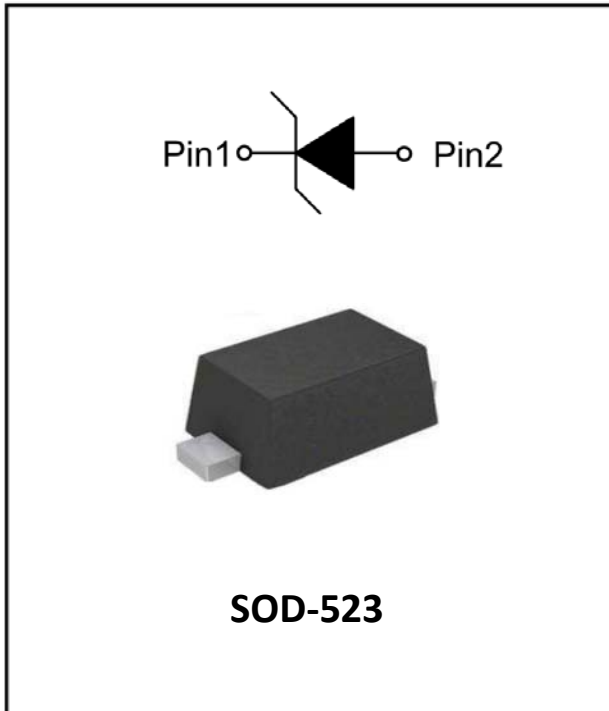


## 1- Line, Uni-directional, Transient Voltage Suppressor



### Features

- Stand-off voltage: 24V Max
- Transient protection for each line according to  
IEC61000-4-2(ESD):  $\pm 30\text{kV}$  (contact)  
IEC61000-4-5(surge): 7A (8/20 $\mu\text{s}$ )
- Low leakage current:
- Ultra low clamping voltage
- RoHS Compliant

### Applications

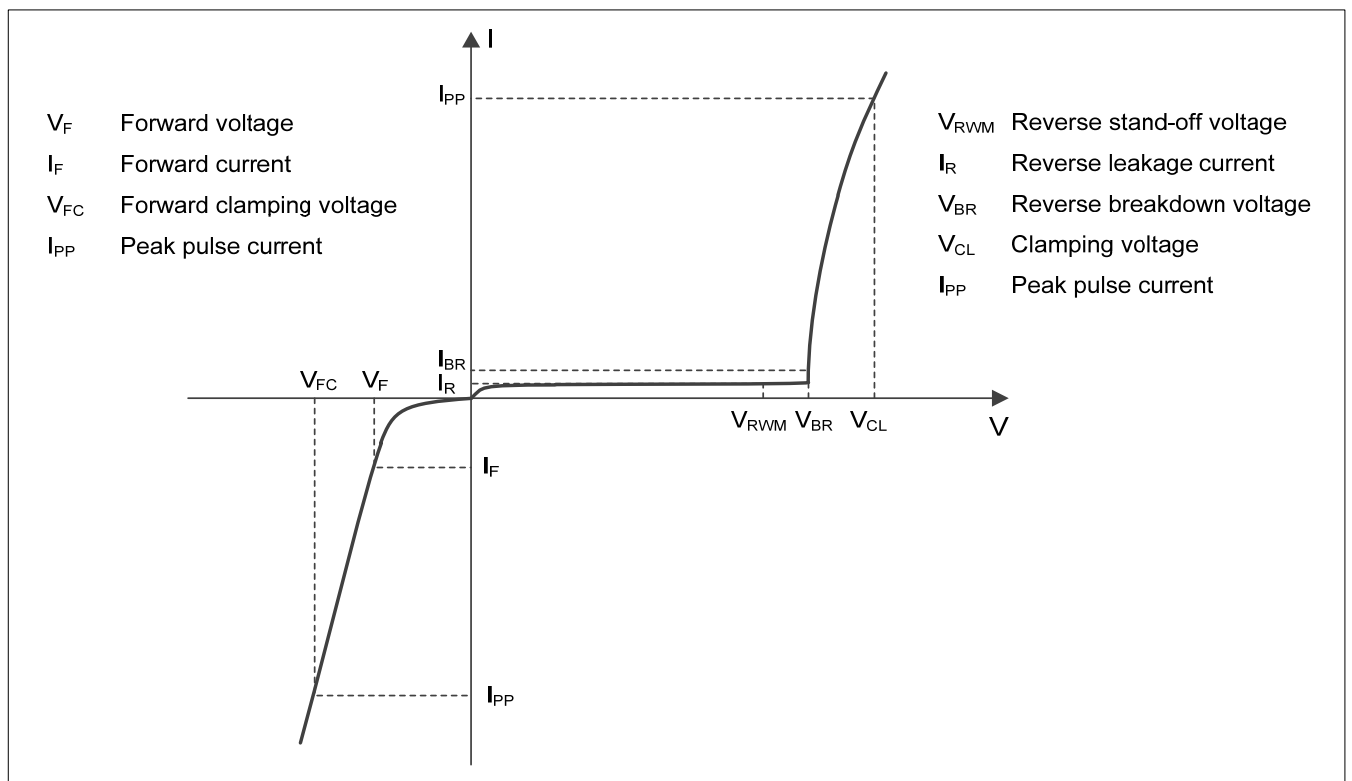
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players

### Mechanical Data

- Package: SOD-523
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below



### ■Definitions of electrical characteristics





# ESD24VD5

## ■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ( $t_p = 8/20\mu s$ )	$P_{pk}$	300	W
Peak pulse current ( $t_p = 8/20\mu s$ )	$I_{PP}$	7	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 30$	KV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	
Junction temperature	$T_J$	125	$^{\circ}C$
Operating temperature	$T_{OP}$	-40~85	$^{\circ}C$
Storage temperature	$T_{STG}$	-55~150	$^{\circ}C$

## ■Electrical Characteristics ( $T_a=25^{\circ}C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	$V_{RWM}$	V				24
Reverse leakage current	$I_R$	$\mu A$	$V_{RWM} = 24V$			0.5
Reverse breakdown voltage	$V_{BR}$	V	$I_{BR} = 1mA$	25		32
Clamping voltage <sup>1)</sup>	$V_{CL}$	V	$I_{PP} = 16A, t_p = 100ns$		33	
Dynamic resistance <sup>1)</sup>	$R_{DYN}$	$\Omega$			0.36	
Clamping voltage <sup>2)</sup>	$V_{CL}$	V	$I_{PP} = 1A, t_p = 8/20\mu s$		27	32
		V	$I_{PP} = 7A, t_p = 8/20\mu s$		37	44
Junction capacitance	$C_J$	pF	$V_R = 0V, f = 1MHz$		36	50

Notes:

- (1). TLP parameter:  $Z_0 = 50\Omega, t_p = 100ns, t_r = 2ns$ , averaging window from 60ns to 80ns.  $R_{DYN}$  is calculated from 4A to 16A.  
(2). Non-repetitive current pulse, according to IEC61000-4-5.

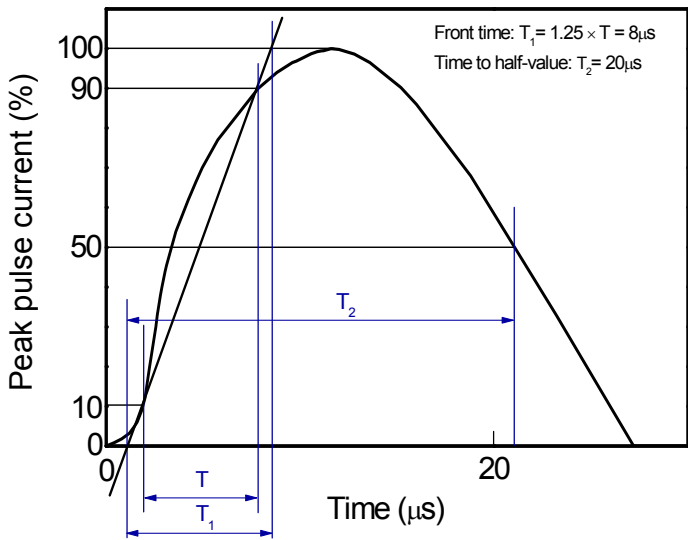
## ■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD24VD5	F2	Approximate 2	8000	80000	320000	7" reel

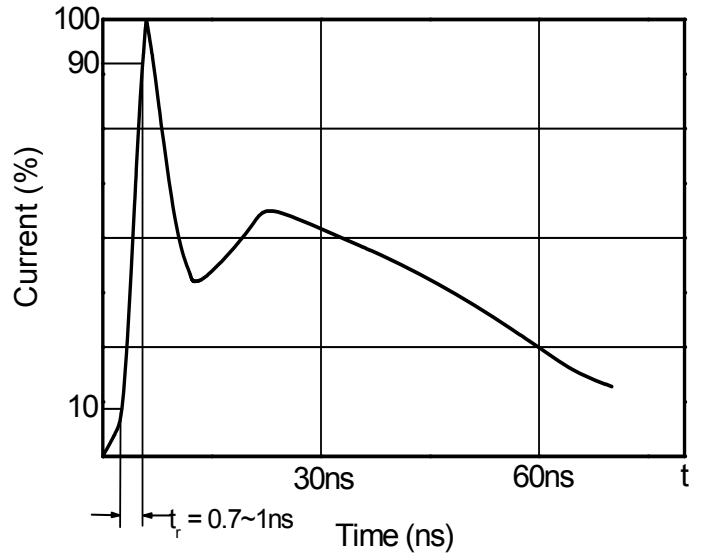


## ■ Characteristics (Typical)

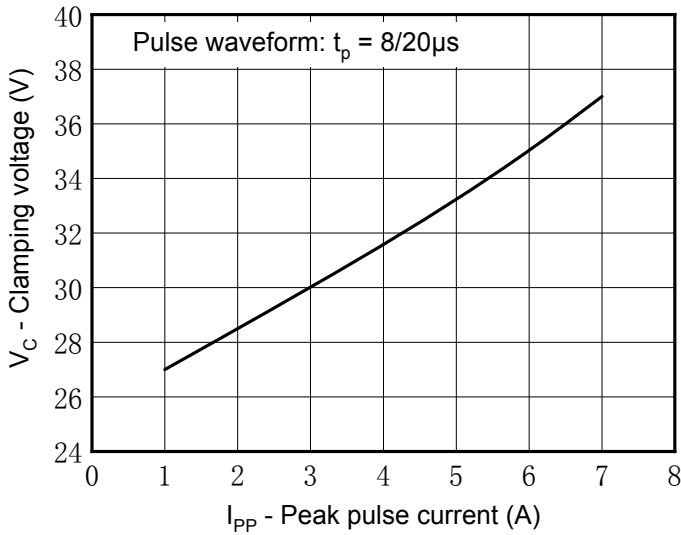
### 8/20 $\mu$ s waveform per IEC61000-4-5



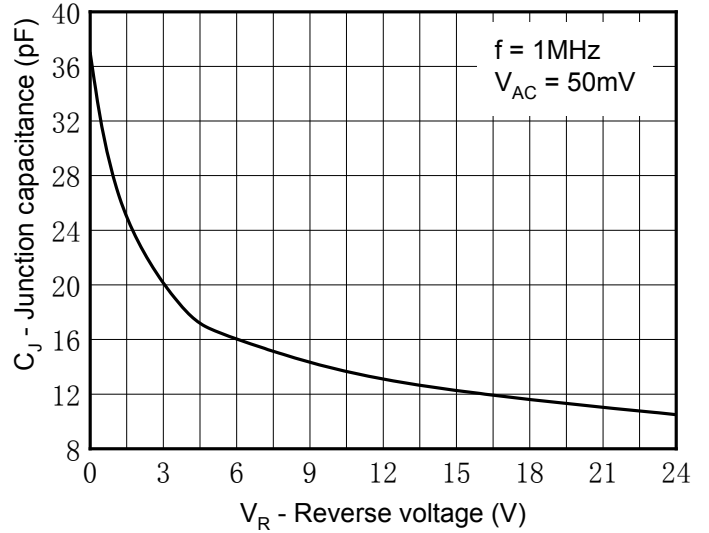
### Contact discharge current waveform per IEC61000-4-2



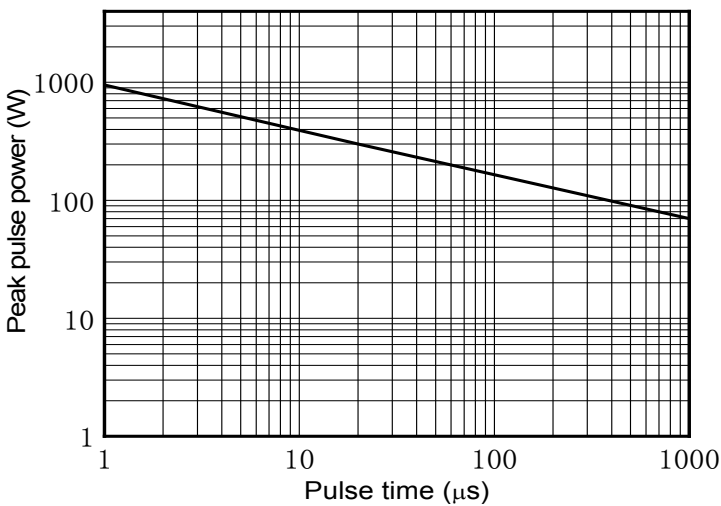
### Clamping voltage vs. Peak pulse current



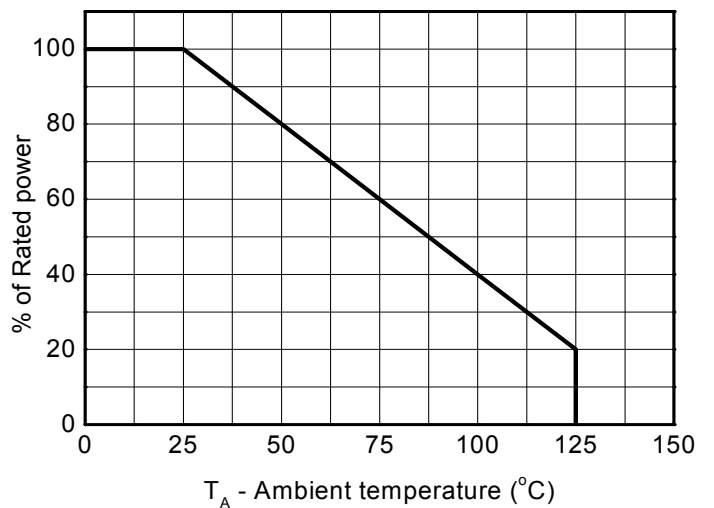
### Capacitance vs. Reverse voltage



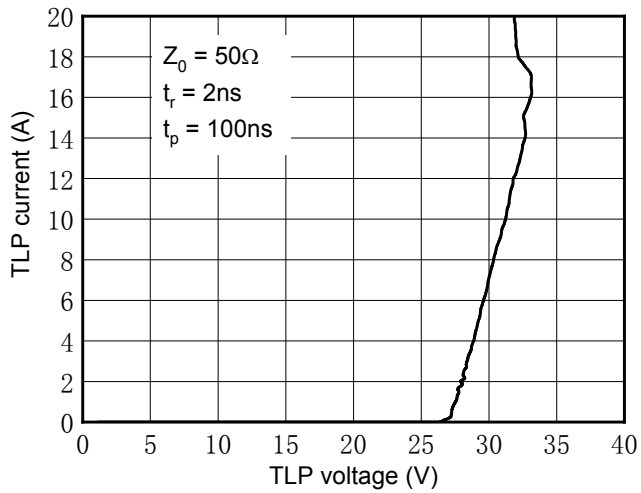
### Non-repetitive peak pulse power vs. Pulse time



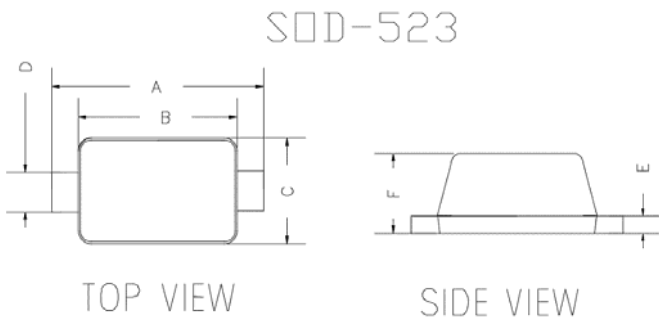
### Power derating vs. Ambient temperature



## TLP Measurement

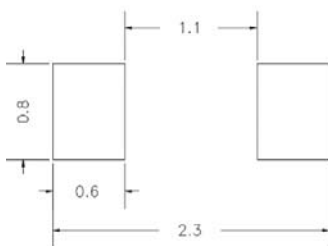


## ■ Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.059	0.067	1.500	1.700
B	0.043	0.051	1.100	1.300
C	0.028	0.035	0.700	0.900
D	0.010	0.014	0.250	0.350
E	0.002	0.008	0.050	0.200
F	0.020	0.028	0.500	0.700

## ■ Soldering Footprint



UNIT : mm

SUGGESTED SOLDER PAD LAYOUT



## ESD24VD5

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