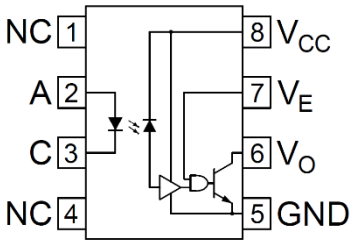
Product Summary

Baud Rate (bps)	Signal Level	Isolation Voltage (V_{RMS})	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} = 5,000V_{RMS})
- LSTTL/ TTL and 5V CMOS Compatible
- Safety Approval
  UL1577
  CQC 4943.1-2022
  VDE EN IEC 60747-5-5
- **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/**

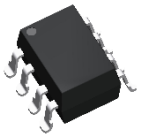
Mechanical Data

- 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	13" Reel
DPC6137S-TR-V	SL-8 (VDE Parts)	1,000pcs	13" 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

= Manufacturer's Code Marking
6137 = Product Type Marking Code
V = VDE Safety Mark Option
Y = Last Digit of Year (ex: 6 = 2026)
WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +25°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 (<1µs 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	°C
Storage Temperature		T_{STG}	-55 to +125	°C
Soldering Temperature (For 10 Seconds)		T_{SOL}	+260	°C

Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
Operating Temperature	T_{OPR}	-40	+85	°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 = 1kΩ)	N	—	5	TTL Loads

Electrical Characteristics (@T_A = +25°C, V_{CC} = 5.5V, unless otherwise specified.)

Parameter		Test Conditions	Symbol	Min	Typ	Max	Unit
Emitter (LED)	Forward Voltage	I_F = 10mA	V_F	—	1.4	1.6	V
	Reverse Current	V_R = 5V	I_R	—	—	10	µA
	Terminal Capacitance	V_F = 0, f = 1MHz	C_T	—	30	—	pF
Detector	High-Level Supply Current	V_E = 0.5V, I_F = 0	I_{CCH}	—	7	10	mA
	Low-Level Supply Current	V_E = 0.5V, I_F = 10mA	I_{CCL}	—	9	13	mA
	Input Threshold Current	V_{CC} = 5.5V, V_O = 0.6V, I_{OL} (Sinking) = 13mA	I_{TH}	—	2.0	5.0	mA
	High-Level Enable Current	V_E = 2V	I_{EH}	—	-0.7	-1.6	mA
	Low-Level Enable Current	V_E = 0.5V	I_{EL}	—	-0.9	-1.6	mA
	High-Level Enable Voltage	V_{CC} = 5V	V_{EH}	2	—	—	V
	Low-Level Enable Voltage	V_{CC} = 5V	V_{EL}	—	—	0.8	V
	High-Level Output Current	V_E = 2.0V, V_O = 5.5V, I_F = 250µA	I_{OH}	—	5.5	100	µA
	Low-Level Output Voltage	I_{OL} = 13mA, I_F = 5mA	V_{OL}	—	0.35	0.6	V

Switching Characteristics (@T_A = +25°C, V_{CC} = 5V, unless otherwise specified.)

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Propagation Delay Time to High Output Level	R_L = 350Ω, C_L = 15pF	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}	R_L = 350Ω, C_L = 15pF V_{EL} = 0, V_{EH} = 3V	t_{ELH}	—	30	—	ns
Propagation Delay Time of Enable from V_{EL} to V_{EH}		t_{EHL}	—	20	—	ns

Common Mode Transient Immunity (@T_A = +25°C, V_{CC} = 5V, unless otherwise specified.)

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

Note: Guaranteed by design.

Characteristics Curves

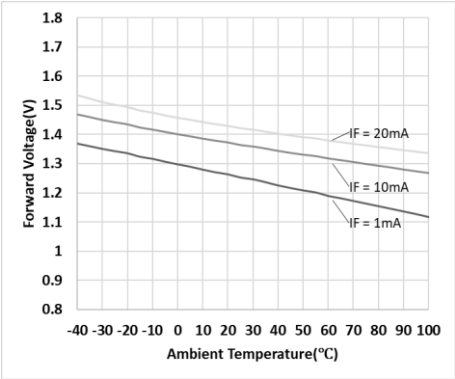


Fig.1 Forward Voltage vs. Ambient Temperature

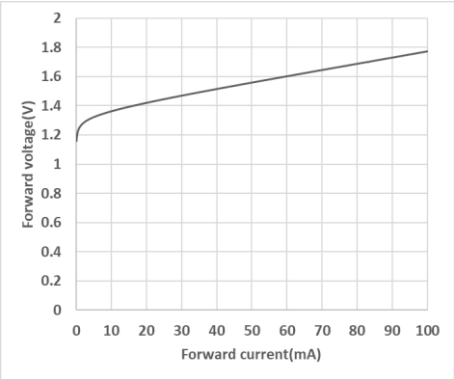


Fig.2 Forward Voltage vs. Forward Current

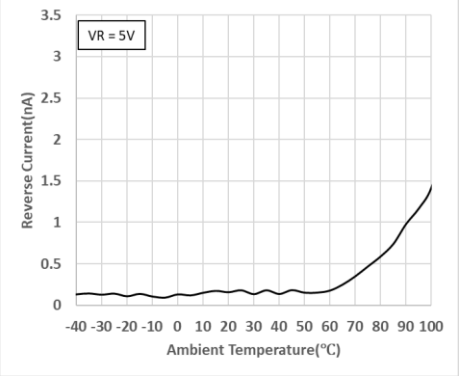


Fig.3 Reverse Current vs. Ambient Temperature

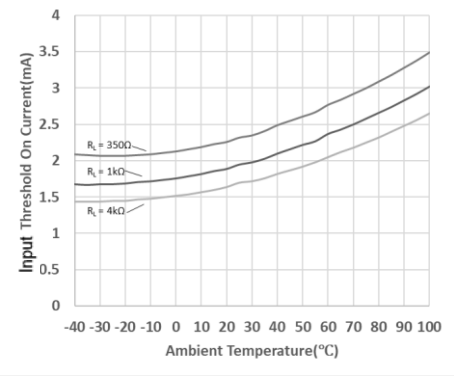


Fig.4 Input Threshold On Current vs. Ambient Temperature

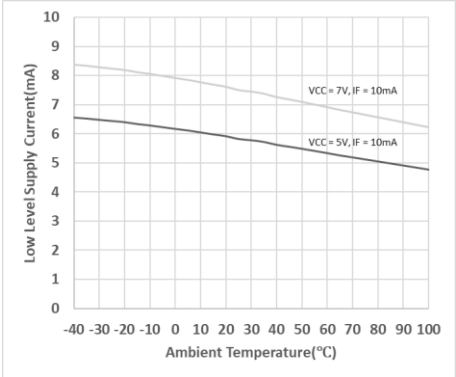


Fig.5 Low-Level Supply Current vs. Ambient Temperature

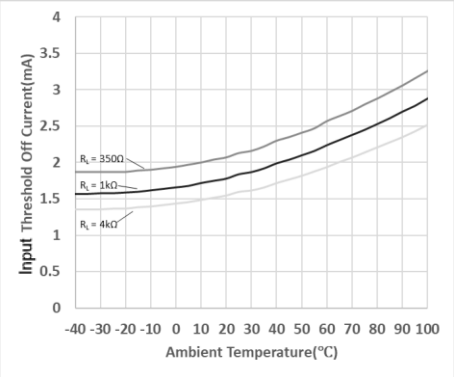


Fig.6 Input Threshold Off Current vs. Ambient Temperature

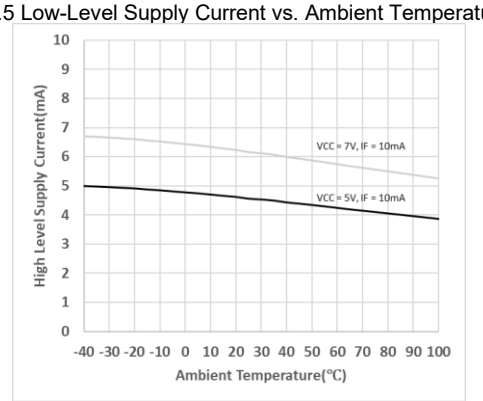


Fig.7 High-Level Supply Current vs. Ambient Temperature

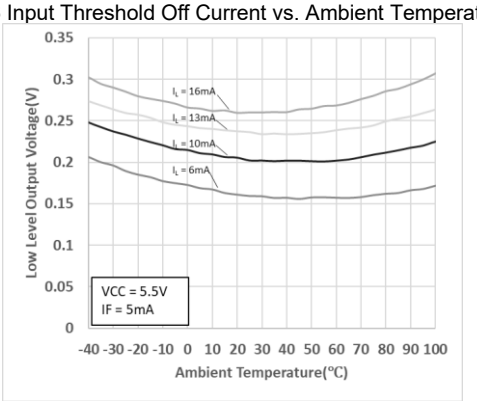


Fig.8 Low-Level Output Voltage vs. Ambient Temperature

Characteristics Curves (continued)

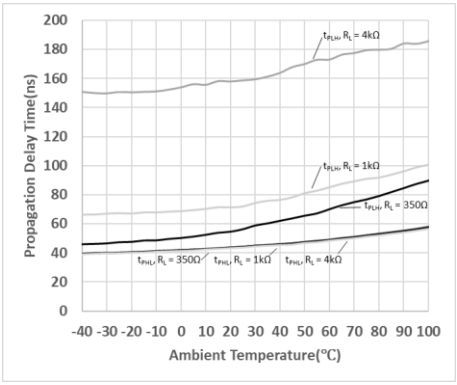


Fig.9 Propagation Delay vs. Ambient Temperature

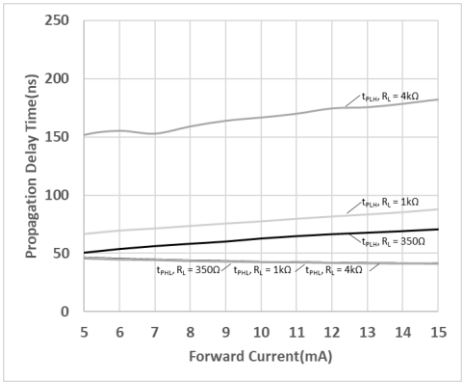


Fig.10 Propagation Delay vs. Forward Current

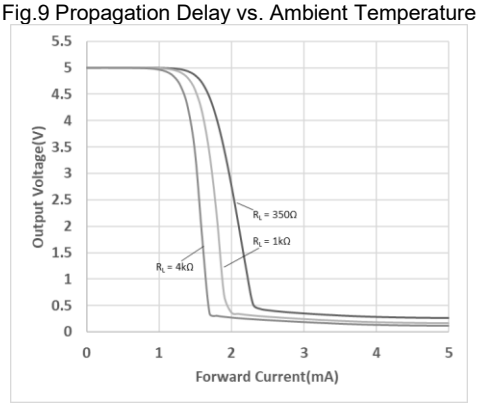


Fig.11 Output Voltage vs. Forward Input Current

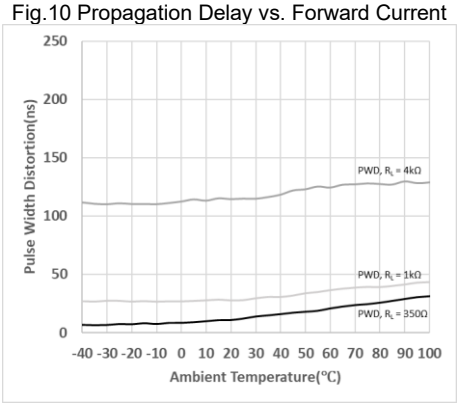


Fig.12 Pulse Width Distortion vs. Ambient Temperature

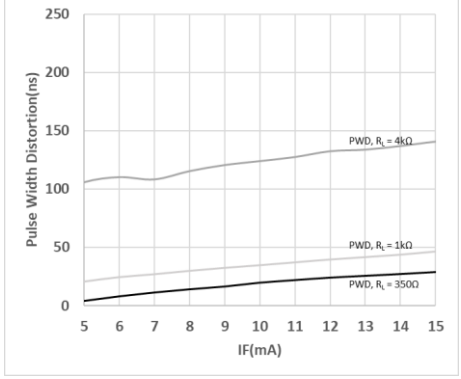


Fig.13 Pulse Width Distortion vs. Forward Current

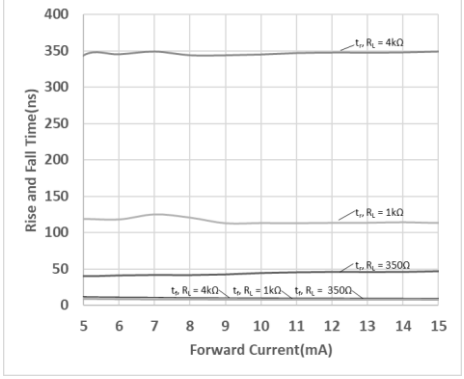


Fig.14 Rise and Fall Time vs. Forward Current

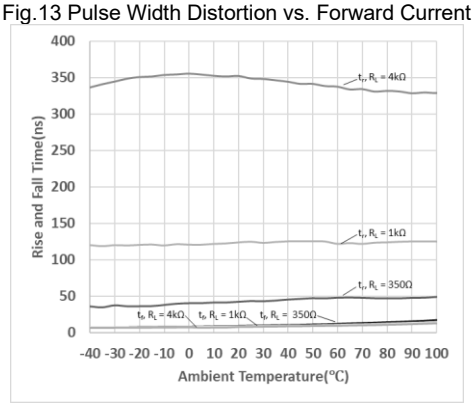


Fig.15 Rise and Fall Time vs. Ambient Temperature

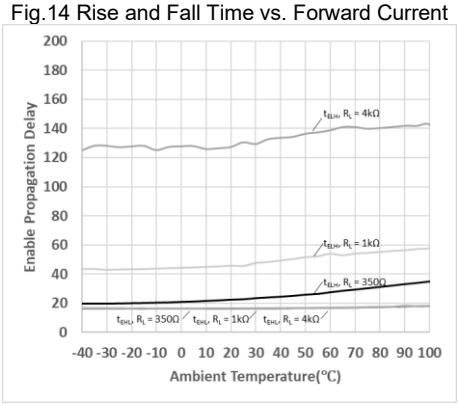
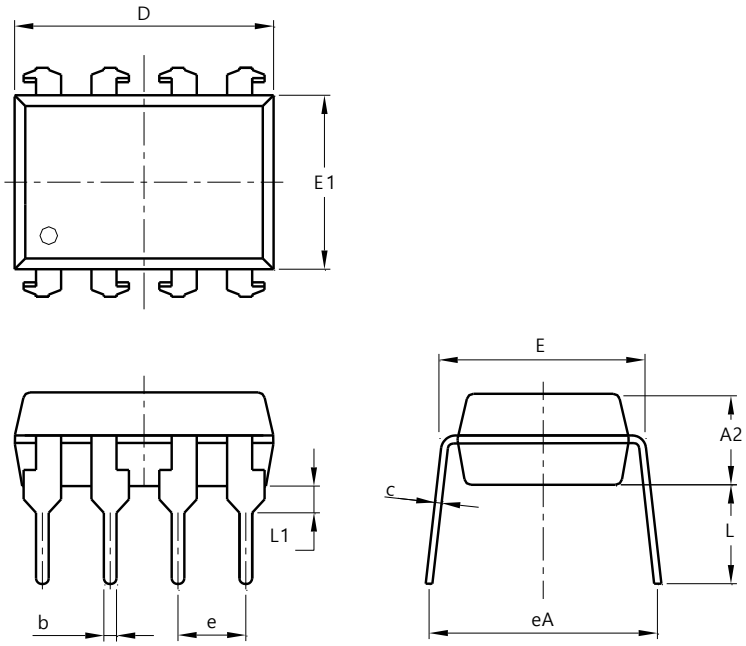


Fig.16 Enable Propagation Delay vs. Ambient Temperature

Package Outline Dimensions

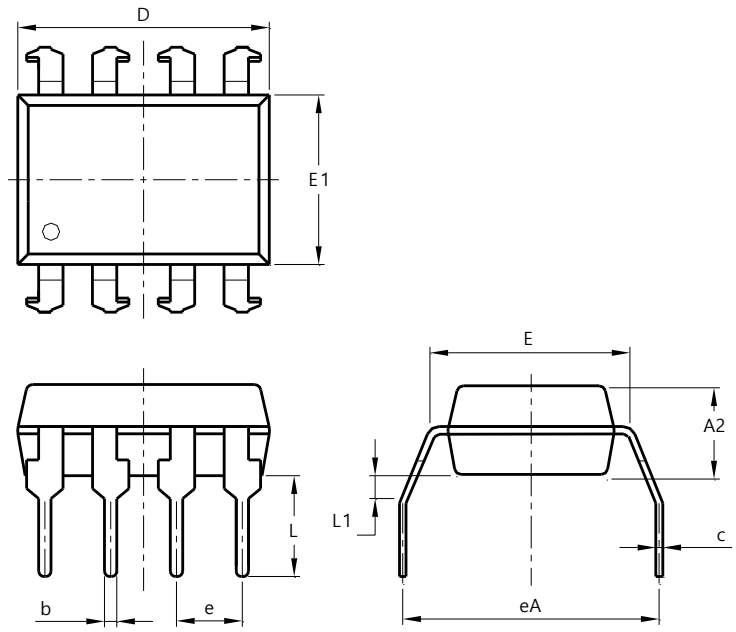
Please see http://www.diodes.com/package-outlines.html for the latest version.

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

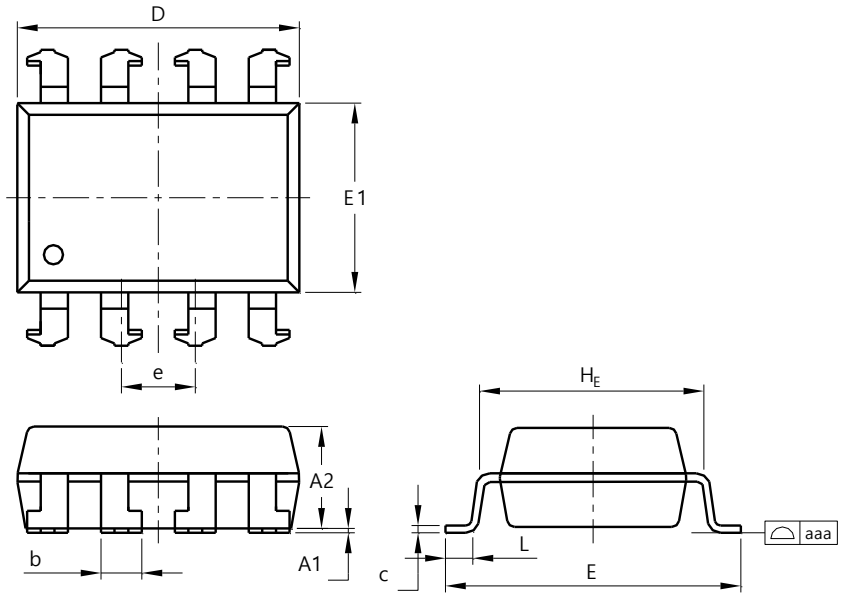


MDIP-8			
Dim	**Min**	**Max**	**Typ**
A2	3.20	3.80	3.50
b	0.40	0.60	0.50
c	0.15	0.35	0.25
D	9.40	10.00	9.70
E	7.32	7.92	7.62
E1	6.20	6.80	6.50
eA	9.66	10.66	10.16
e	2.29	2.79	2.54
L	3.40	3.90	3.60
L1	0.80	1.40	1.10
All Dimensions in mm			

Package Outline Dimensions (continued)

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

SL-8

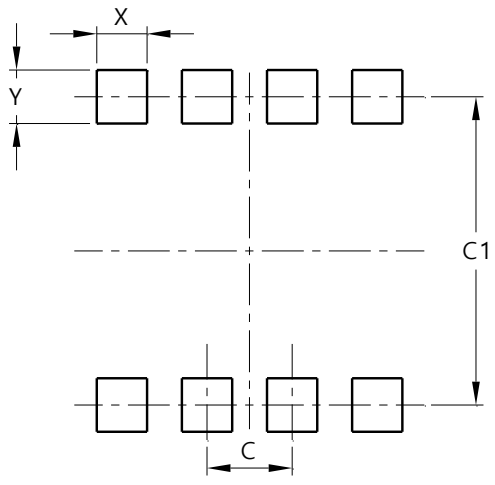


SL-8			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.30	0.15
A2	3.20	3.80	3.50
b	1.15	1.35	1.25
c	0.15	0.35	0.25
D	9.38	9.98	9.68
E	9.66	10.66	10.16
E1	6.20	6.80	6.50
e	2.29	2.79	2.54
H_E	7.32	7.92	7.62
L	0.60	--	--
aaa	--	0.10	--
All Dimensions in mm			

Suggested Pad Layout

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

SL-8



Dimensions	Value (in mm)
C	2.54
C1	9.22
X	1.50
Y	1.60

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