

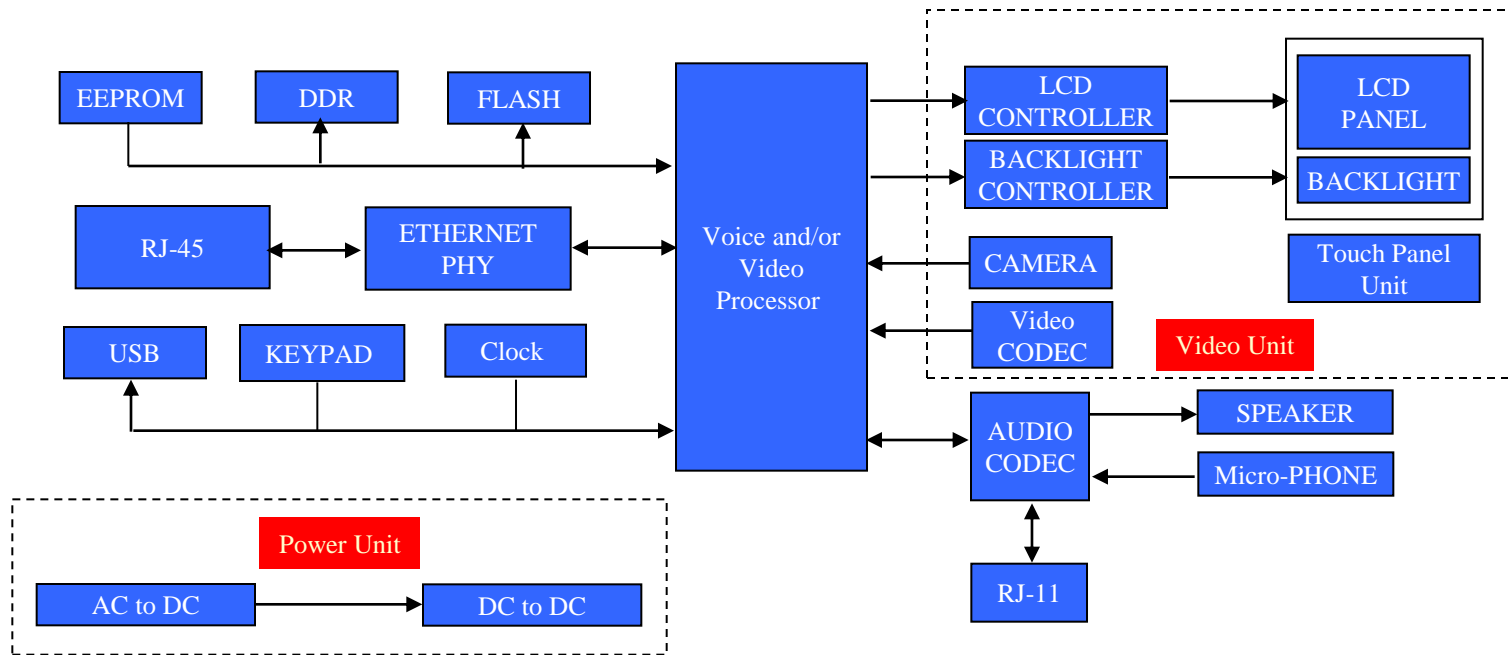
Lite-On Semiconductor VoIP Platform Solutions



WORLD PRODUCTS, LLC
ELECTRONIC COMPONENT SOLUTIONS
sales@worldproducts.com || www.worldproducts.com

Exclusive agent in the America's for all Lite-On Semiconductor products.

VoIP Block Diagram



<u>ESD</u>
L16ESD24VA2
L18ESD12VA2
L26ESD5V0A2
L30ESDL5V0C6-4
L50ESDL5V0H4-2
L60ESDL2V8S8-4

<u>TVS</u>
SMAJ5.0A/CA
SMAJ8.0A/CA
SMAJ13A/CA
SMAJ54A/CA
SMAJ58A/CA

<u>TSPD</u>
TB2300L/M/H
TB2600L/M/H
TB3100L/M/H
TB3500L/M/H

<u>SCHOTTKY</u>
B140A
B340A
1N5819WL
<u>Bridge</u>
HD06

<u>SWITCH</u>
BAV99W
1N4148W
LS4148W/WS
<u>ZENER</u>
MMSZ5242B

LSC Product Selection Guide

Rectifier product

Part No.	Family	VR	I _{FAV}	I _{FSM}	IR @ VR	V _F @ I _F		Package
		Min. (V)	Max. (A)	Max. (A)	mA	Max. (V)	A	
B140	Schottky	40	1	30	0.5	0.5	1	SMA
B340A	Schottky	40	3	100	0.5	0.5	2	SMA
1N5819WL	Schottky	40	1	25	1	0.45	1	SOD-123
BAV99W	Switch	75	0.3	2	2.5uA@75V	1.25	0.15	SOT-23
1N4148W	Switch	75	0.3	2	1uA@75V	1.25	0.15	SOD-123
LS4148W/WS	Switch	75	0.3	2	5uA@75V	1.25	0.15	1206/ 0805
HD06	Bridge	600	0.8	30	0.0005	1	0.4	HDDF
MMSZ5242B	Zener	V _Z =12V@20mA		-	1uA@9.1V	-	-	SOD-123



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	
L16ESD24VA2	160	24	0.05	55	3	35	SOD-523
L18ESD12VA2	180	12	0.05	30	6	75	SOD-523
L26ESD5V0A2	260	5	1	17	15	140	SOD-523
L30ESDL5V0C6-4	300	5	5	17.5	5	1.5 (typ)	SOT-23-6L
L50ESDL5V0H4-2	500	5	5	20	25	6 (typ)	SOT-143
L60ESDL2V8S8-4	600	2.8	1	17	30	6	SOP8



LSC Product Selection Guide

Transient Voltage Suppressor (TVS)

Device Uni-directional	Device Bi-directional	Working Peak Reverse Voltage	Breakdown voltage VBR Volts			Maximum Reverse Leakage at VRWM	Maximum Reverse Surge Current	Maximum Reverse Voltage at IRSM (Clamping Voltage)
		VRWM(Volts)	Min.	Max.	@IT(mA)	IR (uA)	IRSM(Amps)	VRSM(Volts)
SMAJ5.0A	SMAJ5.0CA	5.0	6.40	7.07	10	800	43.5	9.2
SMAJ8.0A	SMAJ8.0CA	8.0	8.89	9.83	1	50	29.4	13.6
SMAJ13A	SMAJ13CA	13.0	14.4	15.9	1	5	18.6	21.5
SMAJ54A	SMAJ54CA	54.0	60.0	66.3	1	5	4.6	87.1
SMAJ58A	SMAJ58CA	58.0	64.4	71.2	1	5	4.3	93.6



LSC Product Selection Guide

Transient Voltage Suppressor (TSPD)

Part Number	Rated Repetitive Off-State Voltage	Off-State Leakage Current @V _{DRM}	Breakover Voltage	On-State Voltage @ I _T =1A	Non-repetitive Peak impulse current @10/1000us	Non-repetitive peak On-state current @8.3ms (one-half cycle)	Breakover Current		Holding Current		Package
	V _{DRM}	I _{DRM}	V _{BO}	V _T	I _{PP}	I _{TSM}	I _{BO}		I _H		
	Min (V)	Max (uA)	Max (V)	Max. (V)	(A)	(A)	Min (mA)	Max (mA)	Min (mA)	Max (mA)	
TB2300L	190	5	265	3.5	50	25	50	800	150	800	SMB
TB2600L	220	5	300	3.5	50	25	50	800	150	800	SMB
TB3100L	275	5	350	3.5	50	25	50	800	150	800	SMB
TB3500L	320	5	400	3.5	50	25	50	800	150	800	SMB
TB2300M	190	5	265	3.5	80	40	50	800	150	800	SMB
TB2600M	220	5	300	3.5	80	40	50	800	150	800	SMB
TB3100M	275	5	350	3.5	80	40	50	800	150	800	SMB
TB3500M	320	5	400	3.5	80	40	50	800	150	800	SMB
TB2300H	190	5	265	3.5	100	50	50	800	150	800	SMB
TB2600H	220	5	300	3.5	100	50	50	800	150	800	SMB
TB3100H	275	5	350	3.5	100	50	50	800	150	800	SMB
TB3500H	320	5	400	3.5	100	50	50	800	150	800	SMB

1A Schottky Rectifier

Features

For surface mounted applications
 Very Low forward voltage drop
 High current capability
 Plastic material has UL flammability classification 94V-0
 For use in low voltage, high frequency inverters,
 free wheeling, and polarity protection applications

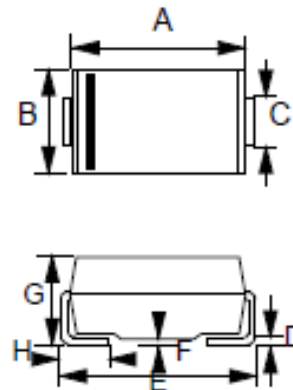
Applications

- PC Motherboard
- NB
- LCD Monitor/TV
- Telecom Equipment
- ADSL Modem
- Printer and other Peripheral Equipment

Mechanical Data

Case : Molded plastic
 Polarity : Indicated by cathode band
 Weight : 0.002 ounces, 0.064 grams

Application Circuit



SMA		
DIM.	MIN.	MAX.
A	4.06	4.57
B	2.29	2.92
C	1.27	1.63
D	0.15	0.31
E	4.83	5.59
F	0.05	0.20
G	2.01	2.40
H	0.76	1.52
All Dimensions in millimeter		



3A Schottky Rectifier

Features

For surface mounted applications
 Very Low forward voltage drop
 High current capability
 Plastic material has UL flammability classification 94V-0
 For use in low voltage, high frequency inverters,
 free wheeling, and polarity protection applications

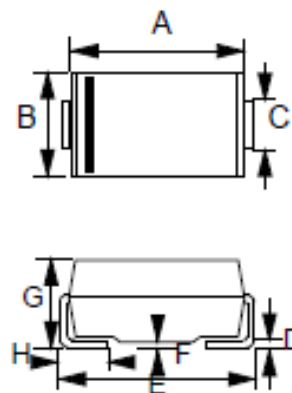
Applications

- PC Motherboard
- NB
- LCD Monitor/TV
- Telecom Equipment
- ADSL Modem
- Printer and other Peripheral Equipment

Mechanical Data

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E	4.83	5.59
F	0.05	0.20
G	2.01	2.40
H	0.76	1.52
All Dimensions in millimeter		

1N5819WL

1A Schottky Rectifier

Features

- Low Forward Voltage Drop
- High Surge Capability and High Current Capability
- For Surface Mounted Applications
- High Conductance
- Guard Ring Construction for Transient Protection

Applications

- PC Motherboard
- NB
- LCD Monitor/TV
- Telecom Equipment
- ADSL Modem
- Printer and other Peripheral Equipment

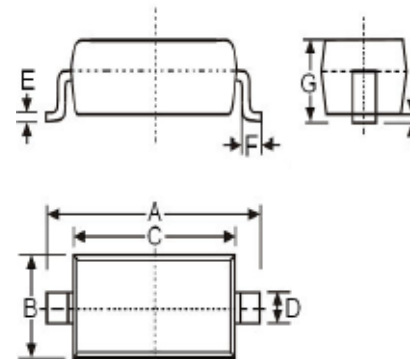
Mechanical Data

Case: SOD-123 Plastic

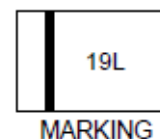
- Case Material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Moisture Sensitivity: Level 1 per J-STD-020D
- Lead Pb-Free in RoHS 2002/95/EC Compliant
- Weight: approx. 0.01 grams (approximate)

Application Circuit

SOD-123



SOD-123		
Dim.	Min.	Max.
A	3.55	3.85
B	1.40	1.70
C	2.55	2.85
D	0.55 Typical	
E	0.11 Typical	
F	0.25	—
G	—	1.35
H	—	0.10
All Dimensions in millimeter		



Features

- Fast switching speed
- Ideally suited for automatic insertion
- For general purpose switching applications

Applications

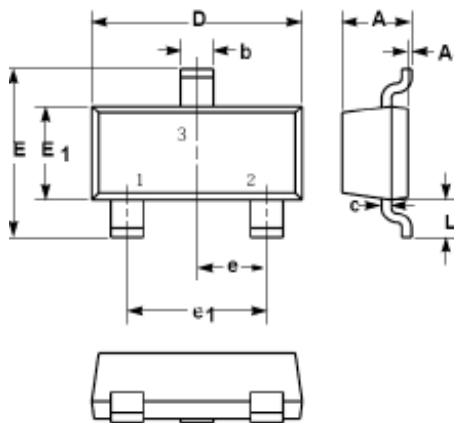
- PC Motherboard
- NB
- LCD Monitor/TV
- Telecom Equipment
- ADSL Modem
- Printer and other Peripheral Equipment

Mechanical Data

- Case: SOT-323 Plastic
- Case material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Moisture sensitivity: Level 1 per J-STD-020D
- Lead free in RoHS 2002/95/EC compliant

Application Circuit

SOT-323



SOT-323		
Dim.	Min.	Max.
A	0.90	1.10
A1	0.00	0.10
b	0.20	0.40
c	0.08	0.15
D	2.00	2.20
E	2.15	2.45
E1	1.15	1.35
e	0.65 Typ.	
e1	1.20	1.40
L	0.525 Ref.	
Dimensions in millimeter		

Features

- Fast switching speed
- Ideally suited for automatic insertion
- For general purpose switching applications

Applications

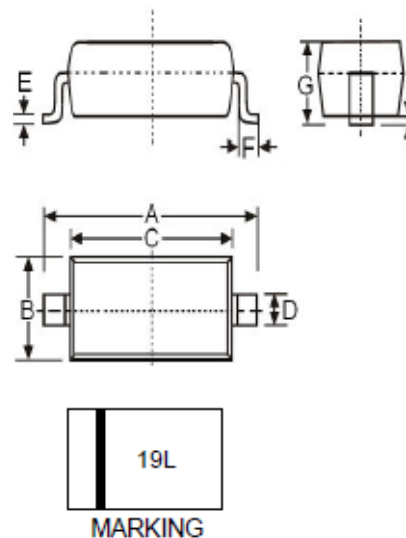
- PC Motherboard
- NB
- LCD Monitor/TV
- Telecom Equipment
- ADSL Modem
- Printer and other Peripheral Equipment

Mechanical Data

- Case: SOD-123 Plastic
- Case material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Moisture sensitivity: Level 1 per J-STD-020D
- Lead free in RoHS 2002/95/EC compliant
- Weight: approx. 4.3m grams

Application Circuit

SOD-123



SOD-123		
Dim.	Min.	Max.
A	3.55	3.85
B	1.40	1.70
C	2.55	2.85
D	0.55 Typical	
E	0.11 Typical	
F	0.25	—
G	—	1.35
H	—	0.10
All Dimensions in millimeter		

Fast Switching Diode

Features

- For surface mounted application
- Silicon epitaxial planar diode
- High speed switching
- Ultra small surface mount package
- Low leakage current

Applications

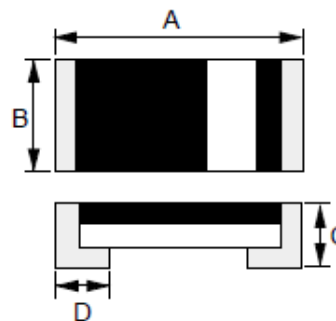
- Adaptor
- NB
- LCD Monitor/ TV
- Telecom Equipment
- ADSL Modem
- Communication and other Peripheral Equipment

Mechanical Data

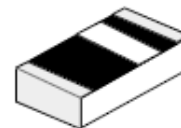
- Case : 1206
- Case Material: "Green" molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Terminals: Lead Free Plating
- Polarity : Color band denotes cathode
- Weight : Approx.10mg

Application Circuit

1206



1206		
Dim.	Min.	Max.
A	3.00	3.40
B	1.30	1.70
C	0.75	0.95
D	0.35	0.75
All Dimensions in millimeter		



Glass Passivation Bridge Rectifier

Features

Rating to 1000V PRV
 Ideal for printed circuit board
 Reliable low cost construction utilizing molded plastic technique results in inexpensive product
 The plastic material has UL recognition File #E95060

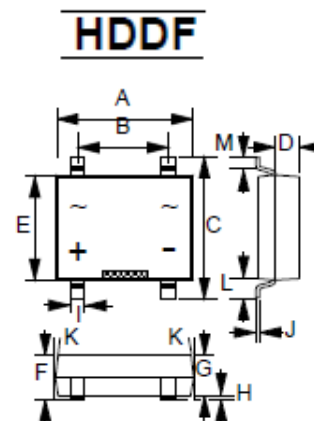
Mechanical Data

Polarity : Symbol molded on body
 Weight : 0.0044 ounces, 0.125 grams
 Mounting position : Any

Applications

- Adaptor
- NB
- LCD Monitor/ TV
- ADSL Modem
- Setup Box
- Communication and other Peripheral Equipment

Application Circuit



HDDF		
DIM.	MIN.	MAX.
A	4.50	4.90
B	2.30	2.70
C	—	7.00
D	1.20	1.60
E	3.60	4.00
F	—	3.00
G	2.30	2.70
H	—	0.20
I	0.50	0.80
J	0.15	0.35
K	5° TYPICAL	
L	1.30	1.70
M	0.70	1.10
All Dimensions in millimeter		

MMSZ52xxB

Zener Diode SOD-123

Features

- Planar die construction
- 500mW power dissipation rating
- Ultra-small surface mount package

Applications

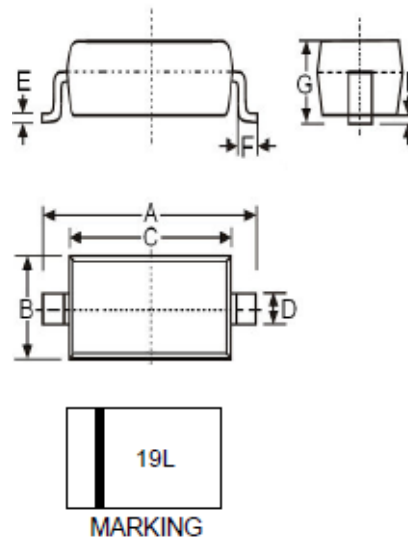
- NB/ MB
- LCD Monitor/ TV
- ADSL Modem
- Setup Box
- Communication and other Peripheral Equipment

Mechanical Data

- Case: SOD-123 Plastic
- Case Material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Moisture Sensitivity: Level 1 per J-STD-020D
- Lead Free in RoHS 2002/95/EC Compliant

Application Circuit

SOD-123



SOD-123		
Dim.	Min.	Max.
A	3.55	3.85
B	1.40	1.70
C	2.55	2.85
D	0.55 Typical	
E	0.11 Typical	
F	0.25	—
G	—	1.35
H	—	0.10
All Dimensions in millimeter		

L16ESD24VA2

160W 24V Directional in SOD523

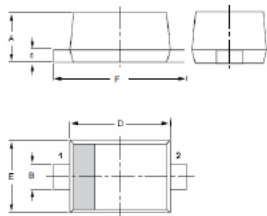
Features

- Protection of Single Line
- Max. Peak Pulse Power is 160Watts @ 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
- 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



L18ESD12VA2

180W 12V Directional in SOD523

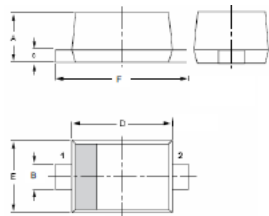
Features

- 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



L26ESD5V0A2

260W 5V Directional in SOD523

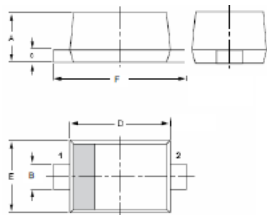
Features

- Protection of Single Line
- Max. Peak Pulse Power is 260Watts @ 8/20us
- Low Clamping Voltage is 17V
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact
- IEC 61000-4-5 (Surge), IPP=15A @8/20us

Applications

- Computers and Peripherals
- Communication System
- 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



L30ESDL5V0C6-4

4CH Level 1 Surge Protection

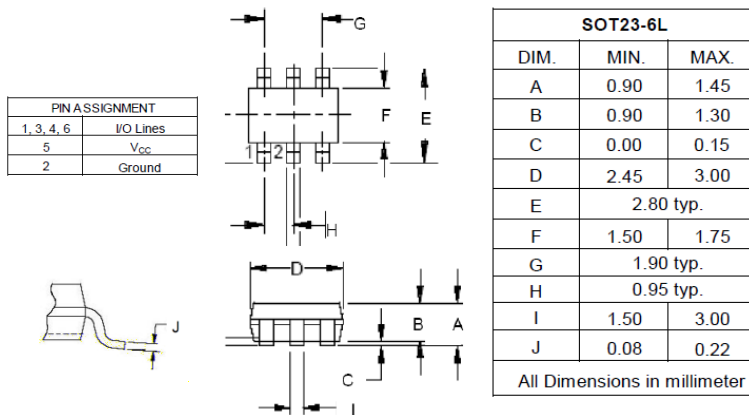
Features

- Protects Up to Four I/O Line & Power Line
- Low Capacitance : 0.3pF typical (I/O to I/O)
- Low Clamping Voltage
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact

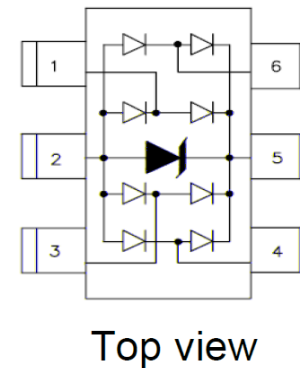
Applications

- HDMI
- DVI
- USB2.0/3.0
- USB OTG
- IEEE 1394 Firewire Port
- D-SUB

Package & Dimension



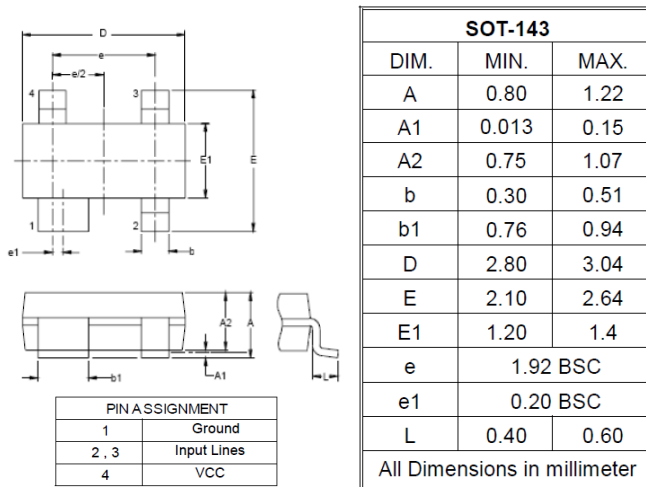
Layout



Features

- Protects of Two I/O Line
- Max. Peak Pulse Power is 500Watts @ 8/20us
- Low Capacitance is 7.4pF (Typical)
- Low Clamping Voltage
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact
- IEC 61000-4-5 (Surge), IPP=25A @ 8/20us

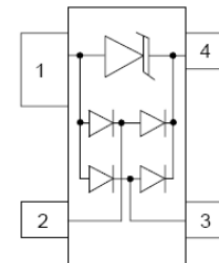
Package & Dimension



Applications

- Ethernet 10/100 Base T
- Cellular Phones
- Video Line Protection
- USB Interface
- WAN/LAN Equipment

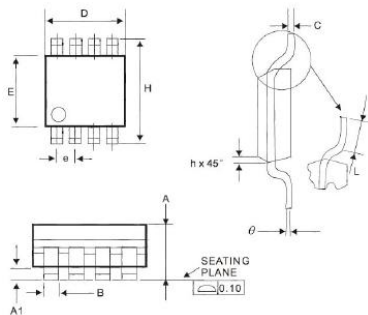
Layout



Features

- Protects of Two I/O Line
- Max. Peak Pulse Power is 500Watts @ 8/20us
- Low Capacitance is 7.4pF (Typical)
- Low Clamping Voltage
- IEC 61000-4-2, Level 4 (ESD), >±15KV by Air, >±8KV by Contact
- IEC 61000-4-5 (Surge), IPP=25A @ 8/20us

Package & Dimension

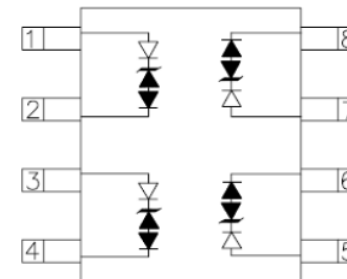


SOP-8		
DIM.	MIN.	MAX.
A	1.35	1.75
A1	0.10	0.25
B	0.35	0.49
C	0.18	0.25
D	4.80	5.00
E	3.80	4.00
H	5.80	6.20
h	0.25	0.50
e	1.27 BSC	
L	0.40	1.25
All Dimensions in millimeter		

Applications

- Ethernet 10/100 Base T
- Cellular Phones
- Video Line Protection
- USB Interface
- WAN/LAN Equipment

Layout

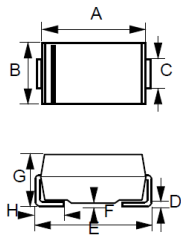


SMAJ Series *400W Surface TVS*

Features

- For Surface Mounted Applications
- Reliable Low Cost Construction Utilizing Molded Plastic Technique
- Plastic Material Has UL Flammability Classification 94V-O
- Typical IR Less than 1uA Above 10A
- Fast Response Time : Typically Less than 1ns for Uni-direction, Less than 5ns for Bi-direction from 0 voltage to BV min.

Package & Dimension



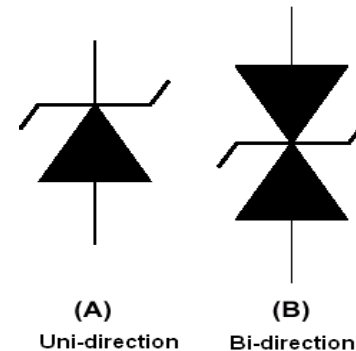
SMA		
DIM.	MIN.	MAX.
A	4.06	4.57
B	2.29	2.92
C	1.27	1.63
D	0.15	0.31
E	4.83	5.59
F	0.05	0.20
G	1.96	2.40
H	0.76	1.52

All Dimensions in millimeter

Characteristics

- Stand Off Voltage is 4.0V to 200V
- Power Dissipation is 400W
- Peak Forward Surge Current 40A
- Steady State Power Dissipation 1.0W
- Maximum Instantaneous Forward Voltage 3.5V

Layout



58~360V 100A Thyristor Surge Protective Device

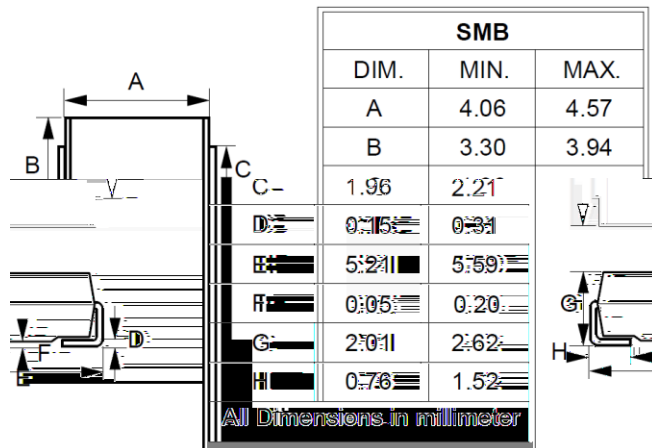
Features

- Oxide Glass Passivated Junction
- Bidirectional Protection in a Single Device
- Surge Capabilities up to 100A @ 10/1000us or 400A @ 8/20us
- High Off State Impedance and Low on State Voltage
- Plastic Material has UL Flammability Classification 94V-0

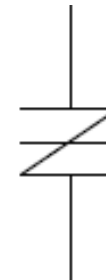
Characteristics

- Non-repetitive Peak Impulse Current @ 10/1000us is 100A
- Non-repetitive Peak On-state Current @ 8.2ms is 50A
- Junction Temperature Range is -40 to +150°C
- Storage Temperature Range is -55 to +150°C

Package & Dimension



Layout



58~360V 50A Thyristor Surge Protective Device

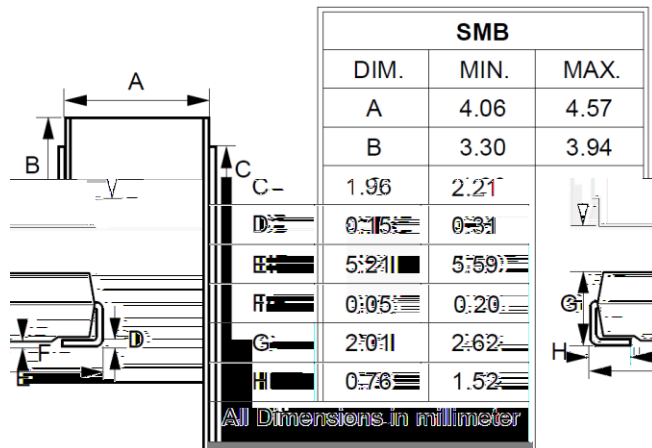
Features

- Oxide Glass Passivated Junction
- Bidirectional Protection in a Single Device
- Surge Capabilities up to 80A @ 10/1000us or 250A @ 8/20us
- High Off State Impedance and Low on State Voltage
- Plastic Material has UL Flammability Classification 94V-0

Characteristics

- Non-repetitive Peak Impulse Current @ 10/1000us is 80A
- Non-repetitive Peak On-state Current @ 8.2ms is 40A
- Junction Temperature Range is -40 to +150°C
- Storage Temperature Range is -55 to +150°C

Package & Dimension



Layout

