LITE-ON SEMICONDUCTOR

L05ESDU5V0CE2

ESD PROTECTION DIODE

STAND-OFF VOLTAGE - 5.0 Volts
POWER DISSIPATION - 50 Watts

GENERAL DESCRIPTION

The L05ESDU5V0CE2 is ultra low capacitance TVS arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

FEATURES

- Protects one data or I/O line
- Low capacitance
- Low clamping voltage
- IEC 61000-4-2, level 4 (ESD), > ±15KV (AIR) ; > ±8KV (CONTACT).

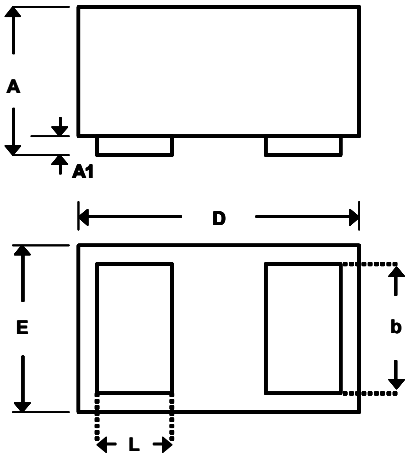
APPLICATION

- Cellular Handsets & Accessories
- Digital Visual Interface (DVI)
- RF Circuits
- Display Port
- USB Ports
- MDDI Ports
- PCI Express

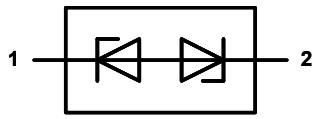
MECHANICAL DATA

- Case material: “Green” molding compound UL flammability classification 94V-0 (No Br, Sb, Cl),
- Component in accordance to RoHs 2002/95/EC

SOD-882



SOD-882		
DIM.	MIN.	MAX.
A	0.47	0.53
A1	0.00	0.05
b	0.25	0.55
D	0.95	1.075
E	0.55	0.675
L	0.20	0.45
All dimension in millimeter		



PIN ASSIGNMENT	
1	Cathode
2	Cathode

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power (8/20us waveform)	P_{PPM}	50	W
Peak pulse current (8/20us waveform)	I_{PP}	4	A
Operating junction temperature range	T_J	-55 to +125	°C
Storage temperature range	T_{STG}	-55 to +150	°C
Soldering temperature, t max = 10s	T_L	260	°C

ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse standoff voltage	--	V_{DRM}	--	--	5.0	V
Reverse leakage current	V_{DRM} = 5V	I_{RM}	--	--	1	uA
Breakdown voltage	I_R = 1 mA	V_{BR}	6.0	--	--	V
Junction capacitance (each I/O pin and ground)	V_R = 0V, f = 1 MHz,	C_J	--	0.5	0.6	pF
Clamping voltage	I_{PP} = 1A (8/20 us)	V_{CL}	--	--	11	V
	I_{PP} = 4A (8/20 us)		--	--	12.5	

RATING AND CHARACTERISTIC CURVES
L05ESDU5V0CE2

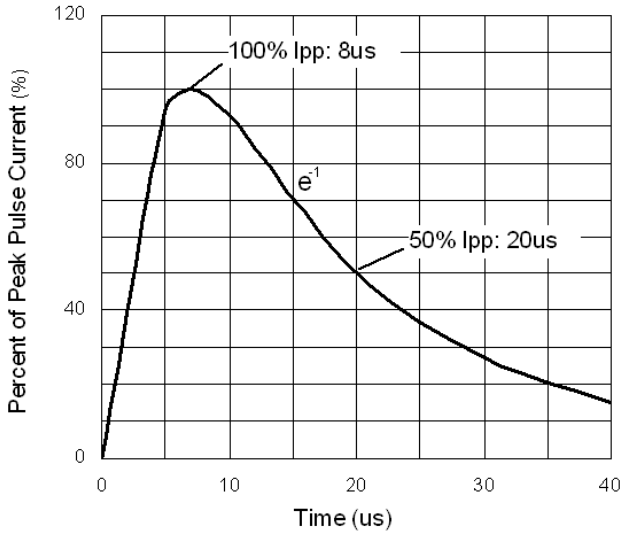


Figure 1. 8/20 us pulse waveform according to IEC 61000-4-5

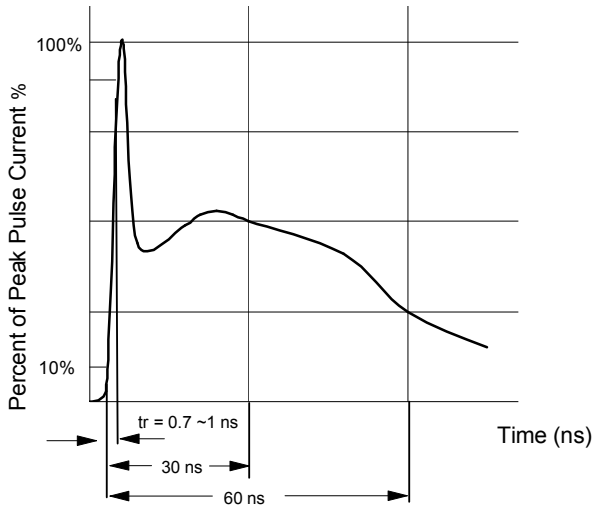


Figure 2. ESD pulse waveform according to IEC 61000-4-2

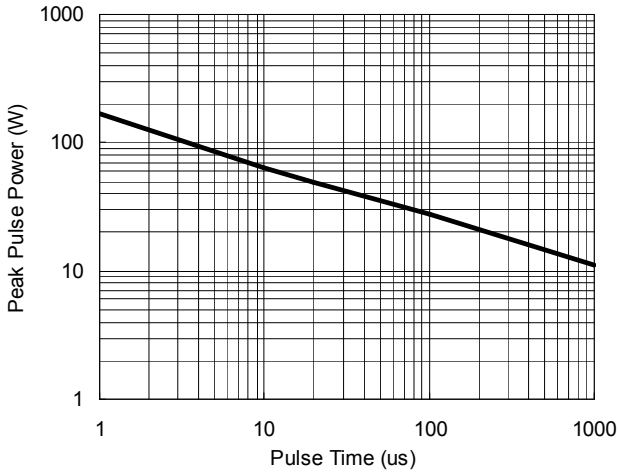


Figure 3. Power Dissipation versus Pulse Time

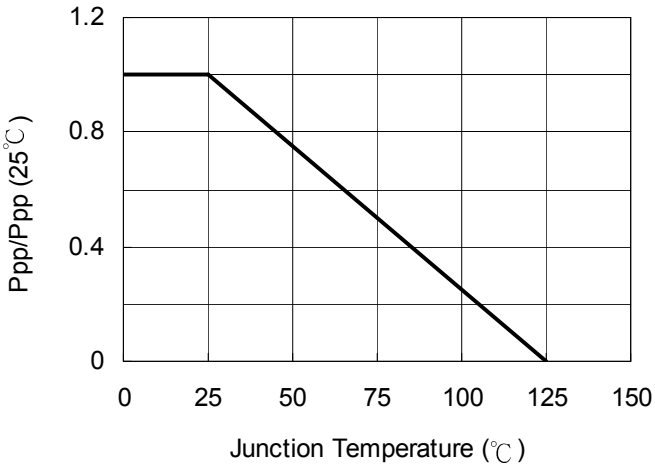


Figure 4. Peak pulse power versus TJ

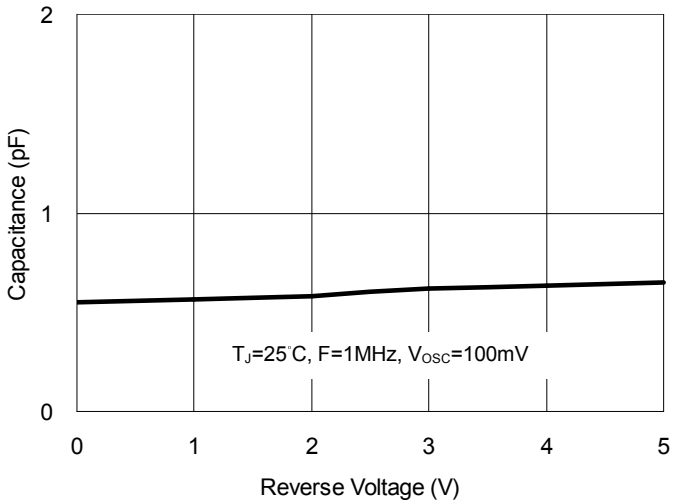


Figure 5. Typical Junction Capacitance

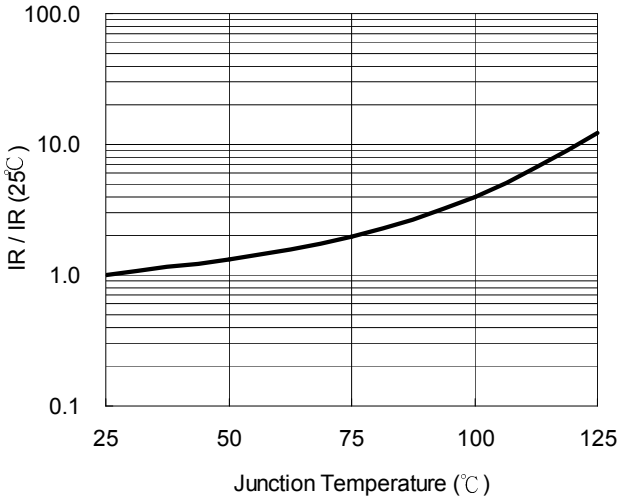


Figure 6. Reverse Leakage Current versus TJ

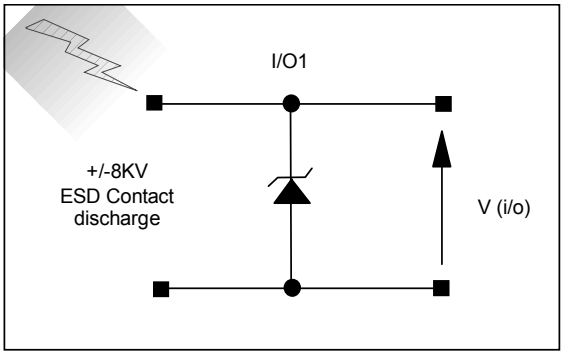


Figure 7. ESD Test Configuration

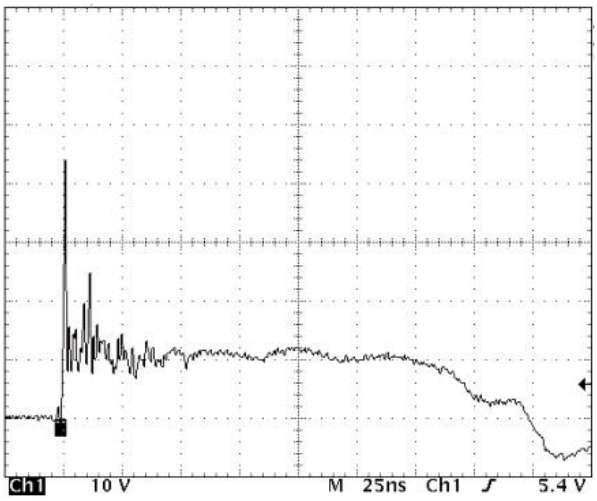


Figure 8. Clamped +8 kV ESD voltage waveform

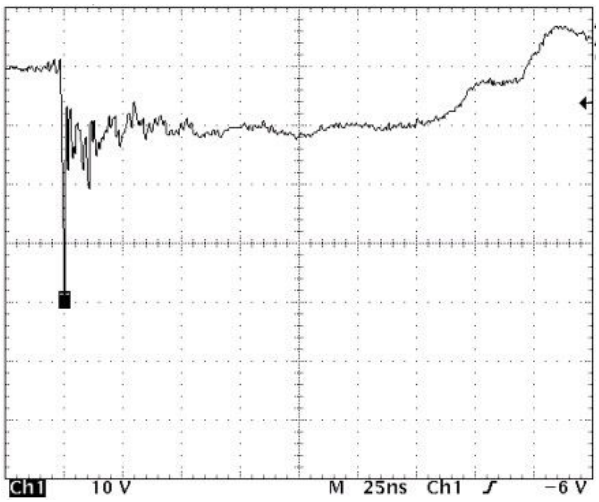


Figure 9. Clamped -8 kV ESD voltage waveform

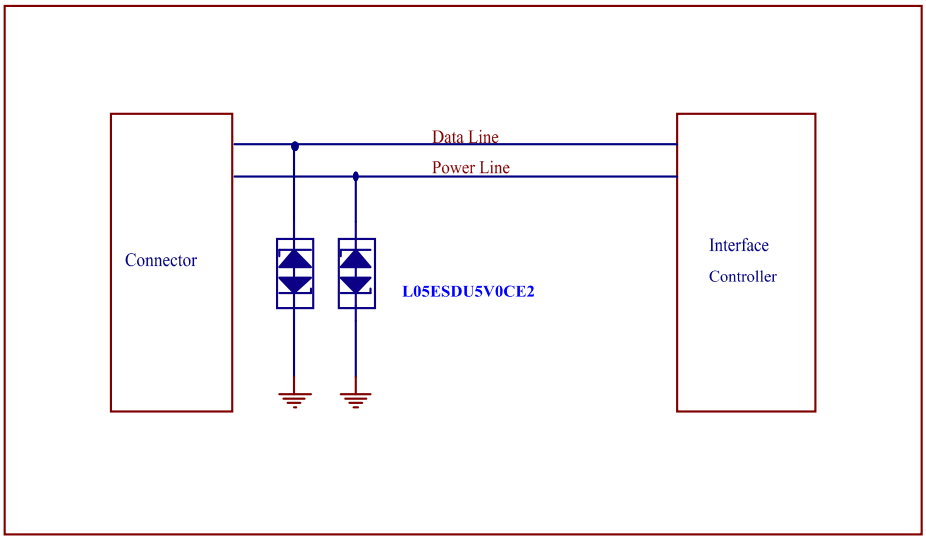


Figure 10. Cellular Handsets & Accessories ESD Protection

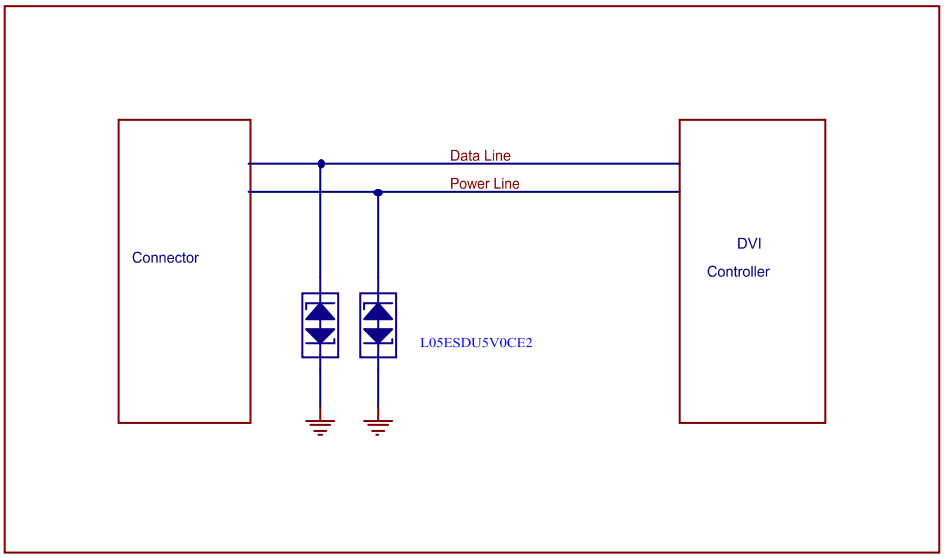


Figure 11. DVI ESD Protection

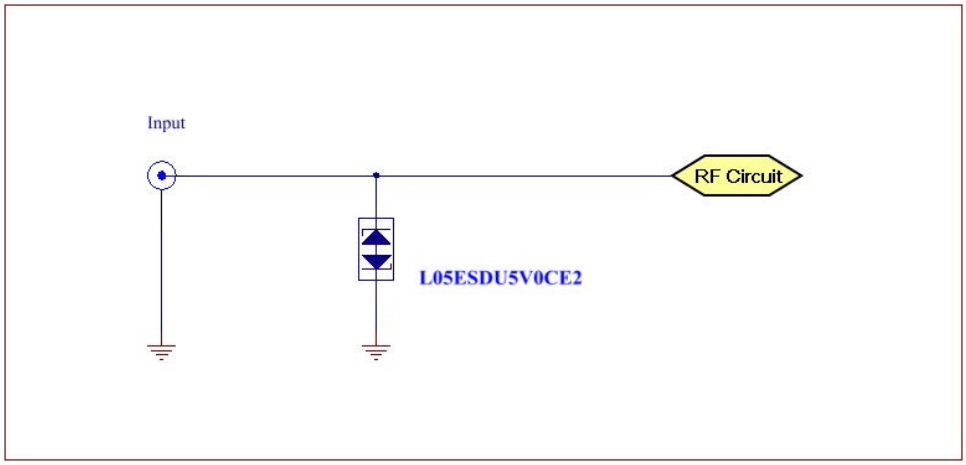


Figure 12. RF Circuit ESD Protection

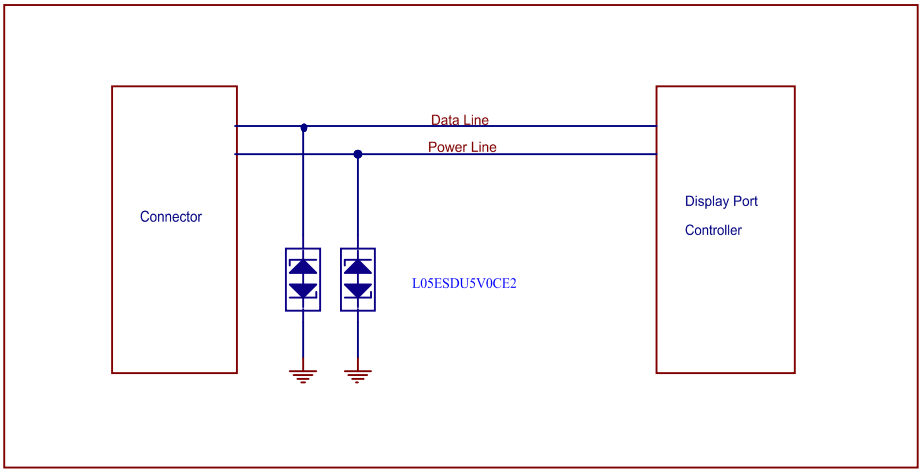


Figure 13. Display Port ESD Protection

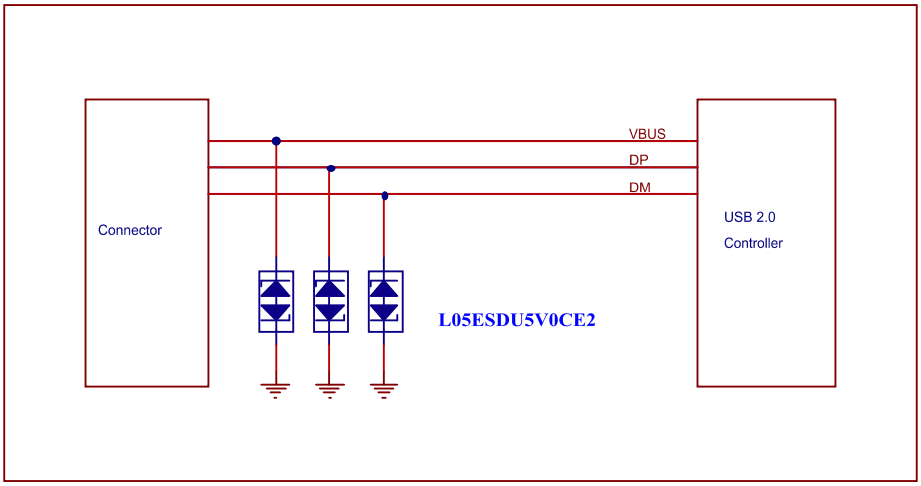


Figure 14. USB2.0 Interface ESD Protection

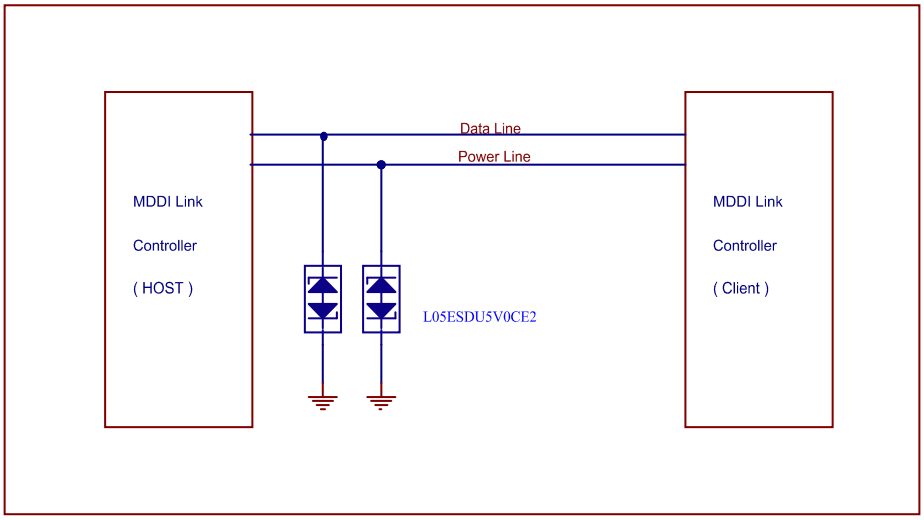


Figure 15. MDDI ESD Protection

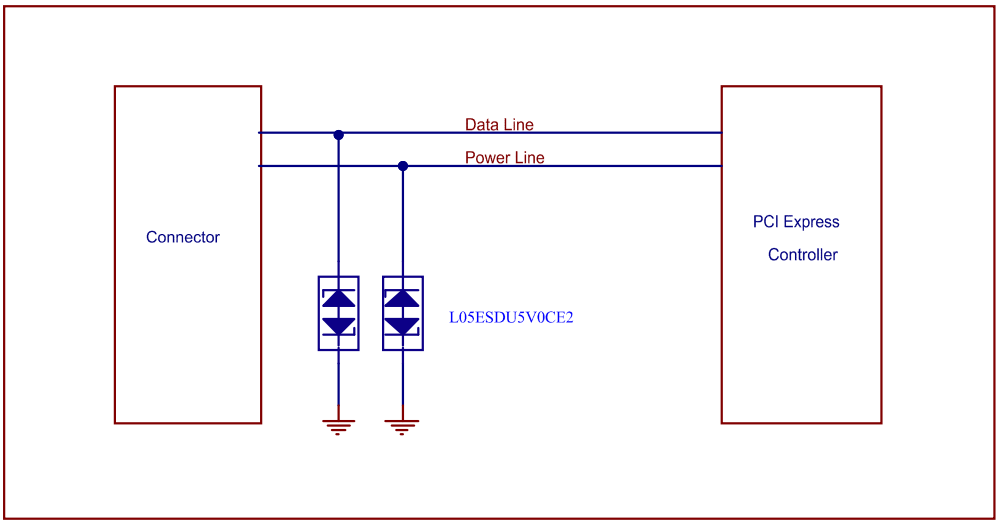
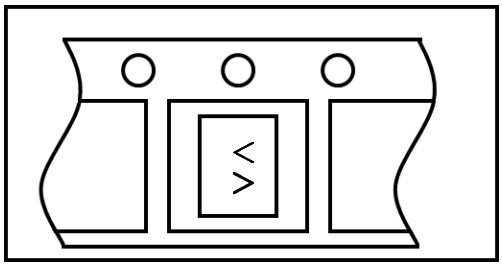


Figure 16. PCI Express ESD Protection

MARKING AND PACKAGING INFORMATION
L05ESDU5V0CE2

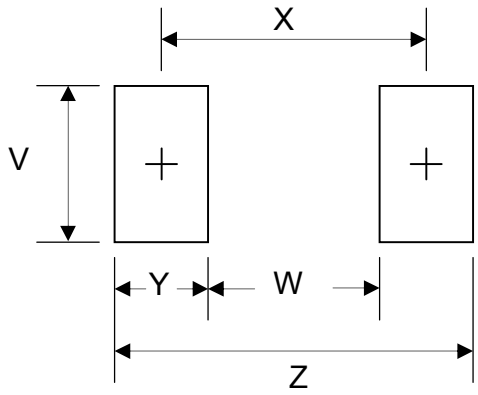
Marking and Orientation :



Packaging Information :

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L05ESDU5V0CE2	10K	7	150K	300K

SOD-882 Soldering Pad Layout :



Dim.	Millimeters	Inches
Z	1.30	0.051
X	0.75	0.029
W	0.20	0.007
Y	0.55	0.021
V	0.80	0.031

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