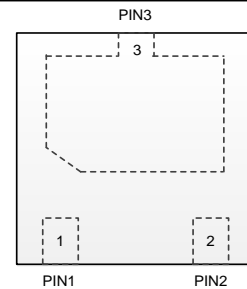
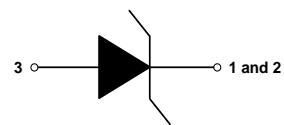


**ESD56161D30**
**1 Line, Uni-directional, Transient Voltage Suppressor**
<http://www.omnivision-group.com>
**Descriptions**

The ESD56161D30 is a Uni-directional TVS (Transient Voltage Suppressor). It is specifically designed to protect sensitive electronic components which are connected to power lines, from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transient) and Lightning.

The ESD56161D30 may be used to provide ESD protection up to  $\pm 30\text{kV}$  (contact and air discharge) according to IEC61000-4-2, and withstand peak pulse current up to 175A (8/20 $\mu\text{s}$ ) according to IEC61000-4-5.

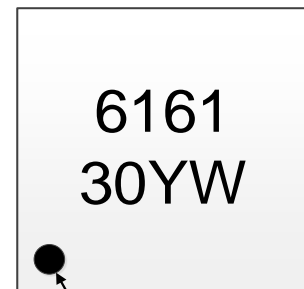
The ESD56161D30 is available in DFN2x2-3L package. Standard products are Pb-free and Halogen-free.


**DFN2x2-3L**

**Circuit diagram**
**Features**

- Reverse stand-off voltage: 30V Max.
- Transient protection for each line according to IEC61000-4-2 (ESD):  $\pm 30\text{kV}$  (contact and air discharge)  
IEC61000-4-4 (EFT): 80A (5/50ns)  
IEC61000-4-5 (surge): 175A/150A (8/20 $\mu\text{s}$ )
- Capacitance:  $C_J = 255\text{pF}$  @ 1MHz & 2V typ.
- Low clamping voltage
- Solid-state silicon technology

**Applications**

- Power lines
- Cellular handsets
- Tablets
- Microprocessors
- Portable Electronics

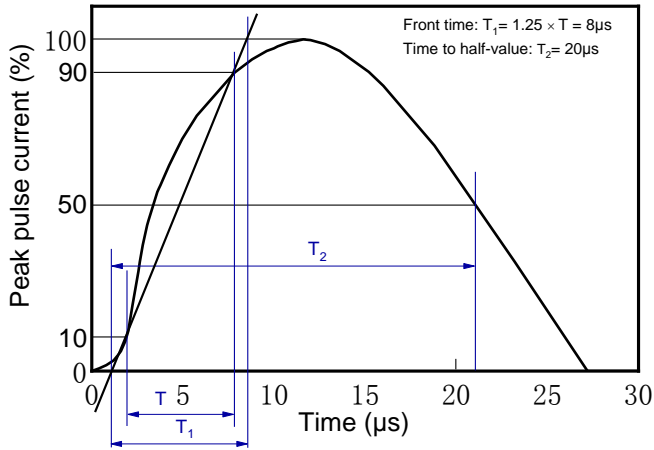
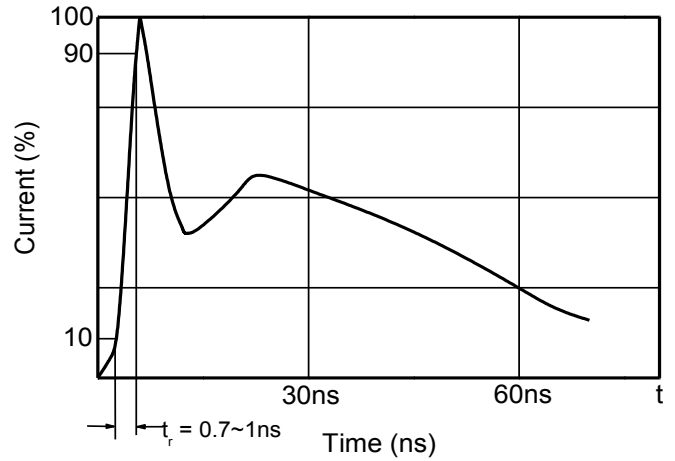
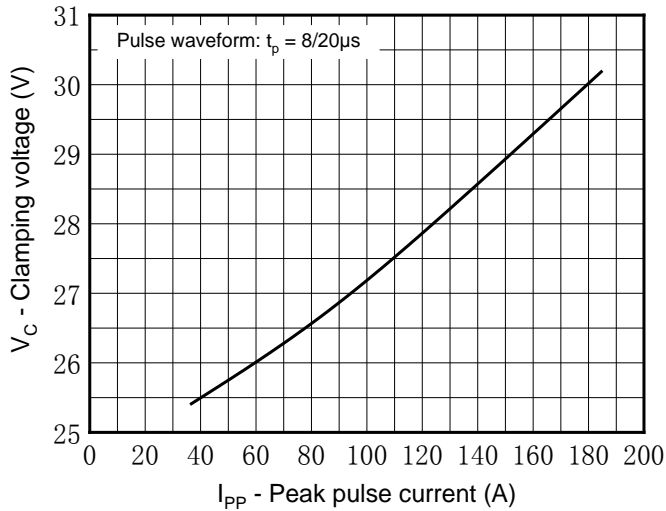
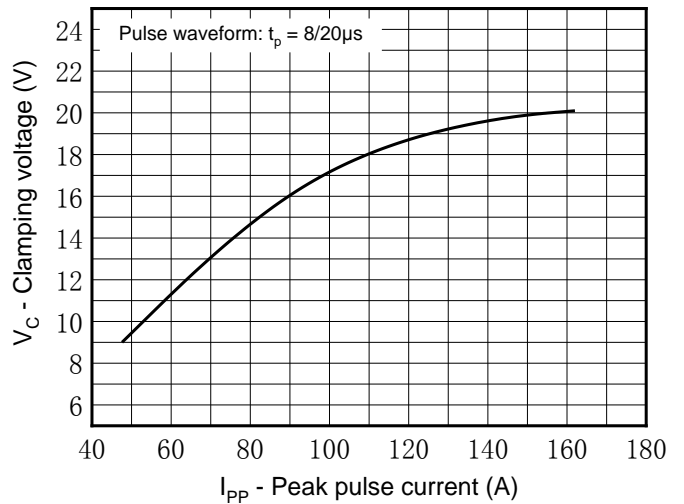
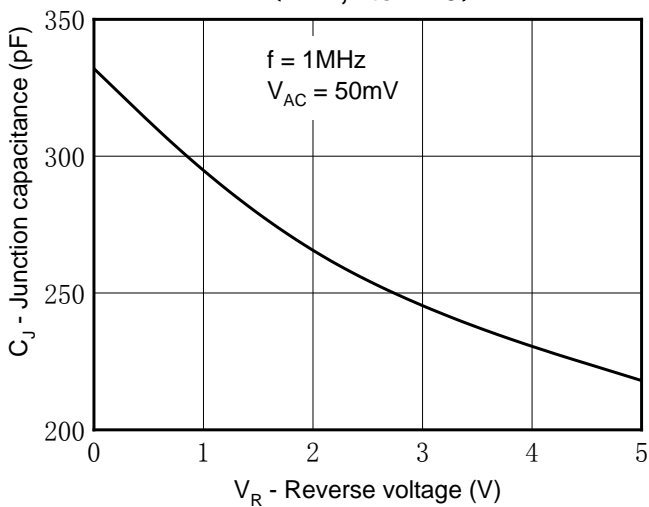
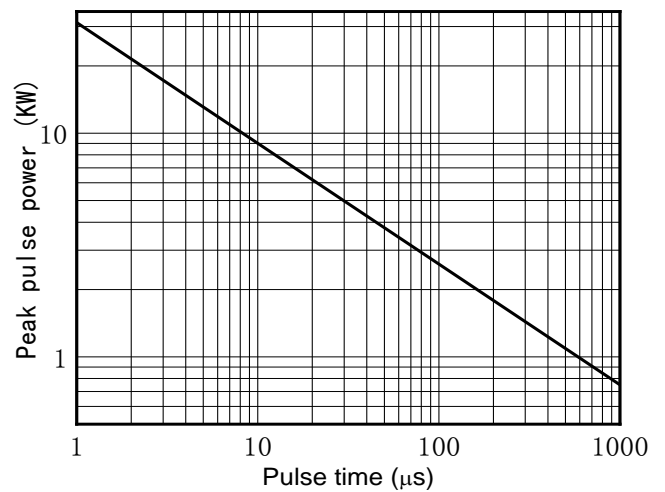


6161 = Series code  
30 = Device code  
YW = Date code

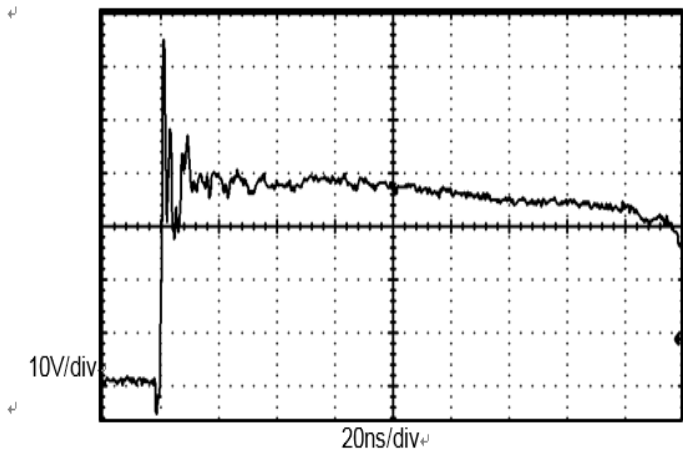
**Marking (Top View)**
**Order information**

Device	Package	Shipping
ESD56161D30-3/TR	DFN2x2-3L	3000/Tape&Reel

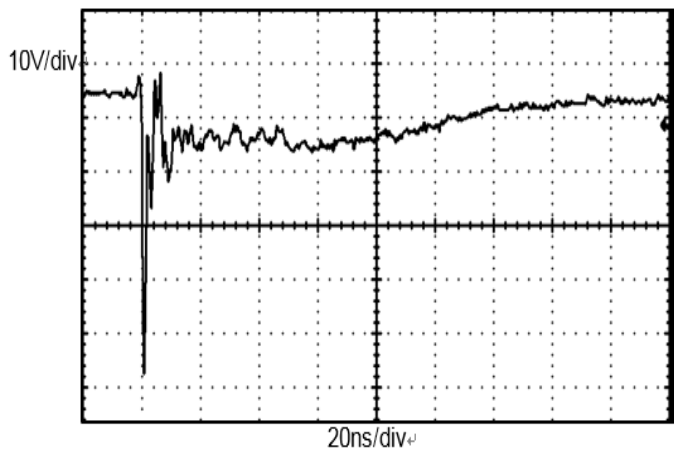


**Typical characteristics ( $T_A=25^\circ\text{C}$ , unless otherwise noted)**

**8/20 $\mu\text{s}$  waveform per IEC61000-4-5**

**Contact discharge current waveform per IEC61000-4-2**

**Clamping voltage vs. Peak pulse current  
(Pin1,2 to Pin3)**

**Clamping voltage vs. Peak pulse current  
(Pin3 to Pin1,2)**

**Capacitance vs. Reverse voltage**

**Non-repetitive peak pulse power vs. Pulse time**

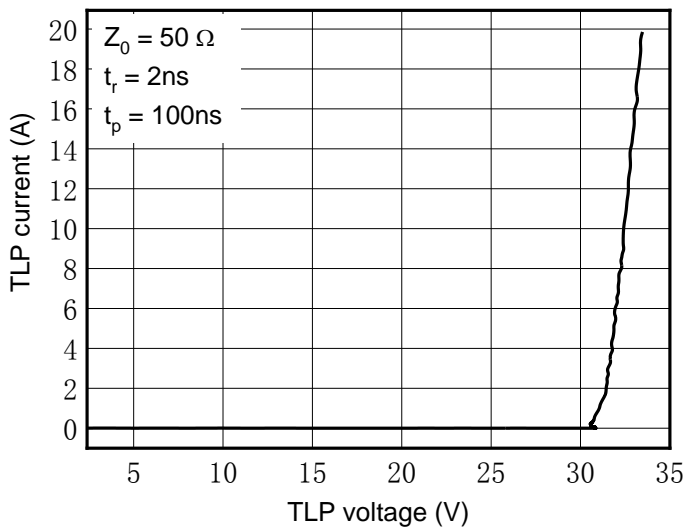
Typical characteristics ( $T_A = 25^\circ\text{C}$ , unless otherwise noted)



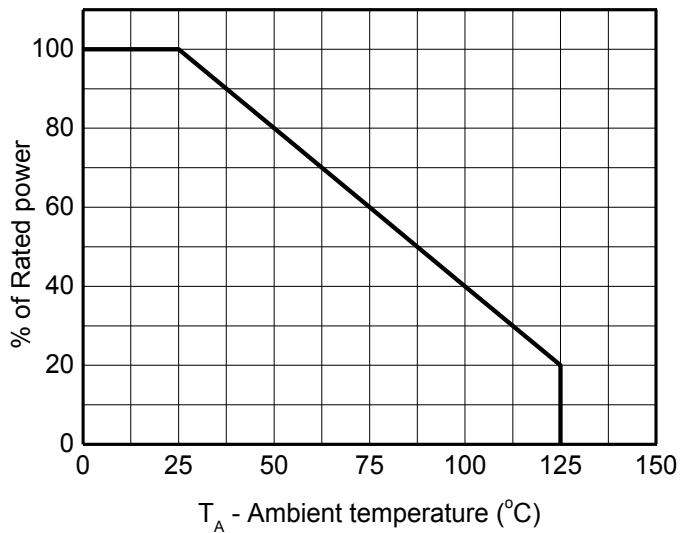
**ESD clamping**  
 (+8kV contact discharge per IEC61000-4-2)



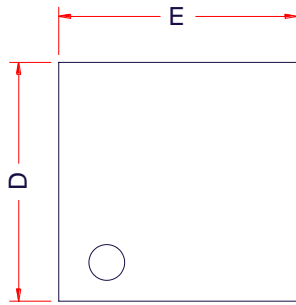
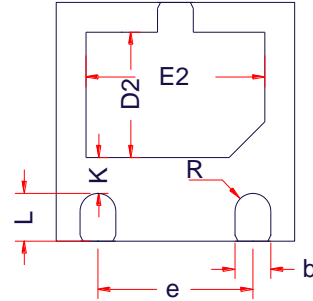
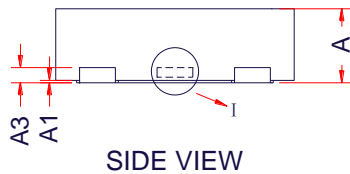
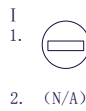
**ESD clamping**  
 (-8kV contact discharge per IEC61000-4-2)



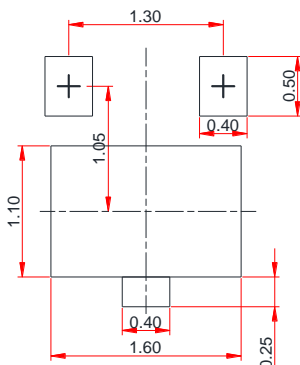
**TLP Measurement**



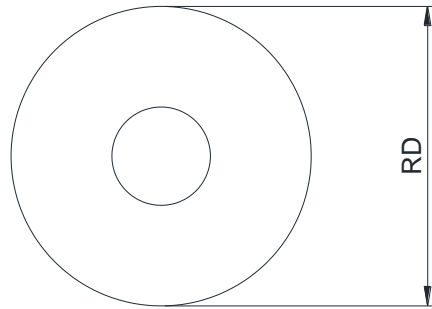
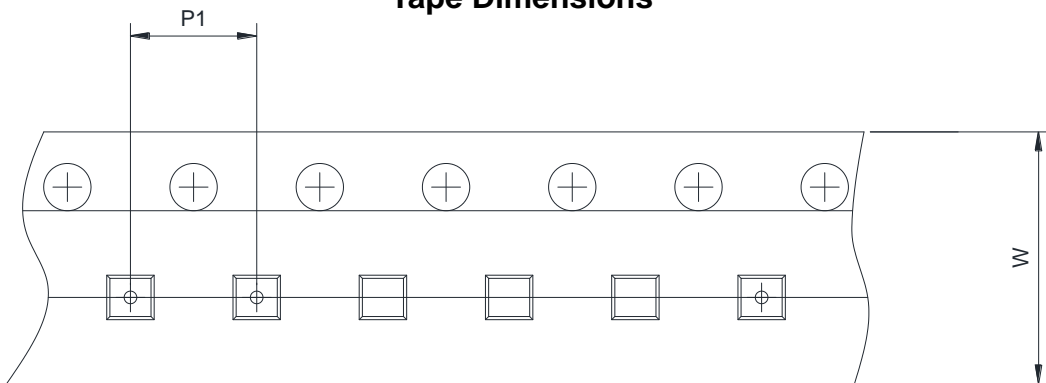
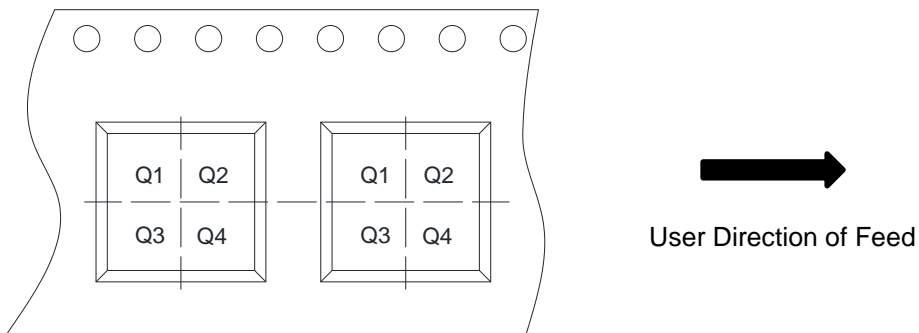
**Power derating vs. Ambient temperature**

**PACKAGE OUTLINE DIMENSIONS**
**DFN2x2-3L**

**TOP VIEW**

**BOTTOM VIEW**

**SIDE VIEW**


Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.50	0.58	0.65
A1	0.00	0.02	0.05
A3	0.127Ref.		
b	0.25	0.30	0.35
D	1.90	2.00	2.10
E	1.90	2.00	2.10
D2	0.95	1.05	1.15
E2	1.40	1.50	1.60
e	1.20	1.30	1.40
R	0.13	-	-
L	0.33	0.39	0.45
K	0.20	-	-

**Recommend PCB Layout (Unit: mm)**

**Notes:**

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

**TAPE AND REEL INFORMATION**
**Reel Dimensions**

**Tape Dimensions**

**Quadrant Assignments For PIN1 Orientation In Tape**


RD	Reel Dimension	<input checked="" type="checkbox"/> 7inch	<input type="checkbox"/> 13inch	
W	Overall width of the carrier tape	<input checked="" type="checkbox"/> 8mm	<input type="checkbox"/> 12mm	
P1	Pitch between successive cavity centers	<input type="checkbox"/> 2mm	<input checked="" type="checkbox"/> 4mm	<input type="checkbox"/> 8mm
Pin1	Pin1 Quadrant	<input type="checkbox"/> Q1	<input checked="" type="checkbox"/> Q2	<input type="checkbox"/> Q3 <input type="checkbox"/> Q4