DEVICE PHYSICAL DIMENSIONS

Figure 12: 28-Lead 8x13.4mm Plastic Thin Small Outline Package (TSOP) Type I (E)

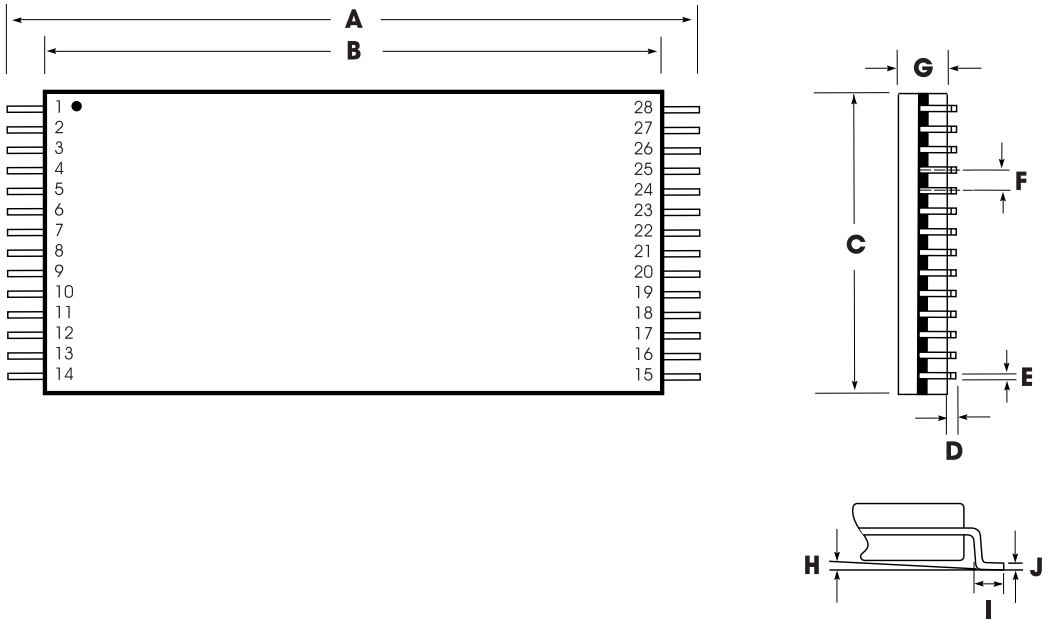


Table 13: Plastic Thin Small Outline Package (TSOP) Type I (E) Dimensions

	INCHES			MILLIMETERS		
	Min	Nom	Max	Min	Nom	Max
A	0.520	0.528	0.535	13.20	13.40	13.60
B	0.461	0.465	0.469	11.70	11.80	11.90
C	0.311	0.315	0.319	7.90	8.00	8.10
D	0.002		0.006	0.05		0.15
E	0.007	0.009	0.011	0.17	0.22	0.27
F		0.0217			0.55	
G	0.037	0.039	0.041	0.95	1.00	1.05
H	0°	3°	6°	0°	3°	6°
I	0.020	0.022	0.028	0.50	0.55	0.70
J	0.004		0.008	0.10		0.21

NOTE: *Lead coplanarity to be within 0.004 inches.*

Figure 13: 28-Lead 0.600-Inch Plastic Dual Inline Package (PDIP) (P)

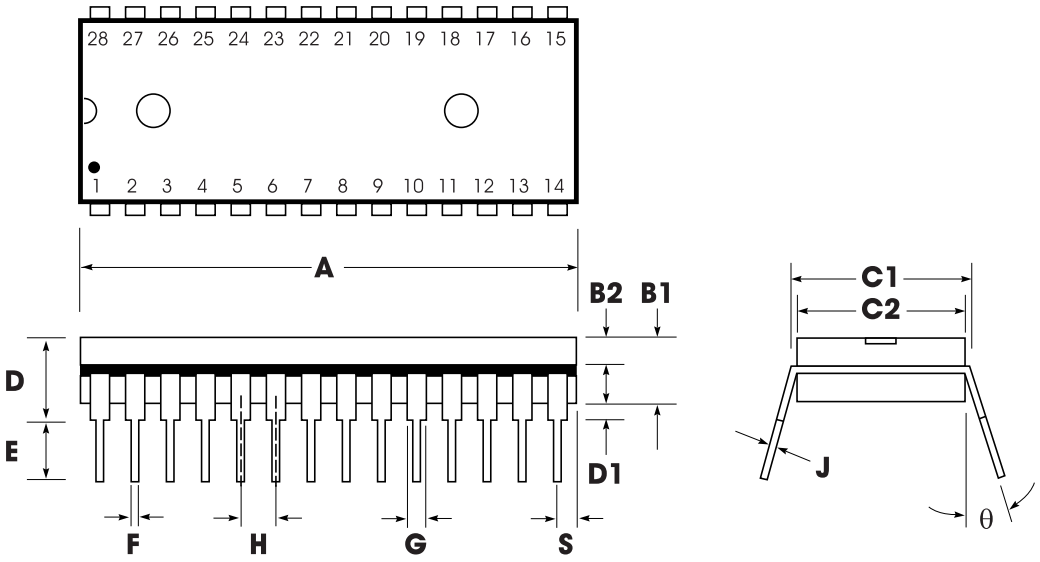


Table 14: Plastic Dual Inline Package (PDIP) (P) Dimensions

	INCHES			MILLIMETERS		
	Min	Nom	Max	Min	Nom	Max
A	1.445	1.450	1.455	36.70	36.83	36.96
B1		0.150			3.81	
B2	0.065	0.070	0.075	1.65	1.78	1.91
C1	0.600		0.625	15.24		15.88
C2	0.530	0.540	0.550	13.46	13.72	13.97
D			0.19			4.83
D1	0.015			0.38		
E	0.125		0.135	3.18		3.43
F	0.015	0.018	0.022	0.38	0.46	0.56
G	0.055	0.060	0.065	1.40	1.52	1.65
H		0.100			2.54	
J	0.008	0.010	0.012	0.20	0.25	0.30
S	0.070	0.075	0.080	1.78	1.91	2.03
q	0°		15°	0°		15°

Figure 14: 28-Lead 0.300-Inch Plastic Small Outline Integrated Circuit (SOIC) (S)

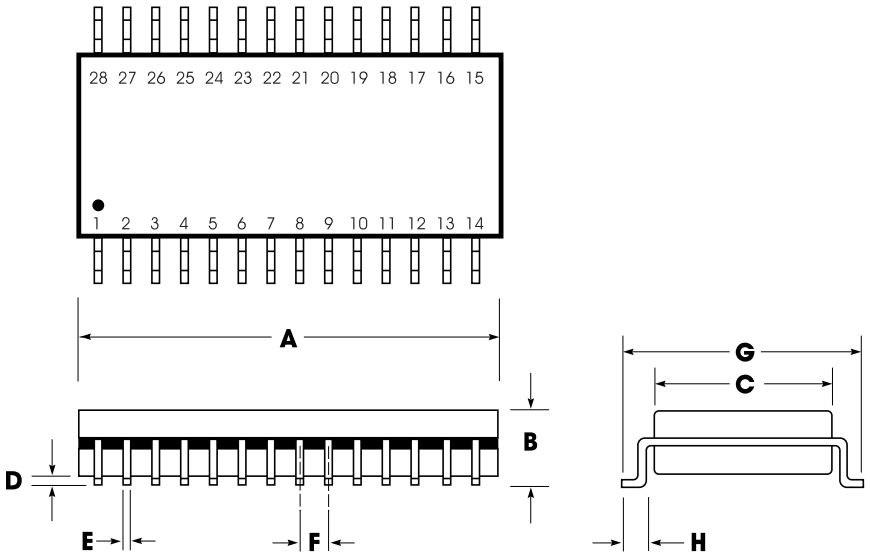


Table 15: Plastic Small Outline Integrated Circuit (SOIC) (S) Dimensions

	INCHES			MILLIMETER		
	Min	Nom	Max	Min	Nom	Max
A	0.701	0.706	0.711	17.81	17.93	18.06
B	0.097	0.101	0.104	2.46	2.56	2.64
C	0.292	0.296	0.299	7.42	7.52	7.59
D	0.005	0.009	0.0115	0.127	0.22	0.29
E	0.014	0.016	0.019	0.35	0.41	0.48
F		0.050			1.27	
G	0.400	0.406	0.410	10.16	10.31	10.41
H	0.024	0.032	0.040	0.61	0.81	1.02

NOTE: *Lead coplanarity to be within 0.004 inches.*

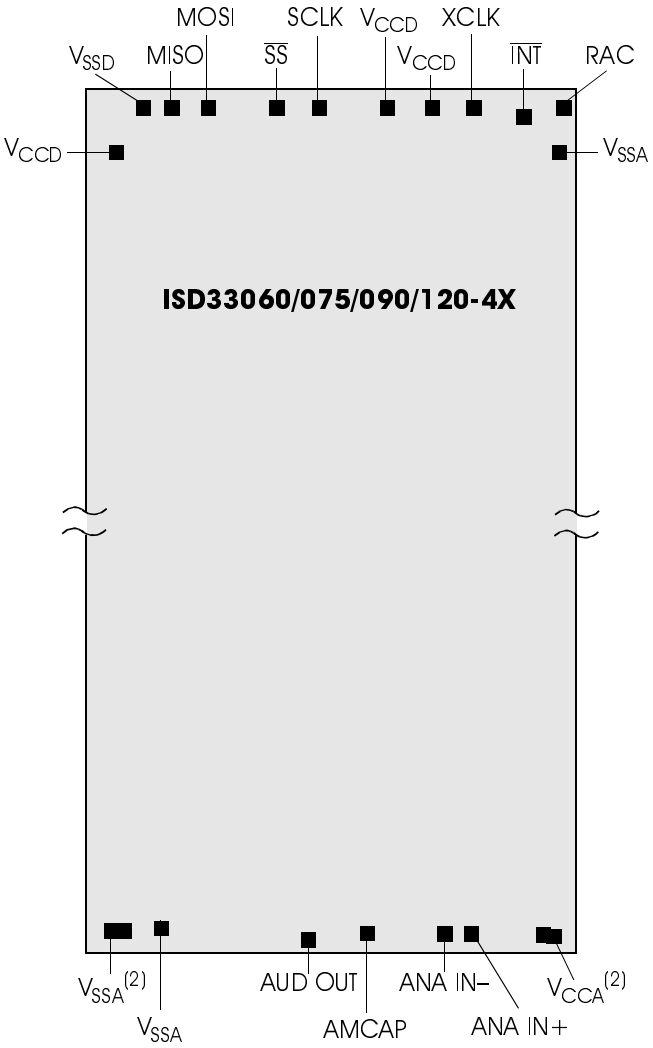
Figure 15: ISD33060/075/090/120-4 Products Bonding Physical Layout(1) (Unpackaged Die)

ISD33060/075/090/120-4X

I. Die Dimensions
X: 188.2 ±1 mils
Y: 243.1 ±1 mils

II. Die Thickness
11.8 ±.4 mils

III. Pad Opening (min)
109 microns (4.3 mils)



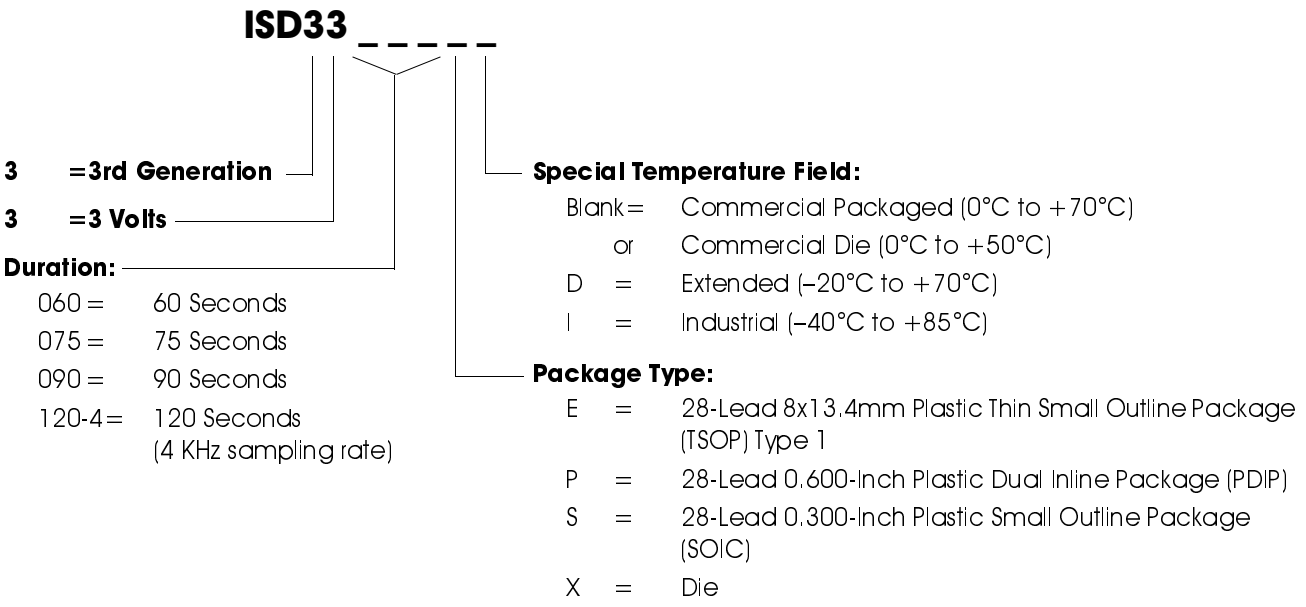
1. *The backside of die is internally connected to V_{SS}. It **MUST NOT** be connected to any other potential or damage may occur.*
2. *Double bond recommended*

Table 16: ISD33060/075/090/120-4 Devices PIN/PAD Designations, with Respect to Die Center (µm)

Pin	Pin Name	X Axis	Y Axis
V_{SSA}	V_{SS} Analog Power Supply	–2122.0	–2866.7
V_{SSA}	V_{SS} Analog Power Supply	–1809.8	–2863.2
AUD OUT	Audio Output	102.6	–2877.0
AMCAP	AutoMute	617.5	–2875.2
ANA IN –	Inverting Analog Input	1684.3	–2849.9
ANA IN +	Noninverting Analog Input	1855.8	–2849.9
V_{CCA}	V_{CC} Analog Power Supply	2115.8	–2856.2
V_{SSA}	V_{SS} Analog Power Supply	2151.2	2356.0
RAC	Row Address Clock	2156.8	2860.3
INT	Interrupt	1846.0	2860.3
XCLK	External Clock Input	1066.7	2871.5
V_{CCD}	V_{CC} Digital Power Supply	839.0	2878.2
V_{CCD}	V_{CC} Digital Power Supply	585.6	2832.3
SCLK	Slave Clock	–68.3	2870.8
SS	Slave Select	–302.5	2870.8
MOSI	Master Out Slave In	–1024.2	2870.8
MISO	Master In Slave Out	–1511.2	2858.6
V_{SSD}	V_{SS} Digital Power Supply	–2002.3	2878.2
V_{SSD}	V_{SS} Digital Power Supply	–2198.3	2692.0

ORDERING INFORMATION

Product Number Descriptor Key



hen ordering ISD33000 Series devices, please refer to the following valid part numbers.

Part Number	Part Number	Part Number	Part Number
ISD33060E	ISD33075E	ISD33090E	ISD33120-4P
ISD33060ED	ISD33075ED	ISD33090ED	ISD33120-4X
ISD33060EI	ISD33075EI	ISD33090EI	
ISD33060P	ISD33075P	ISD33090P	
ISD33060PD	ISD33075PD	ISD33090PD	
ISD33060PI	ISD33075PI	ISD33090PI	
ISD33060S	ISD33075S	ISD33090S	
ISD33060SD	ISD33075SD	ISD33090SD	
ISD33060SI	ISD33075SI	ISD33090SI	
ISD33060X	ISD33075X	ISD33090X	

For the latest product information, access ISD's worldwide website at http://www.isd.com.