

Maximum Ratings

(Above which the useful life may be impaired. For user guidelines, not tested.)

Storage Temperature	-65°C to +150°C
Ambient Temperature with Power Applied	-40°C to +85°C
Supply Voltage to Ground Potential	-0.5V to +7.0V
DC Input Voltage	-0.5V to $V_{CC}+0.5V$
DC Output Current.....	120 mA
Power Dissipation	0.5W

Note:

Stresses greater than those listed under 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 extended periods may affect reliability.

Single 5.0V Supply

DC Electrical Characteristics (Over the Operating Range, $T_A = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$, $V_{CC} = 5V \pm 10\%$, $GND = 0V$)

Parameters	Description	Test Conditions ⁽¹⁾	Min.	Typ. ⁽²⁾	Max.	Units
V_{ANALOG}	Analog Signal Range		0	—	V_{CC}	V
R_{ON}	ON-Resistance	$I_{ON} = 10\text{mA}$ to 30mA	—	6	12	Ω
ΔR_{ON}	Match Between Channels		—	0.4	2	
$R_{FLAT(ON)}$	R_{ON} Flatness	$I_{ON} = 1\text{mA}$, V_{NO} , $V_{NC} = 0V$ to $5V$	—	3	5	
$I_{NO(OFF)}$, $I_{NO(ON)}$	On/Off Leakage Current	V_{NO} , $V_{NC} = 4.5V$	-100	—	100	nA
I_{CC}	Quiescent Supply Current	$V_{CC} = 5.5V$, $V_{IN} = 0V$ or V_{CC}	—	—	1	μA
I_O	Output Current	V_{NO} , V_{NC} or $V_{COM} = 0V$ to $5V$	100	—	—	mA
V_{IH}	Input HIGH Voltage	Guaranteed Logic HIGH Level	2.0	—	—	V
V_{IL}	Input LOW Voltage	Guaranteed Logic LOW Level	-0.5	—	0.8	
I_{IH}	Input HIGH Current	$V_{CC} = \text{Max.}$, $V_{IN} = V_{CC}$	—	—	± 1	μA
I_{IL}	Input LOW Current	$V_{CC} = \text{Max.}$, $V_{IN} = GND$	—	—	± 1	

Dynamic Electrical Characteristics (Over the Operating Range, $T_A = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$, $V_{CC} = 5V \pm 10\%$, $GND = 0V$)

Parameters	Description	Test Conditions ⁽¹⁾	Min.	Typ. ⁽²⁾	Max.	Units
t_{ON}	Turn-on Time	V_{ON} or $V_{NC} = 3.0V$, see Fig. 2	—	10	20	ns
t_{OFF}	Turn-off Time	V_{ON} or $V_{NC} = 3.0V$, see Fig. 2	—	5	10	
X_{TALK}	Crosstalk	$R_L = 100\text{ ohms}$, $f = 30\text{ MHz}$, see Fig. 4	—	-70	—	dB
$C_{(OFF)}$	NC or NO Capacitance	$f = 1\text{ kHz}$	—	13	—	pF
O_{IRR}	Off Isolation	$R_L = 100\text{ ohms}$, $f = 30\text{ MHz}$, see Fig. 5	—	-55	—	dB
BW	Bandwidth -3dB	$R_L = 100\text{ ohms}$, see Fig. 3	—	137	—	MHz
D	Distortion $DR_{ON/RL}$	$R_L = 100\text{ ohms}$	—	2	—	%

Note:

- For Max. or Min. conditions, use appropriate value specified under Electrical Characteristics for applicable device type.
- Guaranteed by design.

Single 3.3V Supply

DC Electrical Characteristics (Over the Operating Range, $T_A = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$, $V_{CC} = 3.3\text{V} \pm 10\%$, $\text{GND} = 0\text{V}$)

Parameters	Description	Test Conditions ⁽¹⁾	Min.	Typ. ⁽²⁾	Max.	Units
V_{ANALOG}	Analog Signal Range		0	—	V_{CC}	V
R_{ON}	ON-Resistance	$I_{\text{ON}} = 10\text{mA}$ to 30mA	—	15	22	Ω
ΔR_{ON}	Match Between Channels		—	1	3	
$R_{\text{FLAT(ON)}}$	R_{ON} Flatness	$I_{\text{ON}} = 1\text{mA}$, V_{NO} , $V_{\text{NC}} = 0\text{V}$ to 5V	—	7	12	
$I_{\text{NO(OFF)}}$, $I_{\text{NO(ON)}}$	On/Off Leakage Current	V_{NO} , $V_{\text{NC}} = 3.0\text{V}$	-100	—	100	nA
$I_{\text{COM(ON)}}$	On Leakage Current	V_{NO} , $V_{\text{NC}} = 3.0\text{V}$	-100	—	100	μA
I_{O}	Output Current	V_{NO} , V_{NC} or $V_{\text{COM}} = 0\text{V}$	80	—	—	mA
V_{IH}	Input HIGH Voltage	Guaranteed Logic HIGH Level	2.0	—	—	V
V_{IL}	Input LOW Voltage	Guaranteed Logic LOW Level	-0.5	—	0.8	
I_{IH}	Input HIGH Current	$V_{CC} = \text{Max.}$, $V_{\text{IN}} = V_{CC}$	—	—	± 1	μA
I_{IL}	Input LOW Current	$V_{CC} = \text{Max.}$, $V_{\text{IN}} = \text{GND}$	—	—	± 1	

Dynamic Electrical Characteristics (Over the Operating Range, $T_A = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$, $V_{CC} = 3.3\text{V} \pm 10\%$, $\text{GND} = 0\text{V}$)

Parameters	Description	Test Conditions ⁽¹⁾	Min.	Typ. ⁽²⁾	Max.	Units
t_{ON}	Turn-on Time	V_{ON} or $V_{\text{NC}} = 1.5\text{V}$, see Fig. 2	—	28	40	ns
t_{OFF}	Turn-off Time	V_{ON} or $V_{\text{NC}} = 1.5\text{V}$, see Fig. 2	—	4	20	
X_{TALK}	Crosstalk	$R_L = 50\text{ ohms}$, $f = 1\text{ MHz}$, see Fig. 4	—	-75	—	dB
$C_{\text{(OFF)}}$	NC or NO Capacitance	$f = 1\text{ kHz}$	—	15	—	pF
$C_{\text{COM(OFF)}}$	COM Off Capacitance	$f = 1\text{ kHz}$	—	30	—	
O_{IRR}	Off Isolation	$R_L = 50\text{ ohms}$, $f = 1\text{ MHz}$, see Fig. 5	—	-75	—	dB
BW	Bandwidth -3dB	$R_L = 50\text{ ohms}$, see Fig. 3	—	110	—	MHz
D	Distortion	$R_L = 100\text{ ohms}$	—	4	—	%

Dynamic Electrical Characteristics (Over the Operating Range, $T_A = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$, $V_{CC} = 3.3\text{V} \pm 10\%$, $\text{GND} = 0\text{V}$)

Parameters	Description	Test Conditions ⁽¹⁾	Min.	Typ. ⁽²⁾	Max.	Units
I_{CC}	Quiescent Positive Power Supply Current	$V_{CC} = 3.6\text{V}$, $V_{\text{IN}} = 0\text{V}$ or V_{CC} All Channels ON or OFF	—	—	1	μA

Note:

- For Max. or Min. conditions, use appropriate value specified under Electrical Characteristics for applicable device type.
- Guaranteed by design.

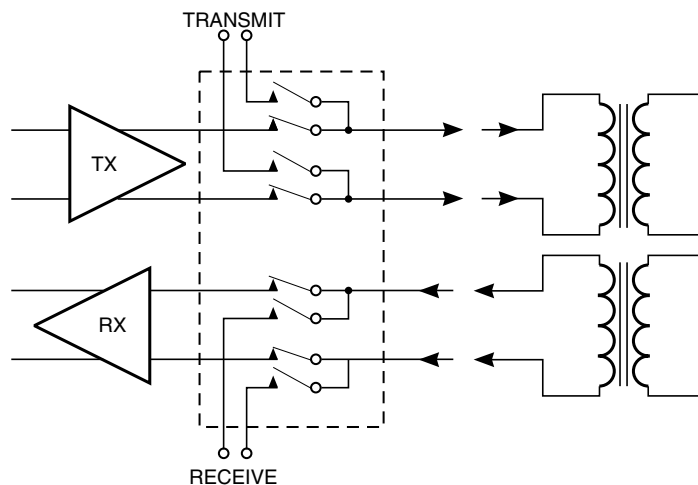


Figure 1a. Full Duplex Transceiver

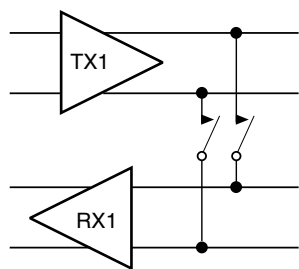


Figure 1b. Loop Back

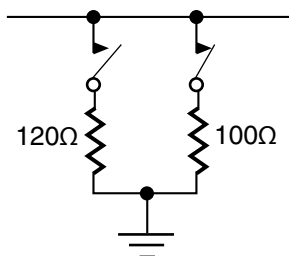


Figure 1c. Line Termination

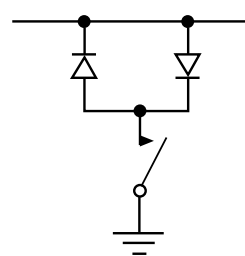


Figure 1d. Line Clamp

Test Circuits

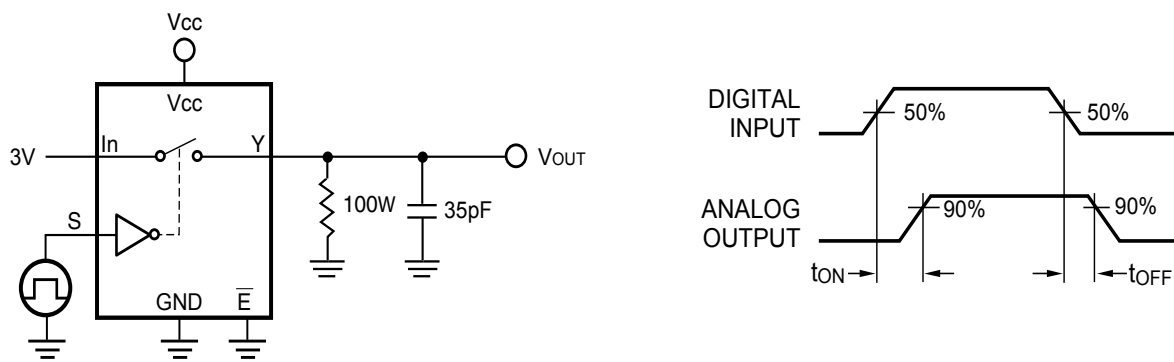


Figure 2. Switching Time

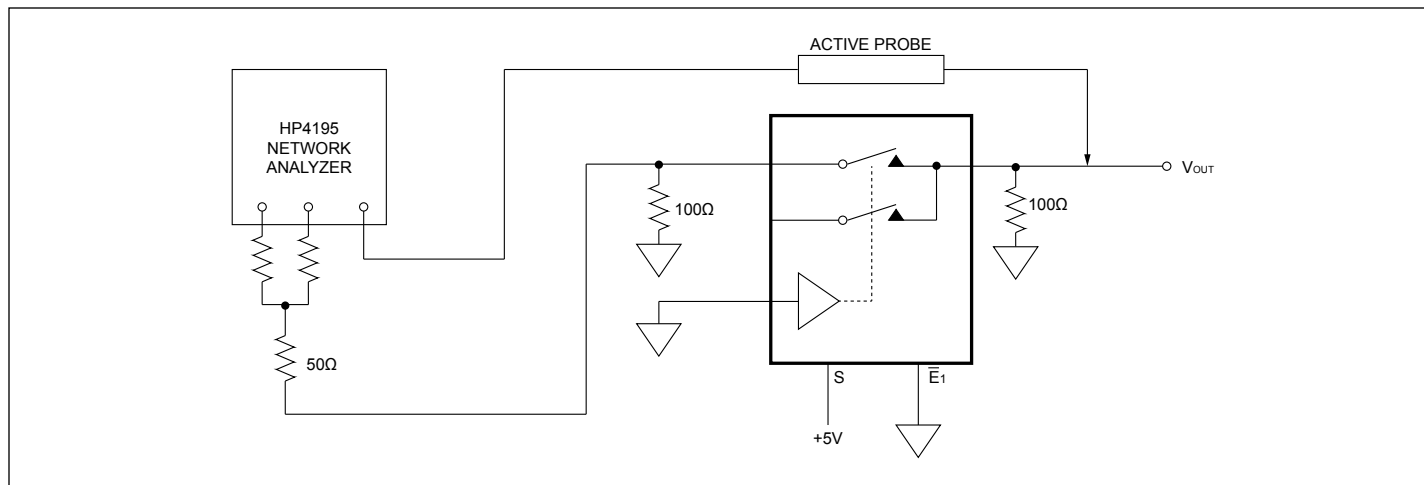


Figure 3. Bandwidth

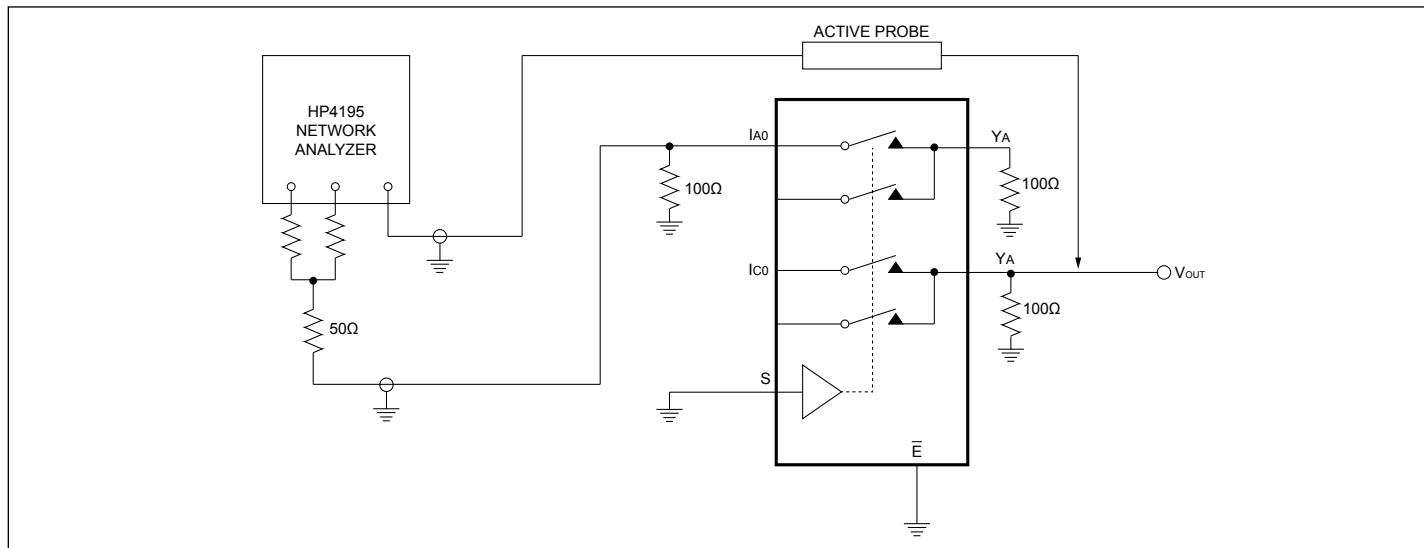


Figure 4. Crosstalk

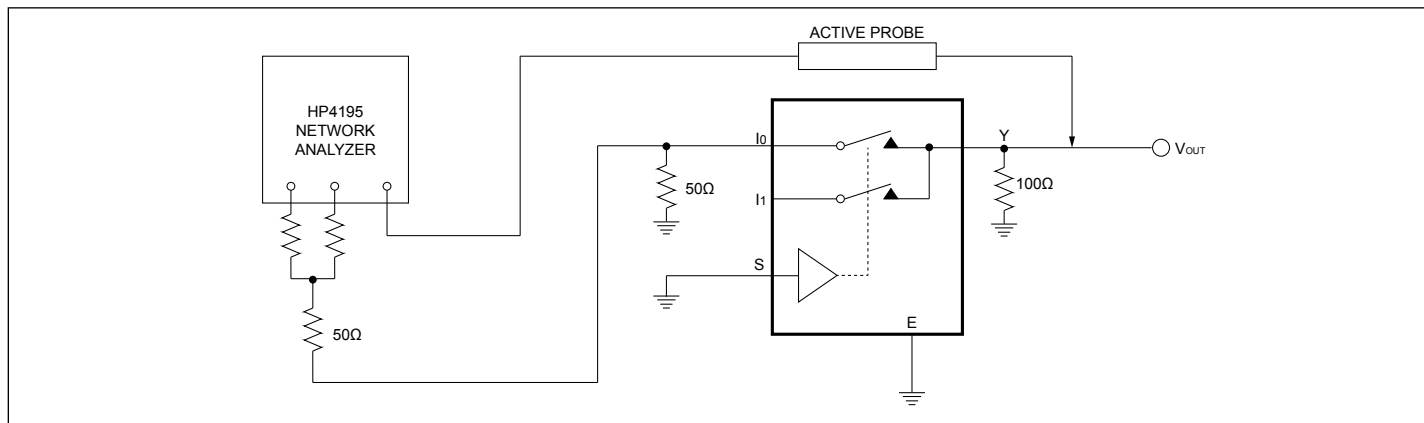


Figure 5. Off Isolation

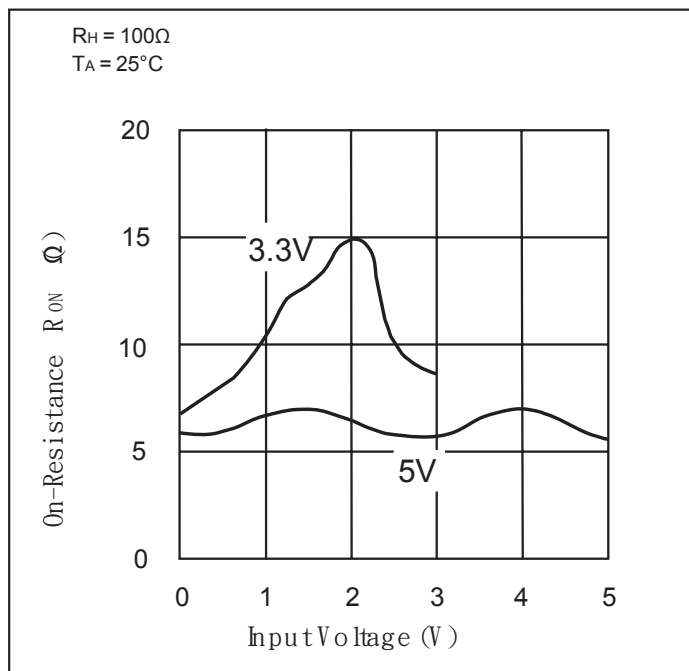


Figure 6. On-Resistance vs. Input Voltage

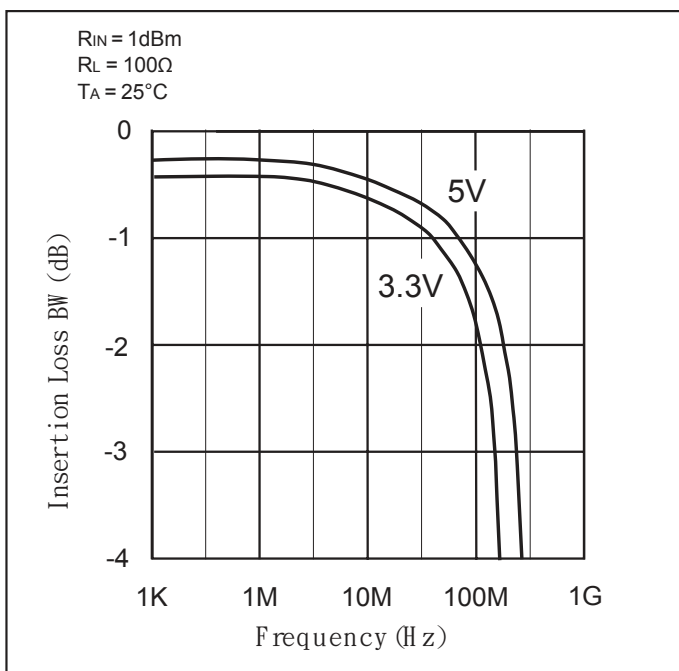


Figure 7. Insertion Loss vs. Frequency

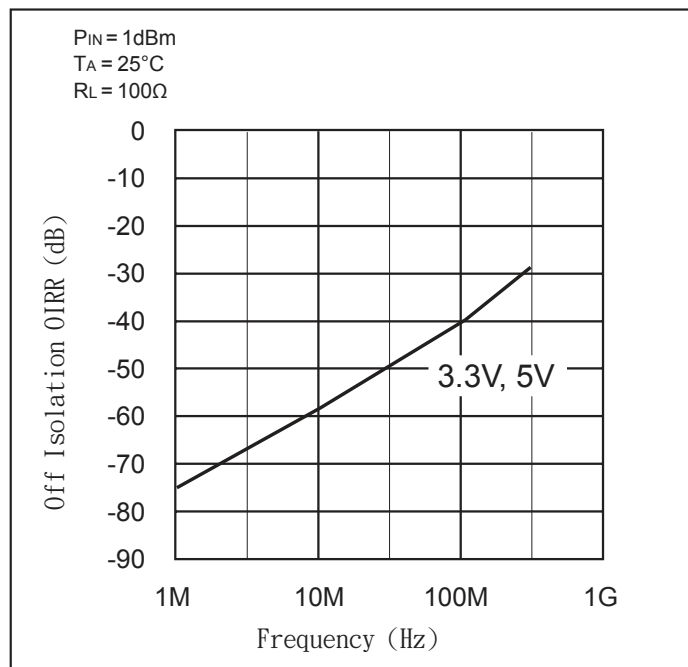


Figure 8. Off Isolation vs. Frequency

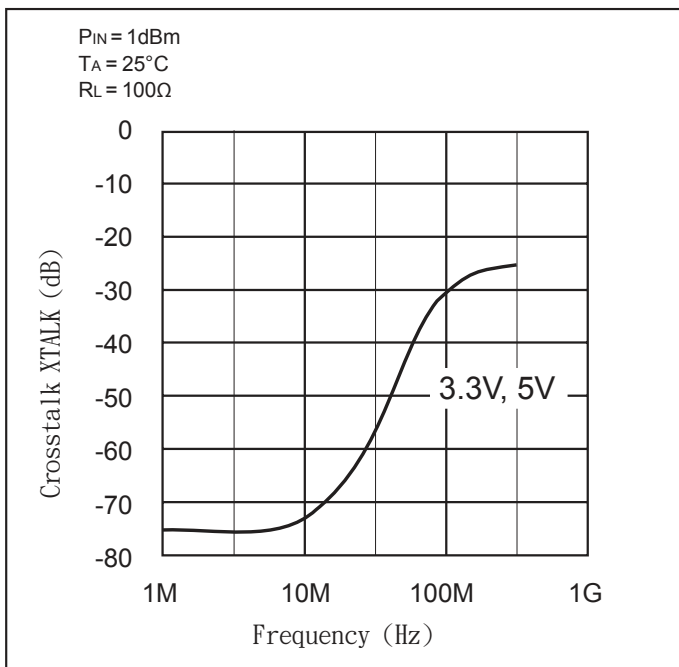
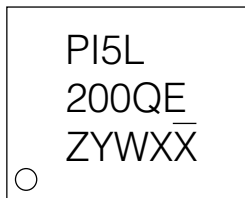


Figure 9. Crosstalk vs. Frequency

PI5L200

Part Marking

Q Package



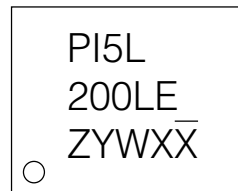
Z: Die Rev Code
Y: Year
W: Workweek
1st X: Assembly Code
2nd X: Fab Code

W Package



B: Port Code
Z: Die Rev
YY: Year
WW: Workweek
1st X: Assembly Code
2nd X: Fab Code

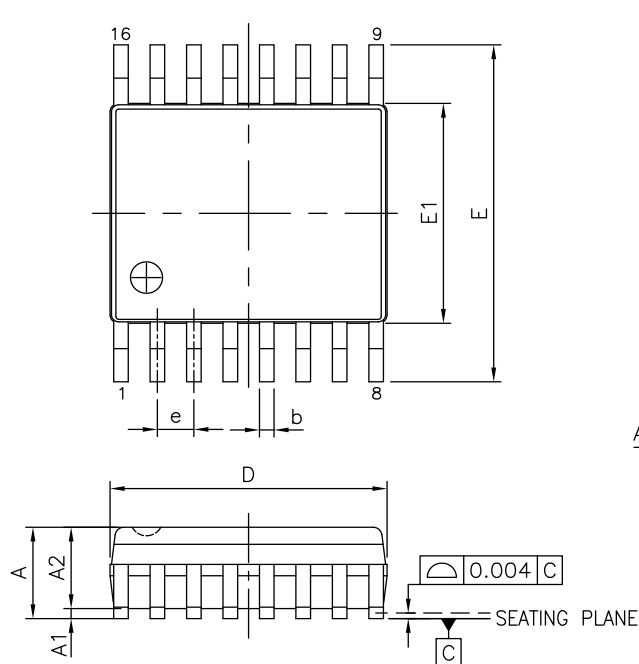
L Package



Z: Die Rev
Y: Year
W: Workweek
1st X: Assembly Code
2nd X: Fab Code

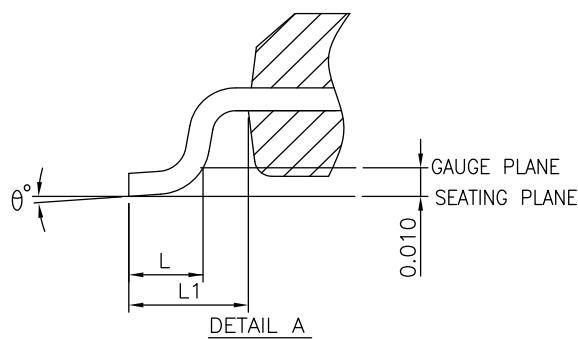
PI5L200

Packaging Mechanical: 16-QSOP (Q)



SYMBOLS	MIN.	NOM.	MAX.
A	—	—	0.069
A1	0.004	—	0.0098
A2	0.049	—	—
b	0.008	—	0.012
c	0.004	—	0.010
D	0.189	0.193	0.197
E1	0.150	0.154	0.158
E	0.228	0.236	0.244
L	0.016	—	0.050
L1	0.041 REF.		
e	0.025 BSC.		
θ°	0	—	8

UNIT : INCH



NOTES:
1. ALL DIMENSIONS IN INCH. ANGLES IN DEGREES.
2. JEDEC MO-137E
3. DIMENSIONS DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



DATE: 04/08/16

DESCRIPTION: 16-Pin, 150mIl Wide QSOP

PACKAGE CODE: Q (Q16)

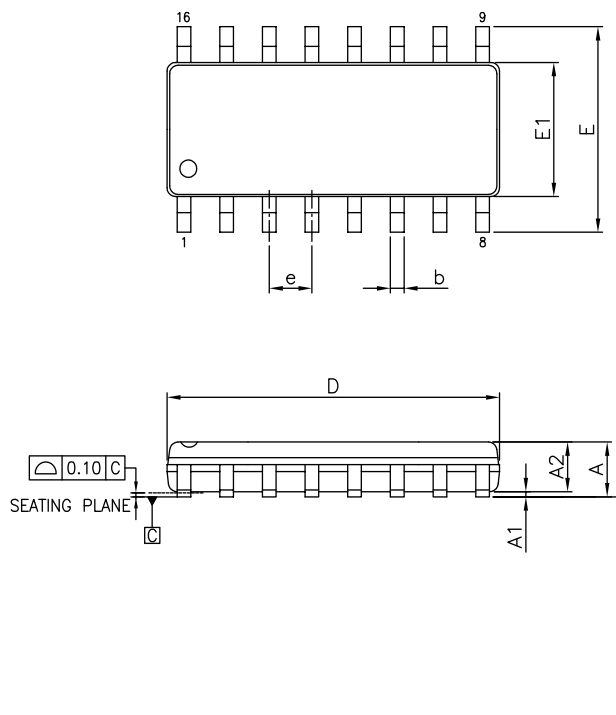
DOCUMENT CONTROL #: PD-1201

REVISION: H

16-0056

PI5L200

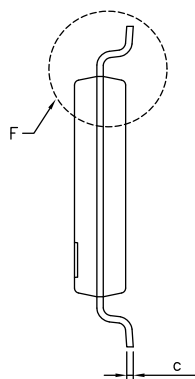
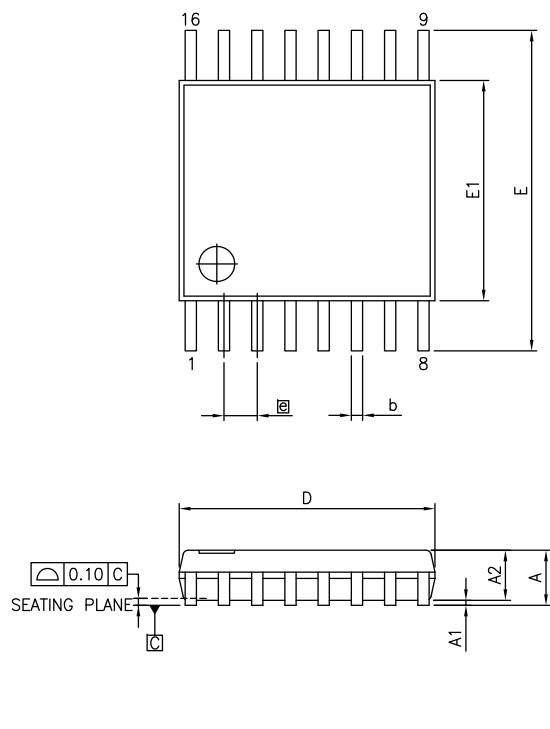
Packaging Mechanical: 16-SOIC (W)



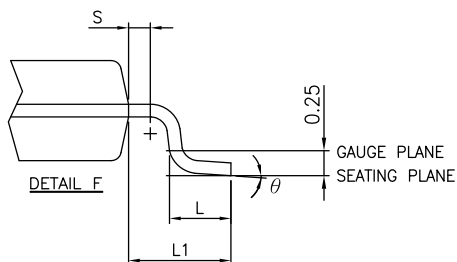
SYMBOLS	MIN.	NOM.	MAX.
A	—	—	1.75
A1	0.10	—	0.25
A2	1.00	—	—
b	0.31	—	0.51
c	0.10	—	0.25
D	9.80	9.90	10.0
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.27 BSC		
L	0.40	—	1.27
h	0.15	—	0.50
θ°	0	—	8

NOTES:

1. ALL DIMENSIONS IN MILLIMETERS. ANGLES IN DEGREES.
2. JEDEC OUTLINE : MS-012 AC
3. DIMENSIONS DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
4. THE MIN. DIMENSION OF A2 AND h ARE OUT OF JEDEC SPEC.

PI5L200
Packaging Mechanical: 16-TSSOP (L)


SYMBOLS	MIN.	NOM.	MAX.
A	—	—	1.20
A1	0.05	—	0.15
A2	0.80	1.00	1.05
b	0.19	—	0.30
c	0.09	—	0.20
D	4.90	5.00	5.10
E1	4.30	4.40	4.50
E	6.20	6.40	6.60
e	0.65 BSC		
L1	1.00 REF		
L	0.45	0.60	0.75
S	0.20	—	—
θ	0°	—	8°


NOTES:

1. ALL DIMENSIONS IN MILLIMETERS. ANGLES IN DEGREES.
2. JEDEC MO-153F
3. DIMENSIONS DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

16-0061



DATE: 03/24/16

DESCRIPTION: 16-Pin, 173mil Wide TSSOP
PACKAGE CODE: L (L16)
DOCUMENT CONTROL #: PD-1310
REVISION: G
For latest package info.

 please check: <http://www.diodes.com/design/support/packaging/pericom-packaging/packaging-mechanicals-and-thermal-characteristics/>
Ordering Information

Ordering Code	Packaging Code	Package Description
PI5L200QEX	Q	16-pin, 150mil Wide (QSOP)
PI5L200WEX	W	16-pin, 150mil Wide (SOIC)
PI5L200LEX	L	16-pin, 173mil Wide (TSSOP)

Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <http://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free. Thermal characteristics can be found on the company web site at www.diodes.com/design/support/packaging/
3. E = Pb-free and Green
4. X suffix = Tape/Reel

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