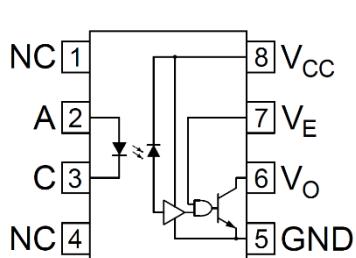


Product Summary

Baud Rate (bps)	Signal Level	Isolation Voltage (VRMS)	Operating Temperature (°C)
10M	LSTTL TTL CMOS 5V	5,000	-40 to +85



Truth Table		
LED	V _E Input	V _O Output
ON	H	L
OFF	H	H
ON	L	H
OFF	L	H
ON	NC	L
OFF	NC	H

Features

- High Speed 10Mbps typical
- High Input-Output Isolation Voltage (V_{ISO} = 5,000VRMS)
- LSTTL/ TTL and 5V CMOS Compatible
- Safety Approval
UL1577 (No.E536221)
CQC 4943.1-2022 (No.CQC24001432528)
VDE EN IEC 60747-5-5 (No.40058801)
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative.**
<https://www.diodes.com/quality/product-definitions/>

Mechanical Data

- Package: PDIP-8, MDIP-8, SL-8 with 2.54mm Pin Pitch
- Package Material: Molded Plastic, "Green" Mold Compound. UL Flammability Classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin-Plated Leads, Solderable per MIL-STD-202, Method 208 (E3)
- Polarity Indicator: Dots for PIN 1 Identification
- Weight: 0.54 grams (Approximate)

PDIP-8 (Type DY)



MDIP-8



SL-8



Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
DPC6137D-TU	PDIP-8 (Type DY)	45pcs	Tube
DPC6137W-TU	MDIP-8	45pcs	Tube
DPC6137D-TU-V	PDIP-8 (Type DY) (VDE Parts)	45pcs	Tube
DPC6137W-TU-V	MDIP-8 (VDE Parts)	45pcs	Tube
DPC6137S-TR	SL-8	1,000pcs	Reel
DPC6137S-TR-V	SL-8 (VDE Parts)	1,000pcs	Reel

Notes:

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



DII = Manufacturer's Code Marking
6137 = Product Type Marking Code
V = VDE Safety Mark Option
Y = Last Digit of Year (ex: 5 = 2025)
WW = Week Code (01 to 53)

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Emitter (LED)	Forward Current	I_F	25	mA
	Reverse Voltage	V_R	5	V
	Input Power Dissipation	P_I	100	mW
	Peak Forward Current ($<1\mu\text{s}$ Pulse Width, 300pps)	I_{FP}	1	A
Detector	Supply Voltage	V_{CC}	7	V
	Output Voltage	V_O	7	V
	Enable Input Voltage	V_E	$V_{CC} + 0.5$	V
	Output Collector Current	I_O	50	mA
	Enable Input Current	I_E	5	mA
	Output Power Dissipation	P_O	85	mW
Total Power Dissipation		P_{TOT}	200	mW
Isolation Voltage (AC For 1 Minute, R.H. = 40% to 60%)		V_{ISO}	5000	V_{RMS}
Operating Temperature		T_{OPR}	-40 to +85	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55 to +125	$^\circ\text{C}$
Soldering Temperature (For 10 Seconds)		T_{SOL}	+260	$^\circ\text{C}$

Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
Operating Temperature	T_{OPR}	-40	+85	$^\circ\text{C}$
Supply Voltage	V_{CC}	4.5	5.5	V
Low Level Input Current	I_{FL}	0	0.25	mA
High Level Input Current	I_{FH}	5	15	mA
Low Level Enable Voltage	V_{EL}	0	0.8	V
High Level Enable Voltage	V_{EH}	2	V_{CC}	V
Output Pull Up Resistor	R_L	330	4000	Ω
Fanout ($R_L = 1\text{k}\Omega$)	N	—	5	TTL Loads

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, $V_{CC} = 5.5\text{V}$, unless otherwise specified.)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit	
Emitter (LED)	Forward Voltage	$I_F = 10\text{mA}$	V_F	—	1.4	1.6	V
	Reverse Current	$V_R = 5\text{V}$	I_R	—	—	10	μA
	Terminal Capacitance	C_T	—	30	—	pF	
Detector	High Level Supply Current	$V_E = 0.5\text{V}$, $I_F = 0\text{mA}$	I_{CCH}	—	7	10	mA
	Low Level Supply Current	$V_E = 0.5\text{V}$, $I_F = 10\text{mA}$	I_{CCL}	—	9	13	mA
	Input Threshold Current	$V_{CC} = 5.5\text{V}$, $V_O = 0.6\text{V}$, I_{OL} (Sinking) = 13mA	I_{TH}	—	2.0	5.0	mA
	High Level Enable Current	$V_E = 2\text{V}$	I_{EH}	—	-0.7	-1.6	mA
	Low Level Enable Current	$V_E = 0.5\text{V}$	I_{EL}	—	-0.9	-1.6	mA
	High Level Enable Voltage	$V_{CC} = 5\text{V}$	V_{EH}	2	—	—	V
	Low Level Enable Voltage		V_{EL}	—	—	0.8	V
	High Level Output Current	$V_E = 0.5\text{V}$, $I_F = 250\mu\text{A}$	I_{OH}	—	5.5	100	μA
	Low Level Output Voltage	$I_{OL} = 13\text{mA}$, $I_F = 5\text{mA}$	V_{OL}	—	0.35	0.6	V

Switching Characteristics (@ $T_A = +25^\circ\text{C}$, $V_{CC} = 5\text{V}$, unless otherwise specified.)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Propagation Delay Time to High Output Level	$R_L = 350\Omega$, $C_L = 15\text{pF}$	t_{PLH}	25	50	75	ns
Propagation Delay Time to Low Output Level		t_{PHL}	25	50	75	ns
Pulse Width Distortion		$ t_{PHL} - t_{PLH} $	—	5	35	ns
Output Rise Time (10% to 90%)		t_R	—	30	—	ns
Output Fall Time (90% to 10%)		t_F	—	12	—	ns
Propagation Delay Time of Enable from V_{EH} to V_{EL}		t_{ELH}	—	30	—	ns
Propagation Delay Time of Enable from V_{EL} to V_{EH}	$R_L = 350\Omega$, $C_L = 15\text{pF}$ $V_{EL} = 0\text{V}$, $V_{EH} = 3\text{V}$	t_{EHL}	—	20	—	ns

Common Mode Transient Immunity (@ $T_A = +25^\circ\text{C}$, $V_{CC} = 5\text{V}$, unless otherwise specified.)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Logic High Common Mode Transient Immunity	$V_{CC} = 5\text{V}$, $I_F = 0\text{mA}$ $ V_{CM} = 10\text{V}$, $R_L = 350\Omega$	$ CM_H $	1000	—	—	$\text{V}/\mu\text{s}$
Logic Low Common Mode Transient Immunity	$V_{CC} = 5\text{V}$, $I_F = 7.5\text{mA}$ $ V_{CM} = 10\text{V}$, $R_L = 350\Omega$	$ CM_L $	1000	—	—	$\text{V}/\mu\text{s}$

Note: Guaranteed by design.

Characteristics Curves

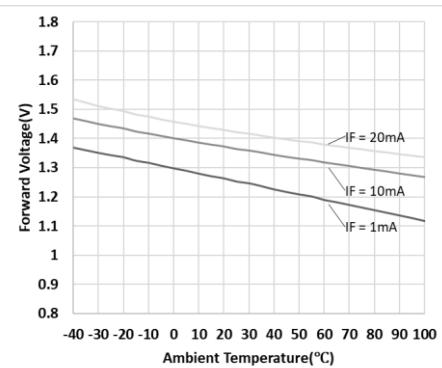


Fig.1 Forward Voltage vs. Ambient Temperature

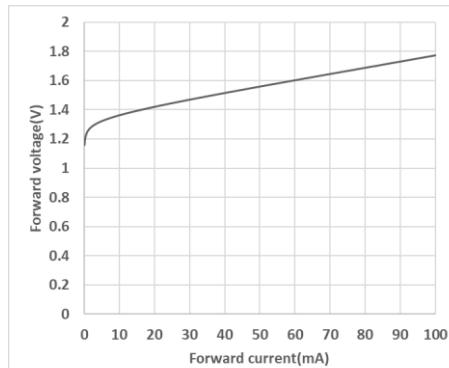


Fig.2 Forward Voltage vs. Forward Current

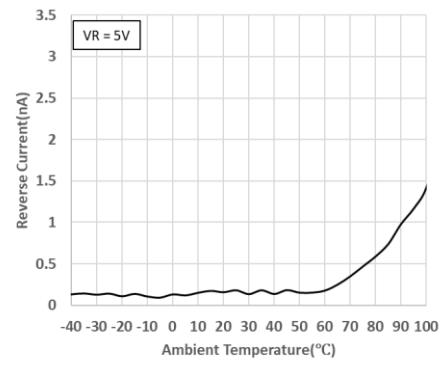


Fig.3 Reverse Current vs. Ambient Temperature

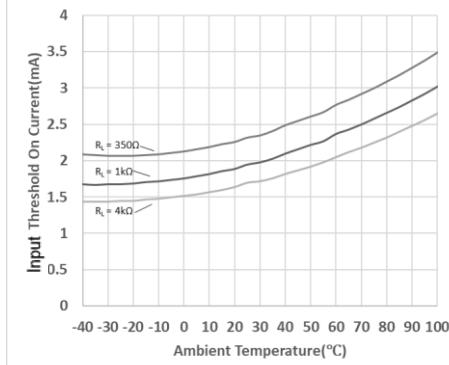


Fig.4 Input Threshold On Current vs. Ambient Temperature

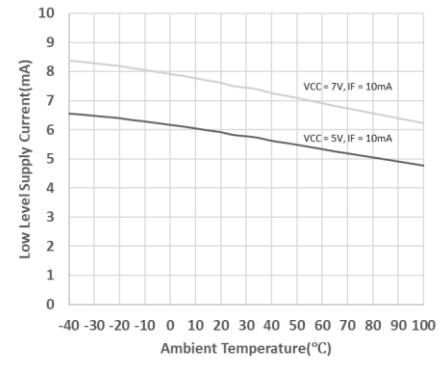


Fig.5 Low Level Supply Current vs. Ambient Temperature

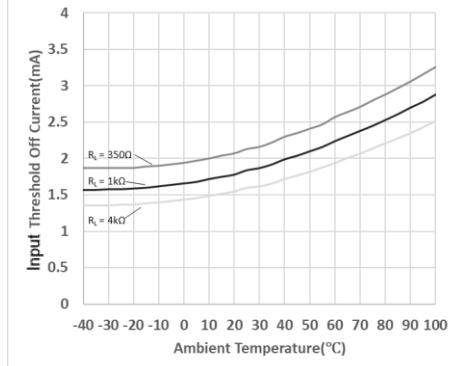


Fig.6 Input Threshold Off Current vs. Ambient Temperature

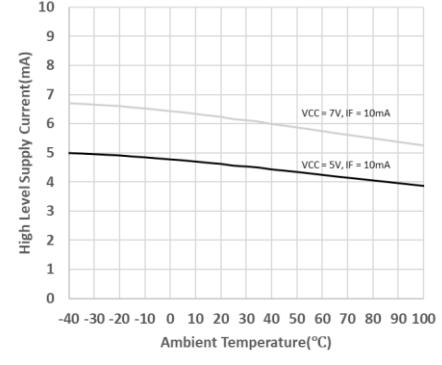


Fig.7 High Level Supply Current vs. Ambient Temperature

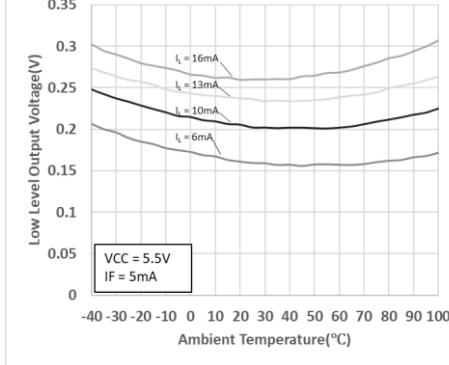


Fig.8 Low Level Output Voltage vs. Ambient Temperature

Characteristics Curves (continued)

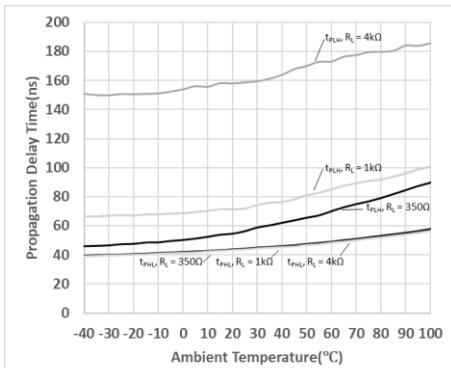


Fig.9 Propagation Delay vs. Ambient Temperature

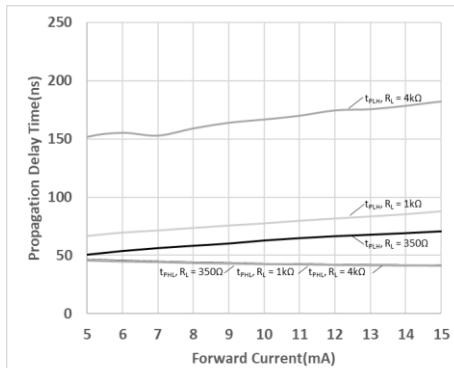


Fig.10 Propagation Delay vs. Forward Current

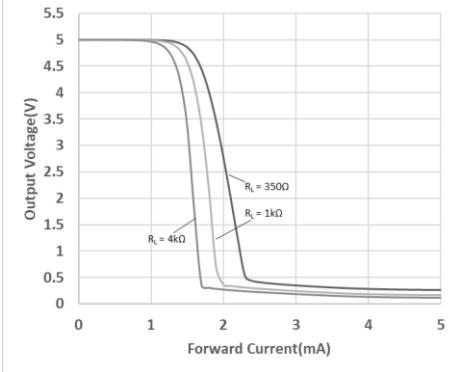


Fig.11 Output Voltage vs. Forward Input Current

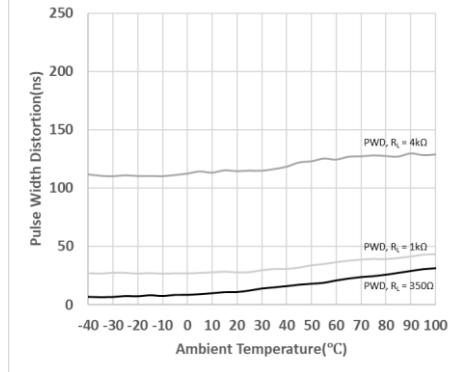


Fig.12 Pulse Width Distortion vs. Ambient Temperature

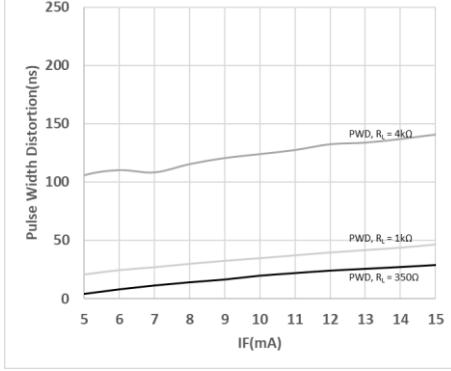


Fig.13 Pulse Width Distortion vs. Forward Current

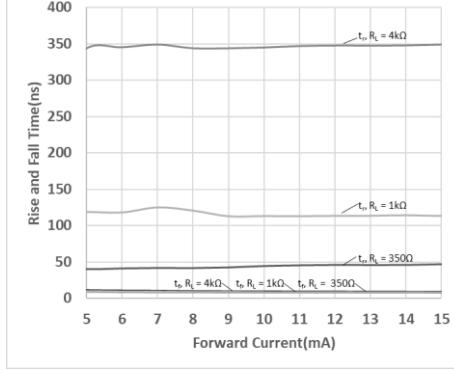


Fig.14 Rise and Fall Time vs. Forward Current

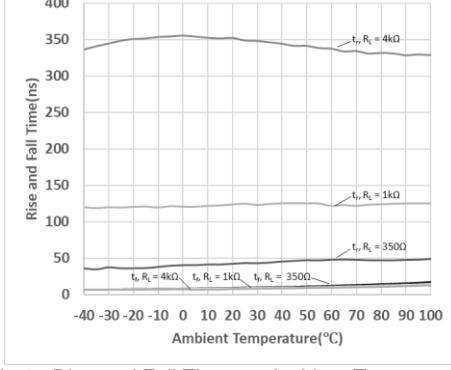


Fig.15 Rise and Fall Time vs. Ambient Temperature

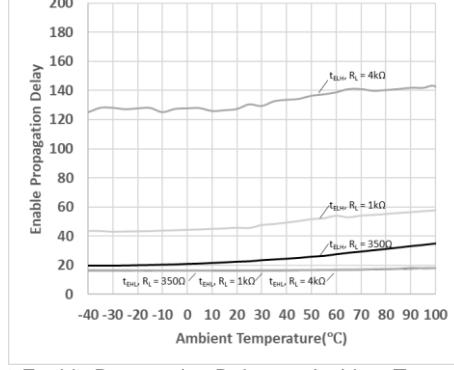
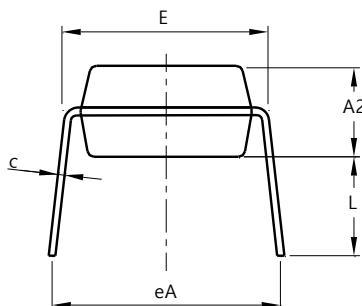
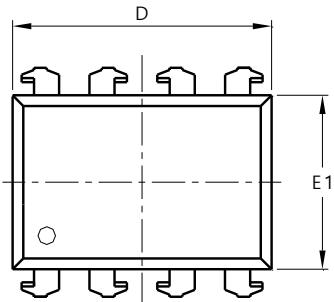


Fig.16 Enable Propagation Delay vs. Ambient Temperature

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

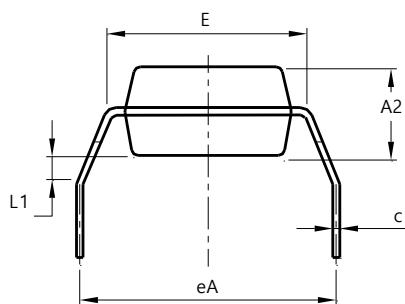
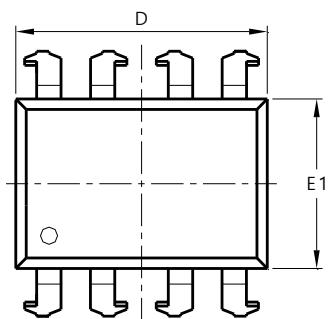
PDIP-8 (Type DY)



PDIP-8 (Type DY)			
Dim	Min	Max	Typ
A2	3.20	3.80	3.50
b	0.40	0.60	0.50
c	0.15	0.35	0.25
D	9.40	10.00	9.70
E	7.32	7.92	7.62
E1	6.20	6.80	6.50
eA	7.62	9.50	8.56
e	2.29	2.79	2.54
L	3.40	4.10	3.70
L1	0.70	1.30	1.00

All Dimensions in mm

MDIP-8



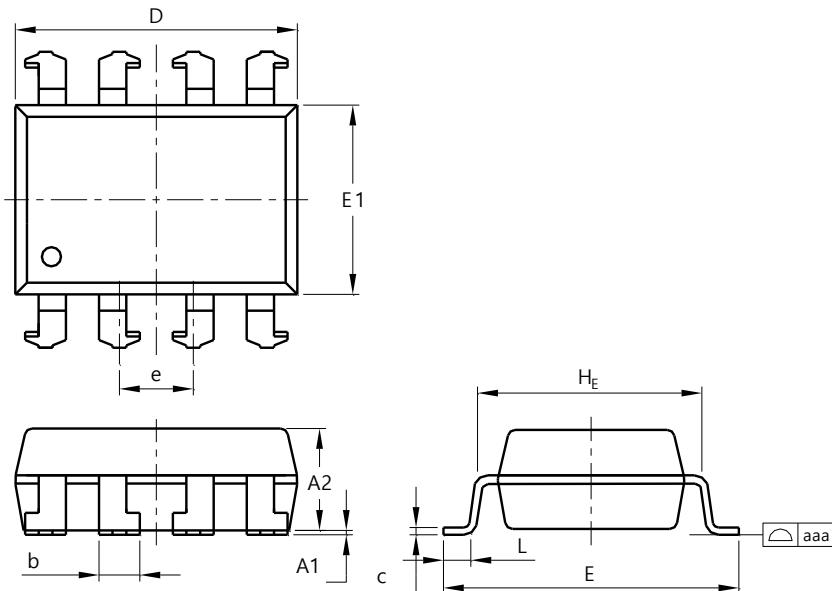
MDIP-8			
Dim	Min	Max	Typ
A2	3.20	3.80	3.50
b	0.40	0.60	0.50
c	0.15	0.35	0.25
D	9.40	10.00	9.70
E	7.32	7.92	7.62
E1	6.20	6.80	6.50
eA	9.66	10.66	10.16
e	2.29	2.79	2.54
L	3.40	3.90	3.60
L1	0.80	1.40	1.10

All Dimensions in mm

Package Outline Dimensions (continued)

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SL-8



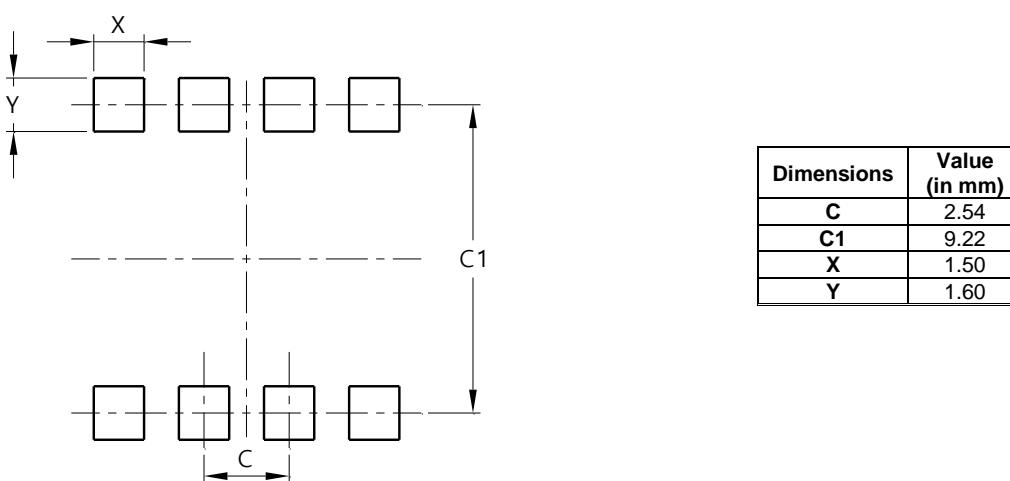
SL-8			
Dim	Min	Max	Typ
A1	0.00	0.30	0.15
A2	3.20	3.80	3.50
b	1.15	1.35	1.25
c	0.15	0.35	0.25
D	9.38	9.98	9.68
E	9.66	10.66	10.16
E1	6.20	6.80	6.50
e	2.29	2.79	2.54
H _E	7.32	7.92	7.62
L	0.60	--	--
aaa	--	0.10	--

All Dimensions in mm

Suggested Pad Layout

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SL-8



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