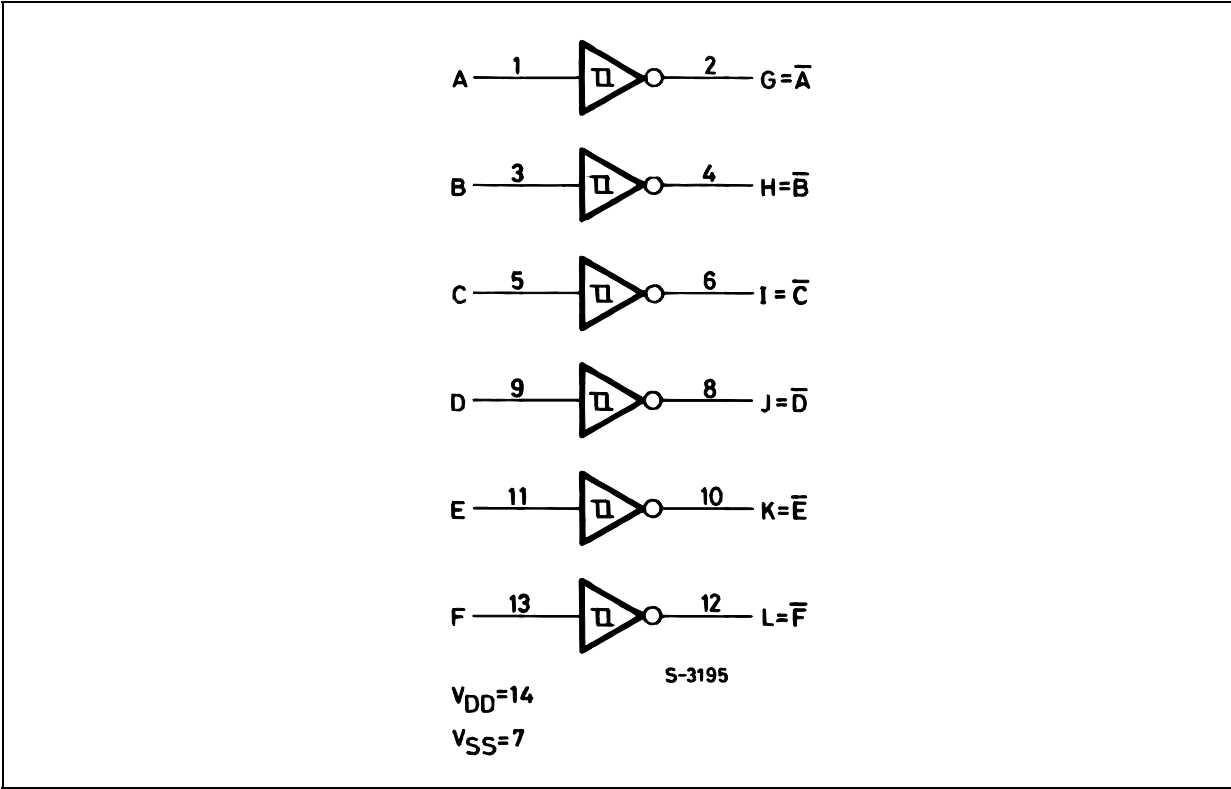
PIN DESCRIPTION

PIN N°	SYMBOL	NAME AND FUNCTION
1, 3, 5, 9, 11, 13	A, B, C, D, E, F	Data Inputs
2, 4, 6, 8, 10, 12	G, H, I, J, K, L	Data Outputs
7	V _{SS}	Negative Supply Voltage
14	V _{DD}	Positive Supply Voltage

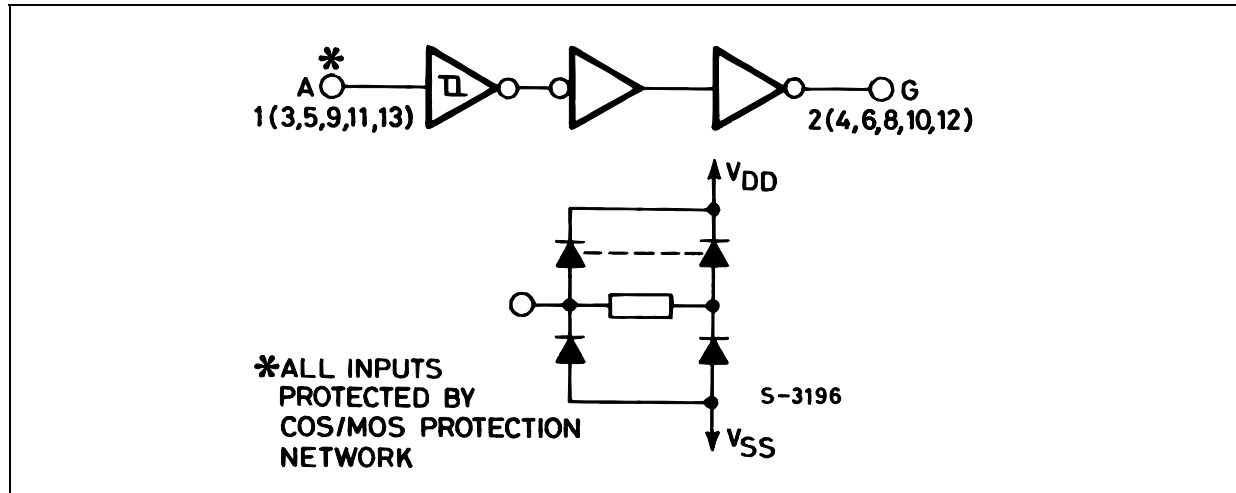
TRUTH TABLE

INPUTS	OUTPUTS
A to F	G to L
L	H
H	L

FUNCTIONAL DIAGRAM



LOGIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{DD}	Supply Voltage	-0.5 to +22	V
V_I	DC Input Voltage	-0.5 to $V_{DD} + 0.5$	V
I_I	DC Input Current	± 10	mA
P_D	Power Dissipation per Package	200	mW
	Power Dissipation per Output Transistor	100	mW
T_{op}	Operating Temperature	-55 to +125	°C
T_{stg}	Storage Temperature	-65 to +150	°C

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

All voltage values are referred to V_{SS} pin voltage.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Value	Unit
V_{DD}	Supply Voltage	3 to 20	V
V_I	Input Voltage	0 to V_{DD}	V
T_{op}	Operating Temperature	-55 to 125	°C

DC SPECIFICATIONS

Symbol	Parameter	Test Condition				Value							Unit
		V _I (V)	V _O (V)	I _{OL} (μA)	V _{DD} (V)	T _A = 25°C			-40 to 85°C		-55 to 125°C		
						Min.	Typ.	Max.	Min.	Max.	Min.	Max.	
I _L	Quiescent Current	0/5			5		0.02	1		30		30	μA
		0/10			10		0.02	2		60		60	
		0/15			15		0.02	4		120		120	
		0/20			20		0.04	20		600		600	
V _{OH}	High Level Output Voltage	0/5		<1	5	4.95			4.95		4.95		V
		0/10		<1	10	9.95			9.95		9.95		
		0/15		<1	15	14.95			14.95		14.95		
V _{OL}	Low Level Output Voltage	5/0		<1	5		0.05			0.05		0.05	V
		10/0		<1	10		0.05			0.05		0.05	
		15/0		<1	15		0.05			0.05		0.05	
V _P	Positive Trigger Threshold Voltage				5	2.2	2.9	3.6	2.2	3.6	2.2	3.6	V
					10	4.6	5.9	7.1	4.6	7.1	4.6	7.1	
					15	6.8	8.8	10.8	6.8	10.8	6.8	10.8	
V _N	Negative Trigger Threshold Voltage				5	0.9	1.9	2.8	0.9	2.8	0.9	2.8	V
					10	2.5	3.9	5.2	2.5	5.2	2.5	5.2	
					15	4	5.8	7.4	4	7.4	4	7.4	
V _H	Hysteresis Voltage				5	0.3	0.9	1.6	0.3	1.6	0.3	1.6	V
					10	1.2	2.3	3.4	1.2	3.4	1.2	3.4	
					15	1.6	3.5	5	1.6	5	1.6	5	
I _{OH}	Output Drive Current	0/5	2.5		5	-1.36	-3.2		-1.15		-1.1		mA
		0/5	4.6		5	-0.44	-1		-0.36		-0.36		
		0/10	9.5		10	-1.1	-2.6		-0.9		-0.9		
		0/15	13.5		15	-3.0	-6.8		-2.4		-2.4		
I _{OL}	Output Sink Current	0/5	0.4		5	0.44	1		0.36		0.36		mA
		0/10	0.5		10	1.1	2.6		0.9		0.9		
		0/15	1.5		15	3.0	6.8		2.4		2.4		
I _I	Input Leakage Current	0/18	Any Input		18		±10 ⁻⁵	±0.1		±1		±1	μA
C _I	Input Capacitance		Any Input				5	7.5					pF

The Noise Margin for both "1" and "0" level is: 1V min. with V_{DD}=5V, 2V min. with V_{DD}=10V, 2.5V min. with V_{DD}=15V

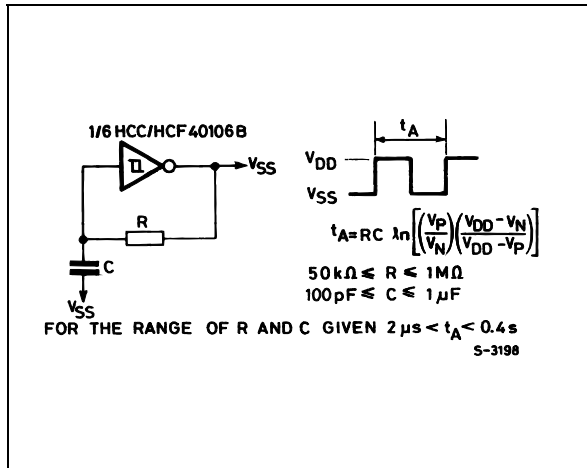
DYNAMIC ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C, C_L = 50pF, R_L = 200K Ω , t_r = t_f = 20 ns)

Symbol	Parameter	Test Condition		Value (*)			Unit
		V _{DD} (V)		Min.	Typ.	Max.	
t _{PLH} t _{PHL}	Propagation Delay Time	5			140	280	ns
		10			70	140	
		15			60	120	
t _{TLH} t _{THL}	Output Transition Time	5			100	200	ns
		10			50	100	
		15			40	80	

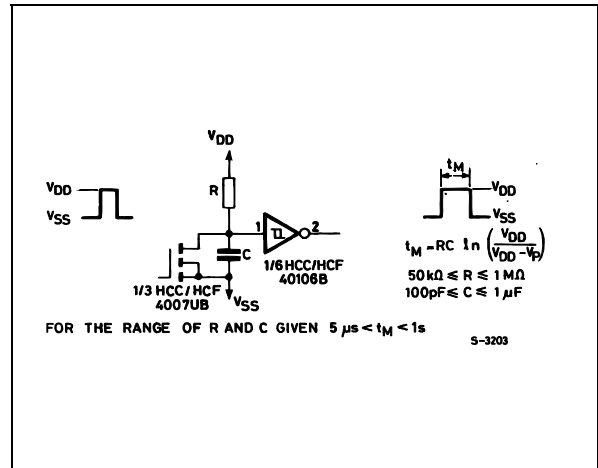
(*) Typical temperature coefficient for all V_{DD} value is 0.3%/°C.

TYPICAL APPLICATIONS

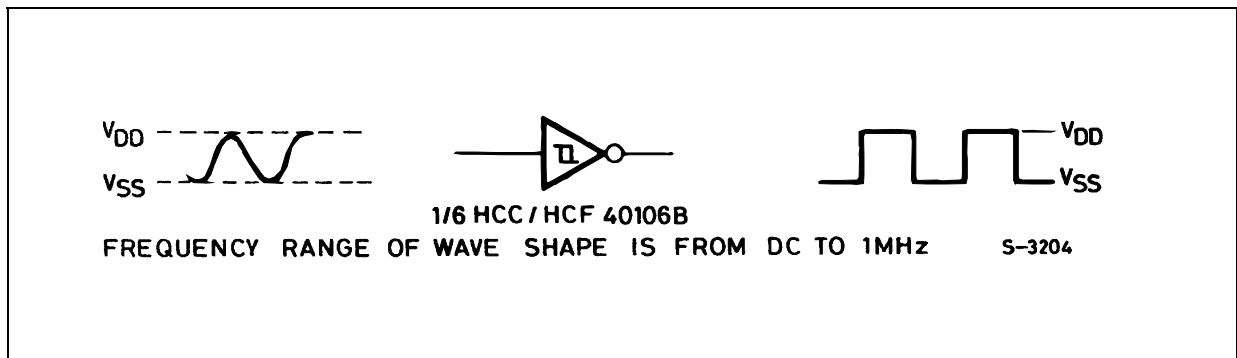
ASTABLE MULTIVIBRATOR



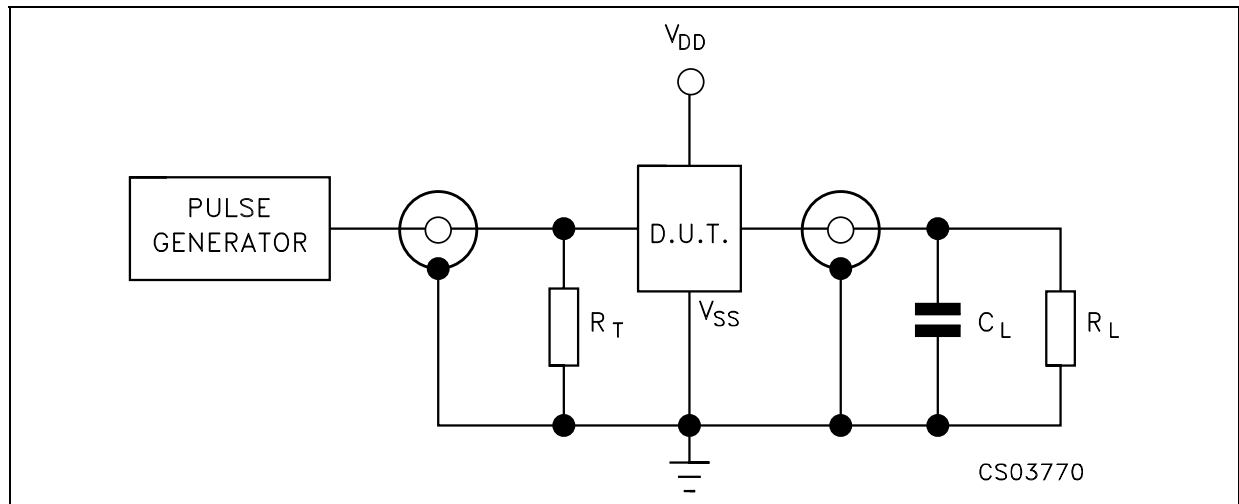
MONOSTABLE MULTIVIBRATOR



WAVE SHAPER

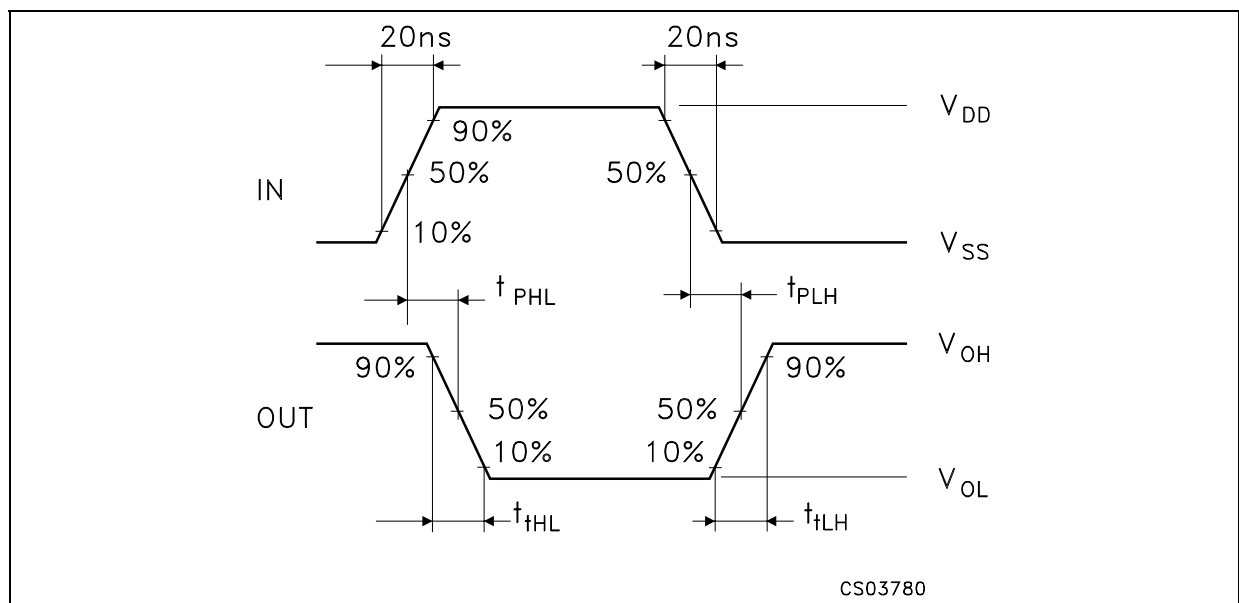


TEST CIRCUIT



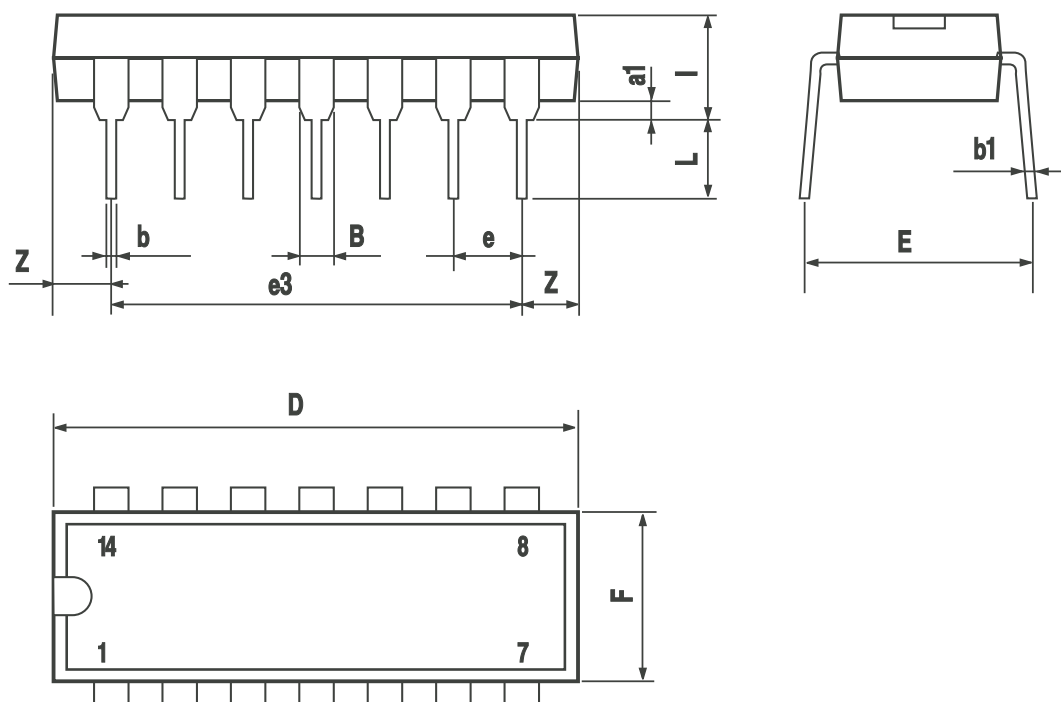
$C_L = 50\text{pF}$ or equivalent (includes jig and probe capacitance)
 $R_L = 200\text{K}\Omega$
 $R_T = Z_{OUT}$ of pulse generator (typically 50Ω)

WAVEFORM: PROPAGATION DELAY TIMES ($f=1\text{MHz}$; 50% duty cycle)



Plastic DIP-14 MECHANICAL DATA

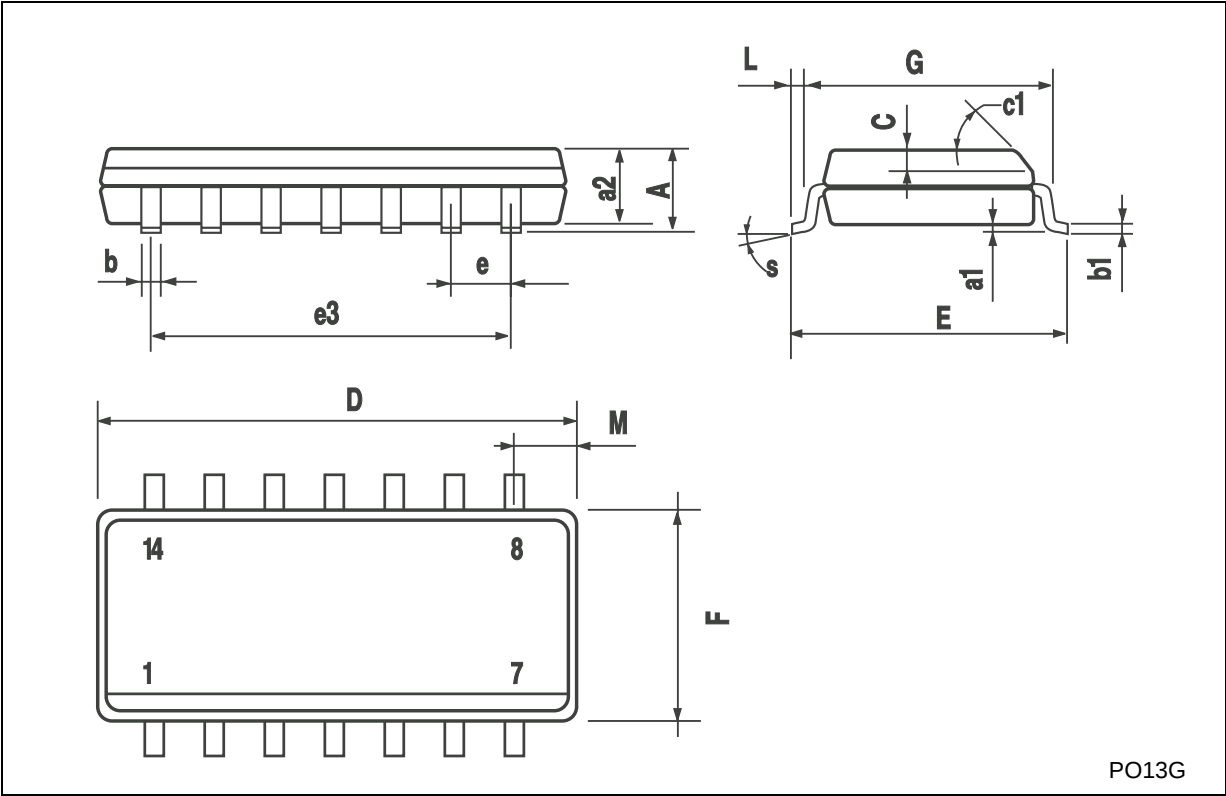
DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
a1	0.51			0.020		
B	1.39		1.65	0.055		0.065
b		0.5			0.020	
b1		0.25			0.010	
D			20			0.787
E		8.5			0.335	
e		2.54			0.100	
e3		15.24			0.600	
F			7.1			0.280
I			5.1			0.201
L		3.3			0.130	
Z	1.27		2.54	0.050		0.100



P001A

SO-14 MECHANICAL DATA

DIM.	mm.			inch		
	MIN.	TYP	MAX.	MIN.	TYP.	MAX.
A			1.75			0.068
a1	0.1		0.2	0.003		0.007
a2			1.65			0.064
b	0.35		0.46	0.013		0.018
b1	0.19		0.25	0.007		0.010
C		0.5			0.019	
c1	45° (typ.)					
D	8.55		8.75	0.336		0.344
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		7.62			0.300	
F	3.8		4.0	0.149		0.157
G	4.6		5.3	0.181		0.208
L	0.5		1.27	0.019		0.050
M			0.68			0.026
S	8° (max.)					

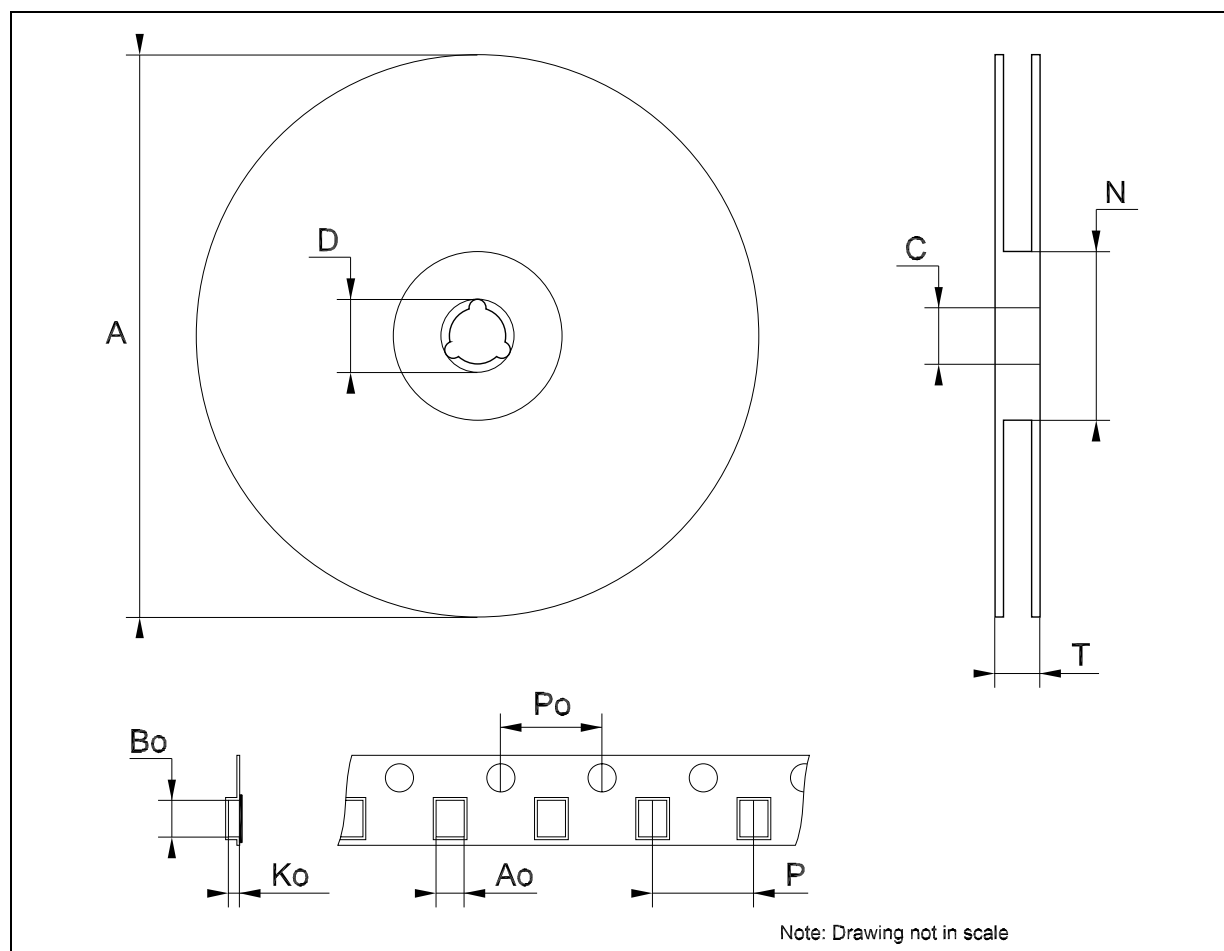


PO13G



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



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