

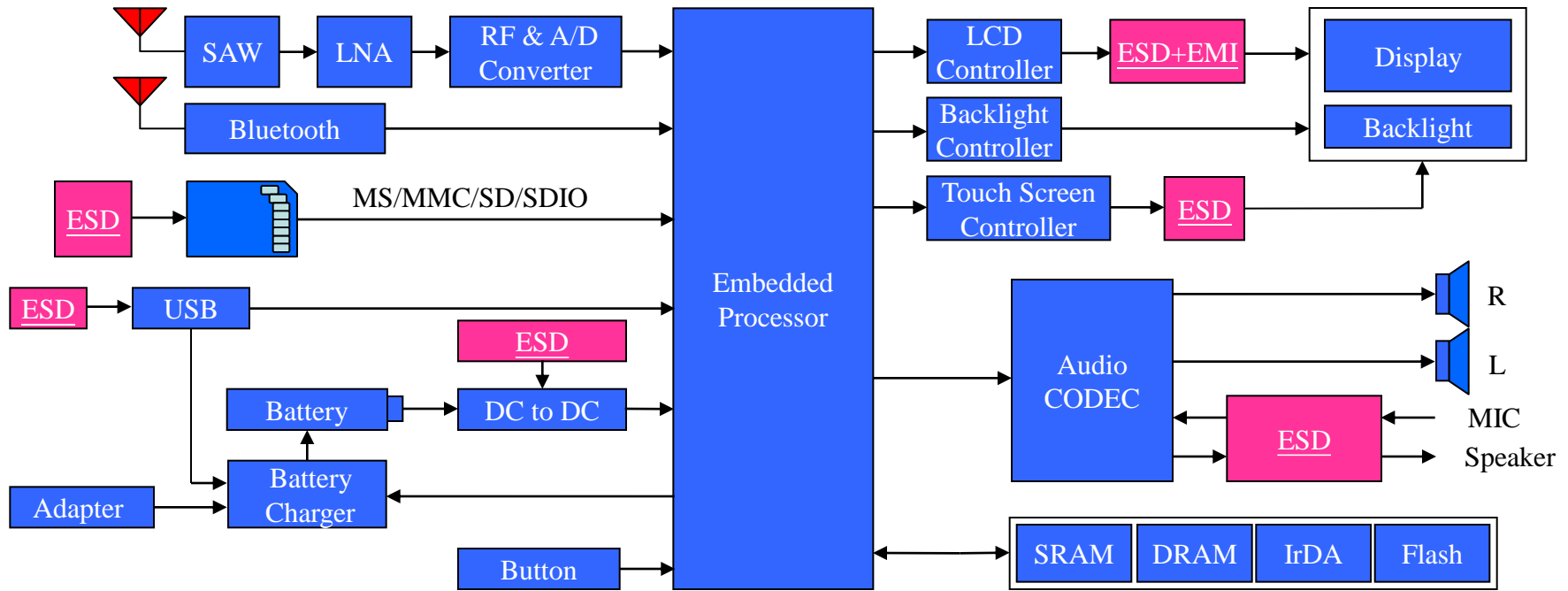
# Lite-On Semiconductor GPS Platform Solutions



**WORLD PRODUCTS, LLC**  
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Exclusive agent in the America's for all Lite-On Semiconductor products.

# GPS Block Diagram



<u>ESD</u>
L04ESD5V0CP2
L13ESD5V0CE2
L15ESDL5V0D6-4
L15ESD12VE2
L18ESD12VA2

<u>ESD+EMI Filter</u>
LEF10001M8-4
LEF10001MC-6
LEF10001MG-8
LEFH1701TC-6
LEFH1701TG-8

# LSC Product Selection Guide

## Surface Mount ESD Protection Device

Part Number	Peak Power Dissipation 8x20μs	Reverse standoff voltage	Max Reverse Leakage @ VR	Max Clamping Voltage @8x20μs	Peak Pulse Current 8x20μs	Off-State Capacitance 1MHz Zero DC Bias	Package
		VR	IR	Vc	Ipp	Co	
	W	V	uA	V	A	pF	
L04ESD5V0CP2	40	5	0.1	12.5	3.5	4.5 (typ)	SOD-923
L13ESD5V0CE2	130	5	0.01	14	12	45	SOD-923
L15ESDL5V0D6-4	150	5	1	19	8	3	SOT-363
L15ESD12VE2	150	12	0.05	25	6	75	SOD-882
L18ESD12VA2	180	12	0.05	30	6	75	SOD-523



# LSC Product Selection Guide

## Surface Mount ESD Protection Device with EMI Filter

Part Number	Peak Power Dissipation 8x20μs	Reverse standoff voltage	Max Reverse Leakage @ VR	Resistance	Off-State Capacitance 0MHz 2.5V DC Bias	Off-State Capacitance 1MHz Zero DC Bias	Package
		VR	IR	R	Co	Co	
	W	V	uA	Ohm	pF	pF	
LEF10001M8-4	----	5	0.5	100	11	20	SLP2116P8
LEF10001MC-6	-----	5	0.5	100	11	20	SLP3016P12
LEF10001MG-8	-----	5	0.5	100	11	20	SLP4016P16
LEFH1701TC-6	----	5	0.5	17nH	2.5	----	SLP2513P12
LEFH1701TG-8	---	5	0.5	17nH	23.5	----	SLP3313P16



# *L04ESD5V0CP2*

## *4.5pF Bidirectional in SOD923*

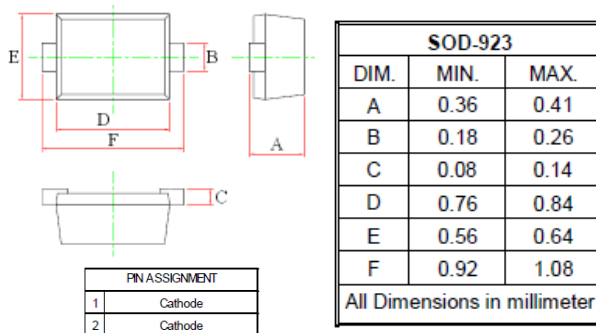
### Features

- Bidirectional ESD Protection of Single Line
- Max. Peak Pulse Power is 40Watts @ 8/20us
- Low Clamping Voltage
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

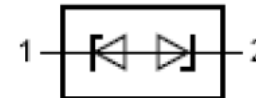
### Applications

- Computers and Peripherals
- Communication System
- Portable Electronics
- Cellular handsets and Accessories
- Notebook, Desktops and Servers
- Audio & Video Equipment

### Package & Dimension



### Layout



# *L13ESD5V0CE2*

## *130W Bidirectional in SOD882*

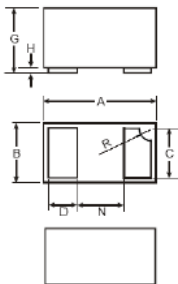
### Features

- Bidirectional ESD Protection of Single Line
- Max. Peak Pulse Power is 130Watts @ 8/20us
- Low Clamping Voltage
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact
- IEC 61000-4-5, Level 1 (Surge), Ipp=12A @ 8/20us

### Applications

- Computers and Peripherals
- Communication System
- Portable Electronics
- Notebook, Desktops and Servers
- Audio & Video Equipment

### Package & Dimension

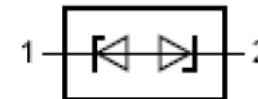


SOD-882		
DIM.	MIN.	MAX.
A	0.95	1.07
B	0.55	0.68
C	0.45	0.55
D	0.20	0.30
G	0.47	0.53
H	0.00	0.05
N	0.40 (Typ.)	
R	0.05	0.15

All Dimensions in millimeter

PIN ASSIGNMENT	
1	Cathode
2	Cathode

### Layout



# L15ESDL5V0D6-4

## 3pF 4CH ARRAY in SOT363

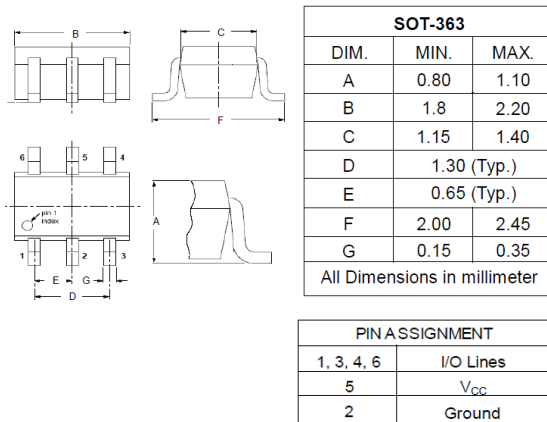
### Features

- Protects Up to Four I/O Line & Power Line
- Low Capacitance <3pF for High Speed Interface
- Low Clamping Voltage
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

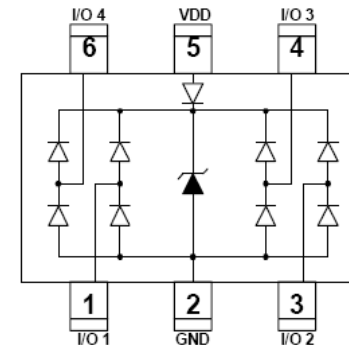
### Applications

- Displays
- DVI
- USB2.0/3.0
- USB OTG
- IEEE 1394 Firewire Port
- Ethernet

### Package & Dimension



### Layout



# *L15ESD12VE2*

## *150W 12V Directional in SOD882*

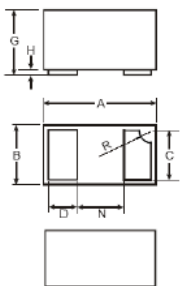
### Features

- Uni-directional ESD Protection of Single Line
- Max. Peak Pulse Power is 150Watts @ 8/20us
- Capacitance is 45pF (Typical)
- Low Clamping Voltage
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

### Applications

- Computers and Peripherals
- Communication System
- Portable Electronics
- Audio & Video Equipment

### Package & Dimension



SOD-882		
DIM.	MIN.	MAX.
A	0.95	1.07
B	0.55	0.68
C	0.45	0.55
D	0.20	0.30
G	0.47	0.53
H	0.00	0.05
N	0.40 (Typ.)	
R	0.05	0.15

All Dimensions in millimeter

PIN ASSIGNMENT	
1	Cathode
2	Cathode

### Layout



# L18ESD12VA2

## 180W 12V Directional in SOD523

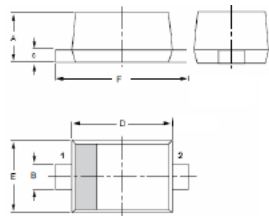
### Features

- Protection of Single Line
- Max. Peak Pulse Power is 180Watts @ 8/20us
- Low Clamping Voltage is 30V
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

### Applications

- Computers and Peripherals
- Communication System
- CAN Bus Protection
- Data Line
- Audio & Video Equipment

### Package & Dimension



SOD523		
DIM.	MIN.	MAX.
A	0.58	0.65
B	0.26	0.34
C	0.11	0.17
D	1.15	1.25
E	0.75	0.85
F	1.55	1.65

All Dimensions in millimeter

PIN ASSIGNMENT	
1	Cathode
2	anode

### Layout

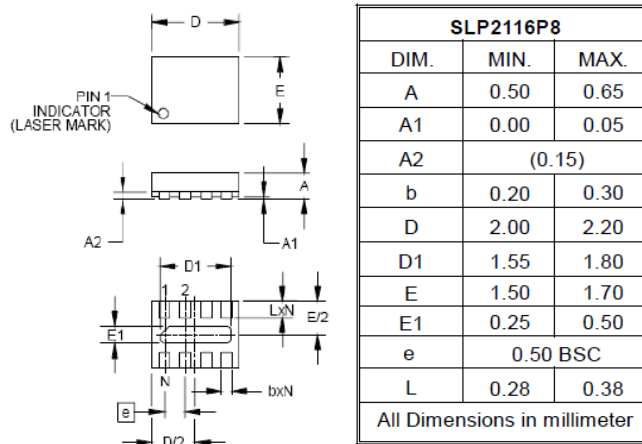


**100ohms 10pF 4CH Filter in SLP2116**

**Features**

- Bidirectional EMI/RFI Filter with Integrated TVS for ESD Protection
- Filter Performance is 30dB minimum attenuation 1.8GHz to 2.5GHz
- Eight Lines Protection and Filtering
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

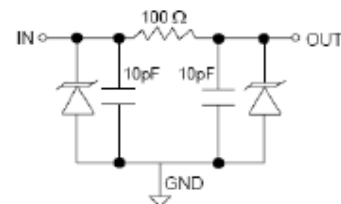
**Package & Dimension**



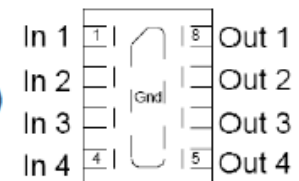
**Applications**

- Color LCD Protection
- Cell Phone CCD Camera Lines
- Clamshell /cell /phones
- Audio Filter

**Layout**



Device Schematic (4X)



Pin Assignment (Top Side View)

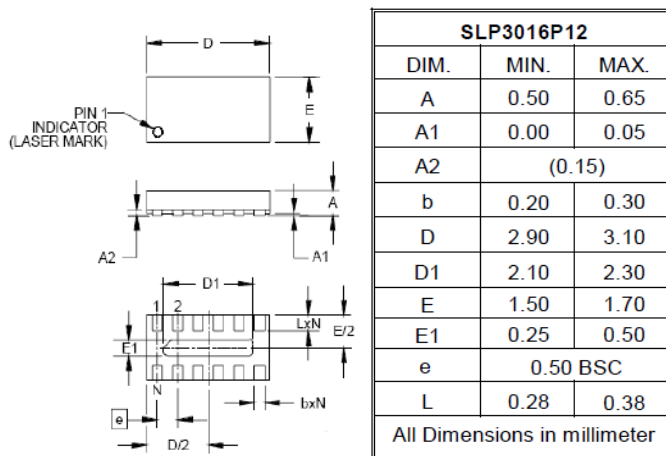
**Features**

- Bidirectional EMI/RFI Filter with Integrated TVS for ESD Protection
- Filter Performance is 30dB minimum attenuation 1.8GHz to 2.5GHz
- Eight Lines Protection and Filtering
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

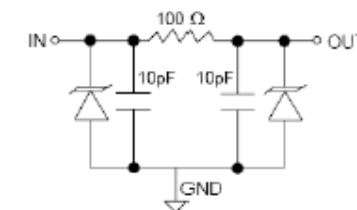
**Applications**

- Color LCD Protection
- Cell Phone CCD Camera Lines
- Clamshell /cell /phones
- Audio Filter

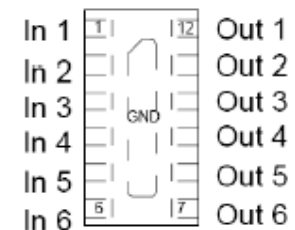
**Package & Dimension**



**Layout**



Device Schematic (6X)



Pin Assignment (Top Side View)

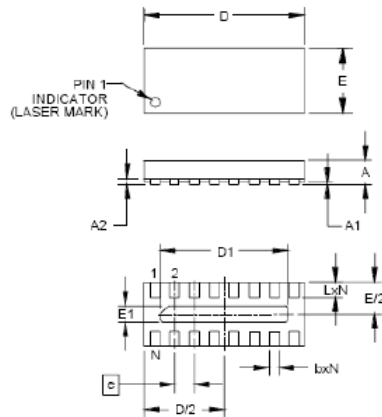
**Features**

- Bidirectional EMI/RFI Filter with Integrated TVS for ESD Protection
- Filter Performance is 30dB minimum attenuation 1.8GHz to 2.5GHz
- Eight Lines Protection and Filtering
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

**Applications**

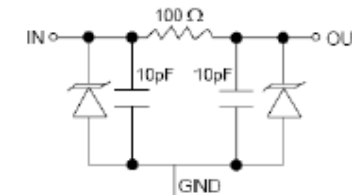
- Color LCD Protection
- Cell Phone CCD Camera Lines
- Clamshell /cell /phones
- Audio Filter

**Package & Dimension**

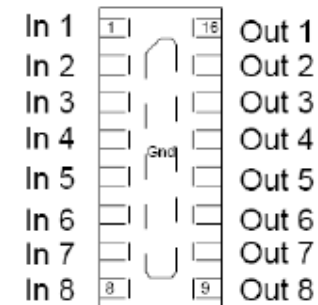


SLP4016P16		
DIM.	MIN.	MAX.
A	0.50	0.65
A1	0.00	0.05
A2	(0.13)	
b	0.20	0.30
D	3.90	4.10
D1	3.10	3.30
E	1.50	1.70
E1	0.25	0.50
e	0.50 BSC	
L	0.28	0.38
All Dimensions in millimeter		

**Layout**



Device Schematic (8X)



Pin Assignment (Top Side View)

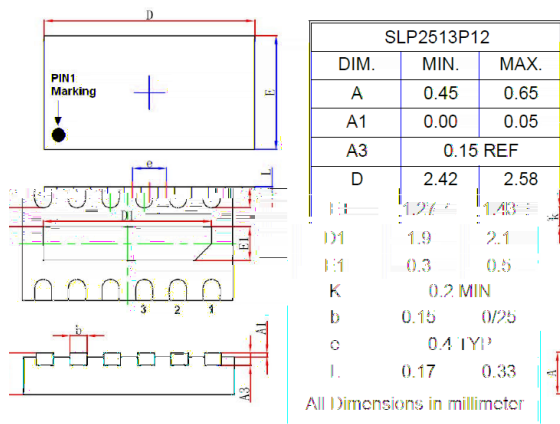
**Features**

- Pi-style EMI Filters in a Capacitor Inductor-Capacitor (LCL) Network
- Greater than 30dB Attenuation at 1GHz
- Six Lines Protection and Filtering
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

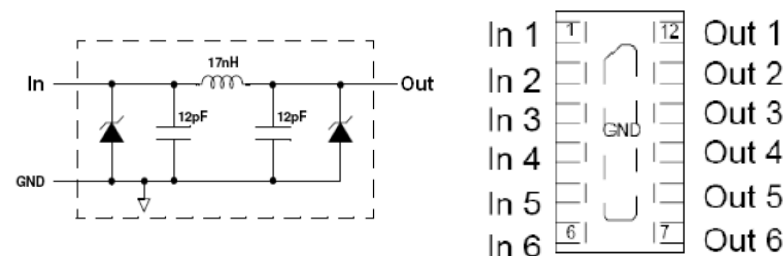
**Applications**

- Color LCD Protection
- Cell Phone CCD Camera Lines
- Clamshell / Cell / Phones
- Audio Filter

**Package & Dimension**



**Layout**



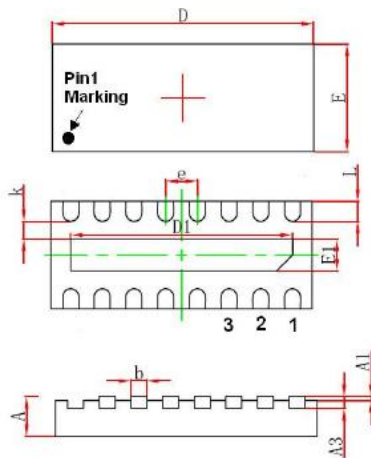
**Features**

- Pi-style EMI Filters in a Capacitor Inductor-Capacitor (LCL) Network
- Greater than 30dB Attenuation at 1GHz
- Six Lines Protection and Filtering
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

**Applications**

- Color LCD Protection
- Cell Phone CCD Camera Lines
- Clamshell / Cell / Phones
- Audio Filter

**Package & Dimension**



SLP3313P16		
DIM.	MIN.	MAX.
A	0.45	0.65
A1	0.00	0.05
A3	0.15 REF	
D	3.22	3.38
E	1.27	1.43
D1	2.7	2.9
E1	0.3	0.5
K	0.2 MIN	
b	0.15	0/25
e	0.4 TYP	
L	0.17	0.33
All Dimensions in millimeter		

**Layout**

