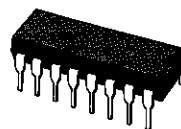
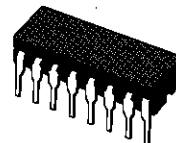


**DUAL 4-CHANNEL OR SINGLE 8-CHANNEL
ANALOG DATA SELECTOR**

- DATA PATHS ARE BIDIRECTIONAL
- 10 MHz OPERATION (typical)
- 3-STATE OUTPUTS
- "ON" RESISTANCE 125 Ω TYPICAL @ 15V
- SUPPLY VOLTAGE RANGE = 3Vdc TO 18Vdc



EY
(Plastic Package)



F
(Ceramic Package)



M1
(Micro Package)



C1
(Chip Carrier)

ORDER CODES :

HCC4529BF
HCF4529BEY

HCF4529BM1
HCF4529BC1

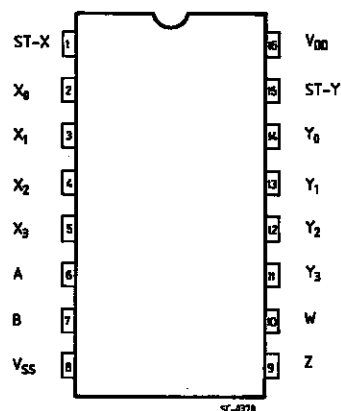
DESCRIPTION

The HCC4529B (extended temperature range) and HCF4529B (intermediate temperature range) are monolithic integrated circuits available in 16-lead dual in line plastic or ceramic package and plastic micropackage.

The HCC/HCF4529B is a DUAL 4-CHANNEL or 8-CHANNEL device. One of the two possible functions can be selected by a proper input coding. For the single 8-bit mode Z and W output must be tied together.

HCC/HCF4529B is suitable for digital as well as analogue applications, including 1 of 4 and 1 of 8 data selector functions. Dual binary to 1 of 4 or single binary to 1 of 8 decoder applications can be implemented because the device allow analogue and bidirectional operation.

PIN CONNECTIONS



HCC/HCF4529B

ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Unit
V_{DD}^*	Supply Voltage: HCC Types	-0.5 to +20	V
	HCF Types	-0.5 to +18	V
V_i	Input Voltage	-0.5 to $V_{DD} + 0.5$	V
I_i	DC Input Current (any one input)	± 10	mA
P_{tot}	Total Power Dissipation (per package)	200	mW
	Dissipation per Output Transistor for T_{op} = Full Package Temperature Range	100	mW
T_{op}	Operating Temperature: HCC Types	-55 to +125	$^{\circ}\text{C}$
	HCF Types	-40 to +85	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-65 to +150	$^{\circ}\text{C}$

Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for external periods may affect device reliability.

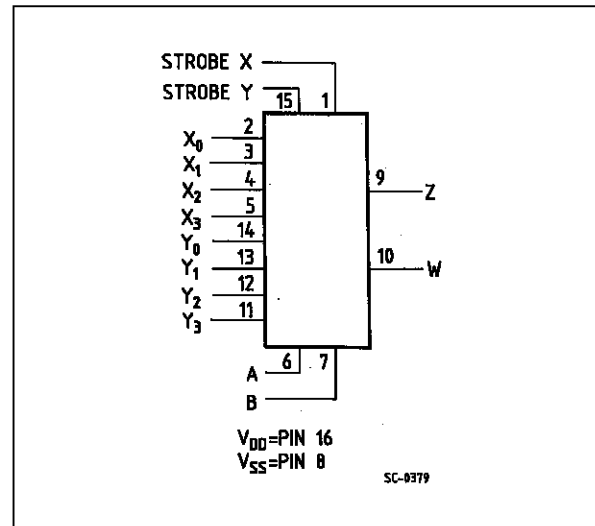
* All voltage values are referred to V_{SS} pin voltage.

TRUTH TABLE

ST _X	ST _Y	B	A	Z	W	MODE
1	1	0	0	X0	Y0	Dual 4-Channel Mode 2 Outputs
1	1	0	1	X1	Y1	
1	1	1	0	X2	Y2	
1	1	1	1	X3	Y3	
1	0	0	0	X0		Single 8-Channel Mode 1 Output (Z and W tied together)
1	0	0	1	X1		
1	0	1	0	X2		
1	0	1	1	X3		
0	1	0	0	Y0		
0	1	0	1	Y1		
0	1	1	0	Y2		
0	1	1	1	Y3		
0	0	X	X	High Impedance		

X = Don't care

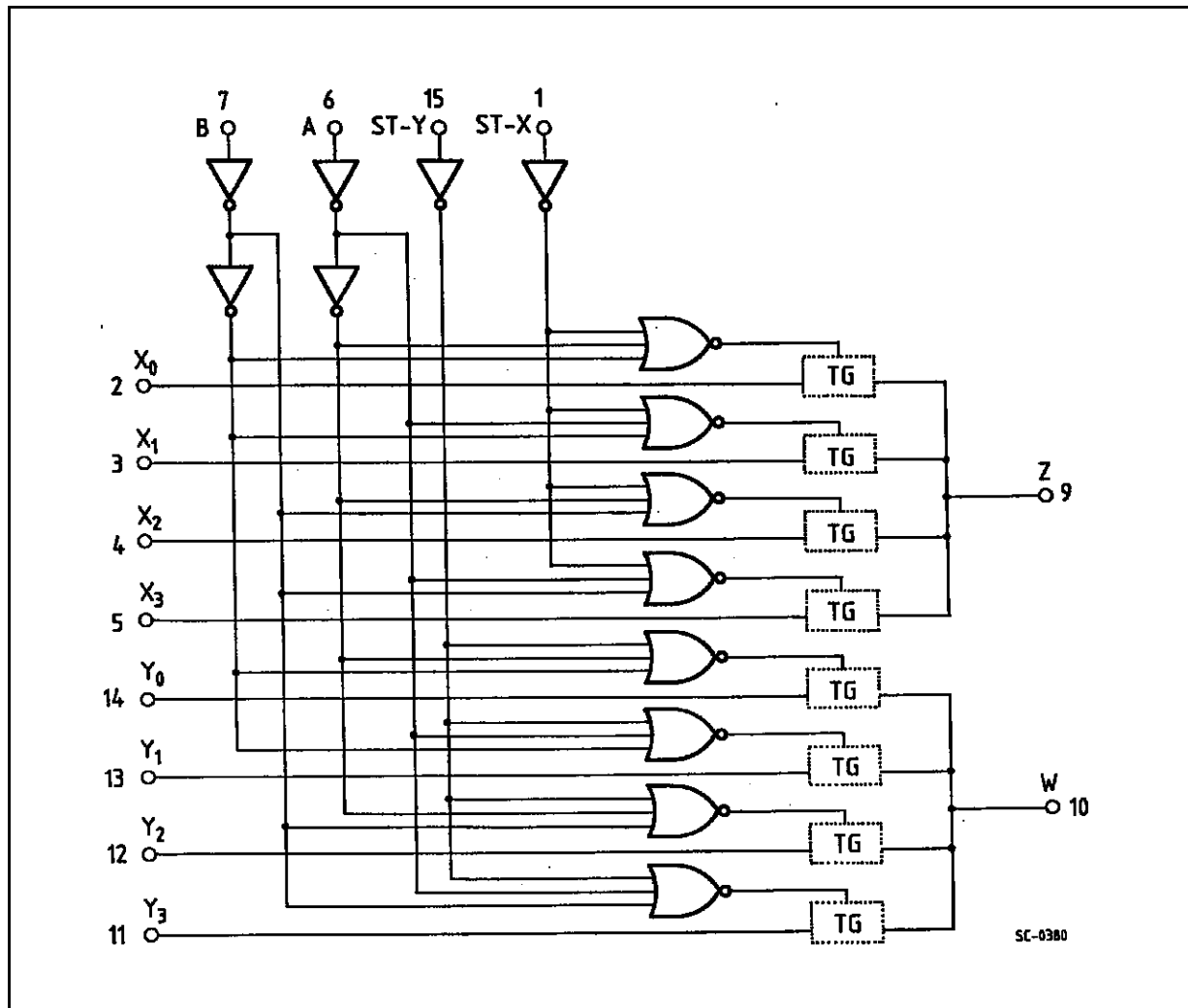
FUNCTIONAL DIAGRAM



RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Value	Unit
V_{DD}	Supply Voltage: HCC Types	3 to 18	V
	HCF Types	3 to 15	V
V_i	Input Voltage	0 to V_{DD}	V
T_{op}	Operating Temperature: HCC Types	-55 to +125	$^{\circ}\text{C}$
	HCF Types	-40 to +85	$^{\circ}\text{C}$

BLOCK DIAGRAM



STATIC ELECTRICAL CHARACTERISTICS (over recommended operating conditions)

Symbol	Parameter		Test Conditions			Value							Unit	
			V _{IS} (V)	V _{SS} (V)	V _{DD} (V)	T _{LOW} *		25 °C			T _{HIGH} *			
						Min.	Max.	Min.	Typ.	Max.	Min.	Max.		
I _L	Quiescent Current	HCC Types			5		5		0.04	5		150	μA	
					10		10		0.04	10		300		
					15		20		0.04	20		600		
					20		100		0.08	100		3000		
		HCF Types			5		20		0.04	20		150		
					10		40		0.04	40		300		
					15		80		0.04	80		600		
SWITCH														
ON	Resistance	HCC Types	0 ≤ V _I ≤ V _{DD}	0	5		880		470	1050		1200	Ω	
					10		310		180	400		580		
					15		220		125	280		400		
		HCC Types	0 ≤ V _I ≤ V _{DD}	0	5		880		470	1050		1200		
					10		330		180	400		520		
					15		230		125	280		360		
ΔON	Resistance ΔR _{ON} (Between any 2 channels)			0	5				10			Ω		
					10				10					
					15				5					
OFF Channel Leakage Current	Any Channel OFF	HCC Types		0	18		100		±0.1	100		1000	nA	
	All Channel OFF (common OUT/IN)	HCC Types		0	18		100		±0.1	100		1000	nA	
	Any Channel OFF	HCC Types		0	15		300		±0.1	300		1000	nA	
	All Channel OFF (common OUT/IN)	HCC Types		0	15		300		±0.1	300		1000	nA	
CONTROL (Address or Inhibit)														
V _{IL}	Input Low Voltage		= V _{DD} thru 1KΩ	R _L =1KΩ to V _{SS} I _{IS} < 2μA (On All OFF Channels)	5		1.5			1.5		1.5	V	
					10		3			3		3		
					15		4			4		4		
V _{IH}	Input High Voltage				5	3.5		3.5			3.5			V
					10	7		7			7			
					15	11		11			11			
I _{IH} , I _{IL}	Input Leakage Current	HCC Types	V _I = 0/18V		18		±0.1		±10 ⁻³	±0.1		±1	μA	
		HCF Types	V _I = 0/15V		15		±0.3		±10 ⁻³	±0.3		±1		
C _I	Input Capacitance		Any Input						5	7.5			pF	

* T_{LOW} = -55 °C for **HCC** device: -40 °C for **HCF** device.

* T_{HIGH} = +125 °C for **HCC** device: +85 °C for **HCF** device.

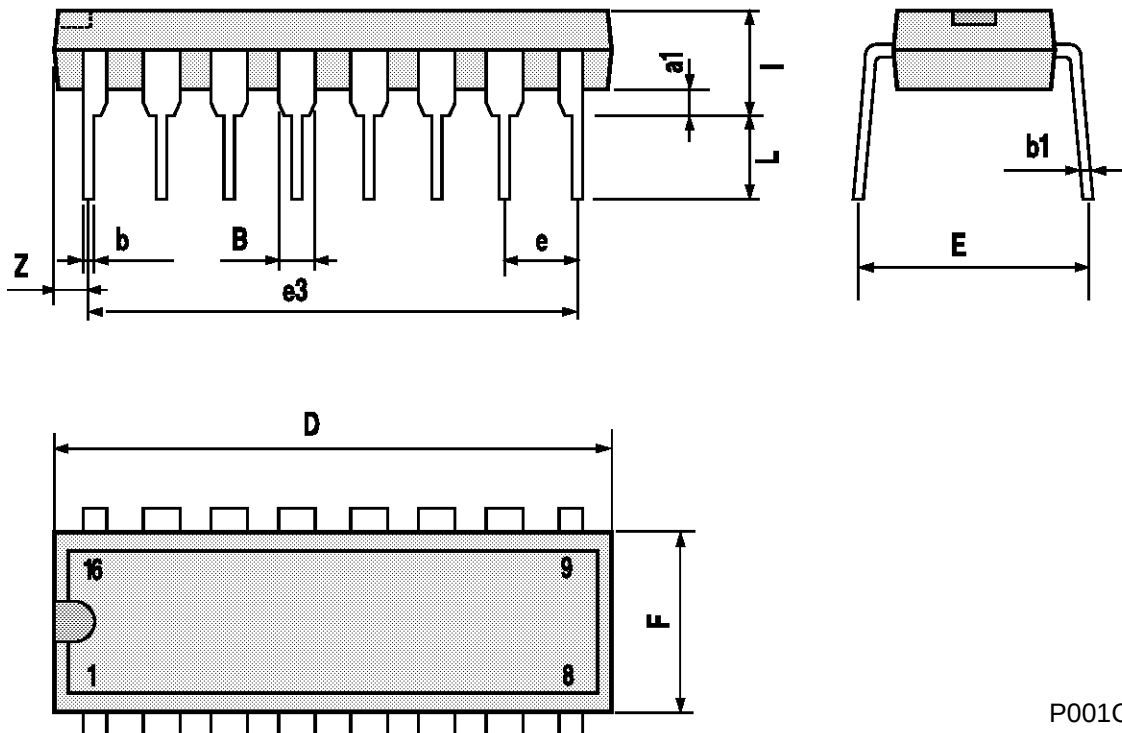
The Noise Margin for both "1" and "0" level is: 1V min. with V_{DD} = 5 V, 2 V min. with V_{DD} = 10 V, 2.5 V min. with V_{DD} = 15 V

DYNAMIC ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, $C_L = 50\text{ pF}$, $R_L = 200\text{ K}\Omega$, typical temperature coefficient for all V_{DD} values is $03\text{ \%}/^{\circ}\text{C}$, all input rise and fall times = 20 ns)

Symbol	Parameter	Test Conditions		Value			Unit
		V_{SS} (V)	V_{DD} (V)	Min.	Typ.	Max.	
t_{PLH} t_{PHL}	V_{in} to V_{out} Propagation Delay Time ($C_L = 50\text{ pF}$, $R_L = 1\text{ K}\Omega$)	0	5		20	40	ns
			10		10	20	
			15		8	15	
t_{PLH} t_{PHL}	Propagation Delay Time, Control to Output, $V_{in} = V_{DD}$ or V_{SS} ($V_{in} \leq 10\text{ Vdc}$, $C_L = 50\text{ pF}$, $R_L = 1\text{ K}\Omega$)	0	5		200	400	ns
			10		80	160	
			15		50	120	
	Crosstalk, Control to Output ($C_L = 50\text{ pF}$, $R_L = 1\text{ K}\Omega$, $R_{out} = 10\text{ K}\Omega$)	0	5		5		mV
			10		5		
			15		5		
	Maximum Control Input Pulse Frequency ($C_L = 50\text{ pF}$, $R_L = 1\text{ K}\Omega$)	0	5		5		MHz
			10		10		
			15		12		
	Sine Wave (Distortion) ($V_{in} = 1.77\text{ Vdc RMS}$ Centred @ 0.0 Vdc , $R_L = 10\text{ K}\Omega$, $f = 1\text{ KHz}$)	-5	5		0.36		%
BW	Bandwidth (-3 dB) ($V_{in} = 1.77\text{ Vdc RMS}$ Centred @ 0.0 Vdc) ($R_L = 1\text{ K}\Omega$) ($R_L = 10\text{ K}\Omega$) ($R_L = 100\text{ K}\Omega$) ($R_L = 1\text{ M}\Omega$)	-5	5		35 28 27 26		MHz
	Feedthrough and Crosstalk $\left(-20 \log_{10} \frac{V_{out}}{V_{in}} = -50\text{ dB} \right)$ ($R_L = 1\text{ K}\Omega$) ($R_L = 10\text{ K}\Omega$) ($R_L = 100\text{ K}\Omega$) ($R_L = 1\text{ M}\Omega$)	-5	5		850 100 12 1.5		KHz

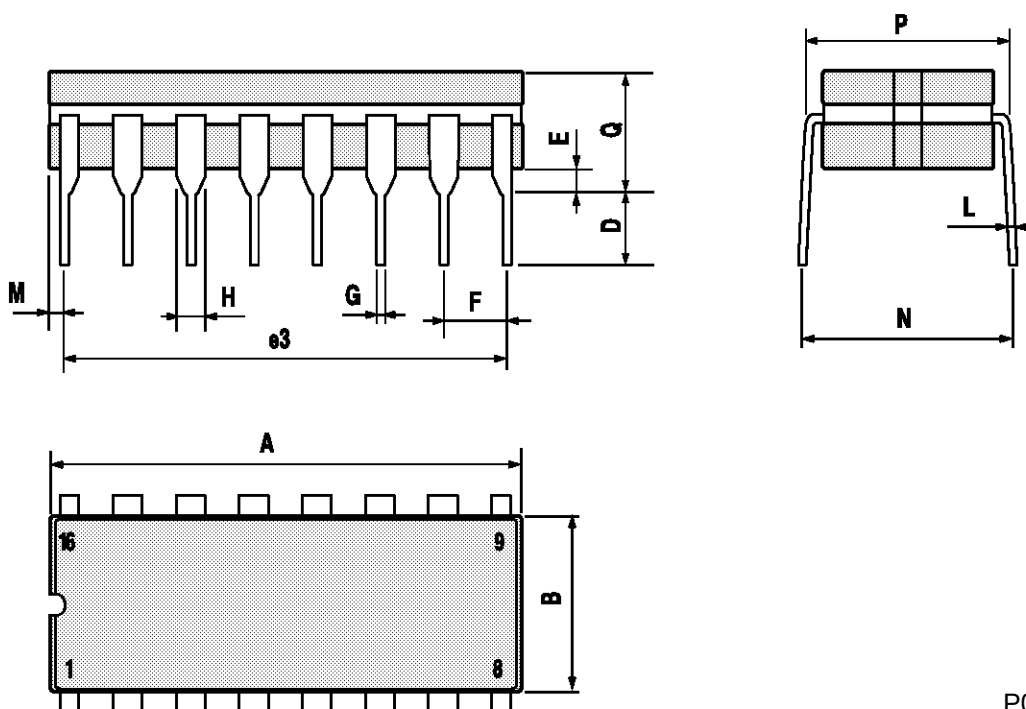
Plastic DIP16 (0.25) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
a1	0.51			0.020		
B	0.77		1.65	0.030		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		17.78			0.700	
F			7.1			0.280
I			5.1			0.201
L		3.3			0.130	
Z			1.27			0.050



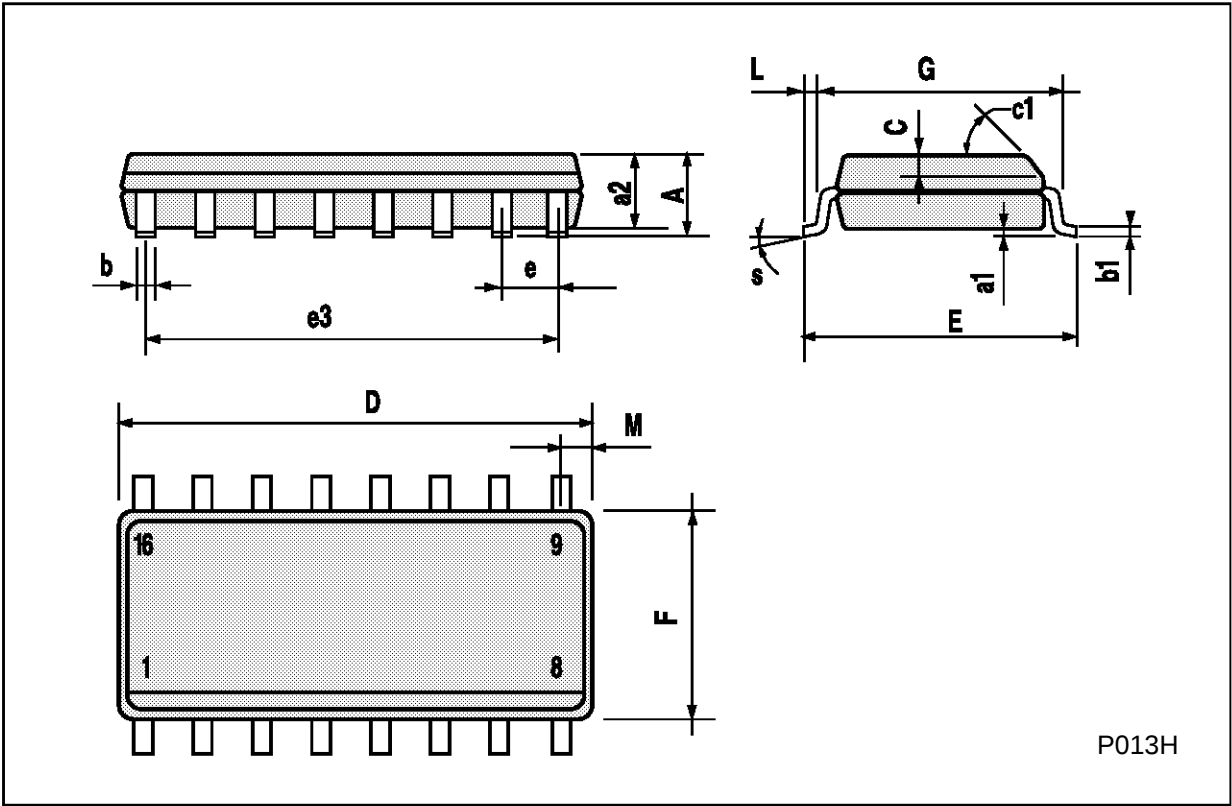
Ceramic DIP16/1 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			20			0.787
B			7			0.276
D		3.3			0.130	
E	0.38			0.015		
e3		17.78			0.700	
F	2.29		2.79	0.090		0.110
G	0.4		0.55	0.016		0.022
H	1.17		1.52	0.046		0.060
L	0.22		0.31	0.009		0.012
M	0.51		1.27	0.020		0.050
N			10.3			0.406
P	7.8		8.05	0.307		0.317
Q			5.08			0.200



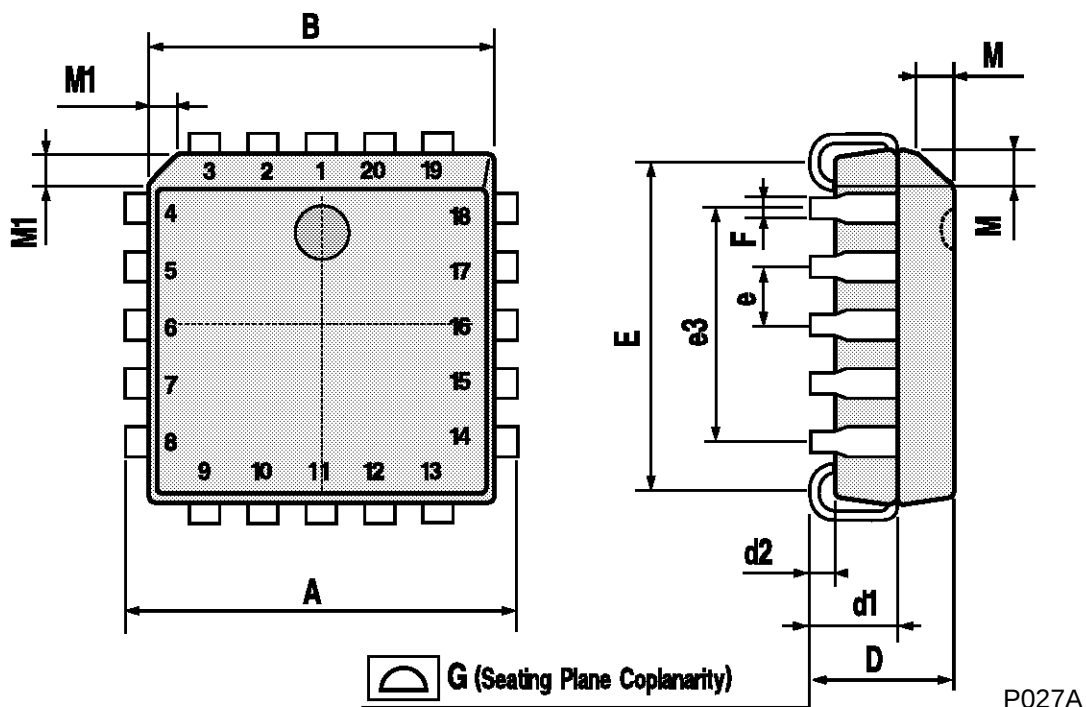
SO16 (Narrow) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.75			0.068
a1	0.1		0.2	0.004		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	9.8		10	0.385		0.393
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		8.89			0.350	
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			0.62			0.024
S	8° (max.)					



PLCC20 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	9.78		10.03	0.385		0.395
B	8.89		9.04	0.350		0.356
D	4.2		4.57	0.165		0.180
d1		2.54			0.100	
d2		0.56			0.022	
E	7.37		8.38	0.290		0.330
e		1.27			0.050	
e3		5.08			0.200	
F		0.38			0.015	
G			0.101			0.004
M		1.27			0.050	
M1		1.14			0.045	



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