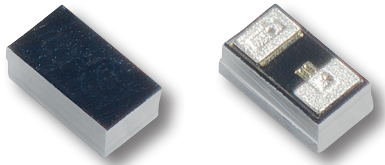


INDUSTRY FIRST UNIDIRECTIONAL ESD PROTECTION IN A 01005 TYPE PACKAGE



SP3145 represents an industry first: unidirectional ESD protection in a 01005 type package. Unidirectional protection should be favored over bi directional performance, particularly on logic and data lines, which typically do not transit zero volts during standard operation.

Fast-acting, semiconductor based technology can withstand multiple ESD events, without wear-out or degradation. Low nominal capacitance makes this product meaningful for interfaces running at high data rates, approaching 5 GHz clock speeds.

SP1043 and SP1044 are devices using a proprietary silicon avalanche technology to protect each I/O pin to provide a high level of protection for electronic equipment that may experience destructive electrostatic discharges (ESD). These robust diodes can safely absorb repetitive ESD strikes at ± 12 kV (contact discharge, IEC 61000-4-2) without performance degradation.

FEATURES

- Unidirectional protection device in industry's smallest footprint. Low capacitance offers good data integrity performance.
- Promotes high ESD immunity and superior protection
- Low dynamic resistance
- Permits low standoff

APPLICATIONS

- Unidirectional protection should be favored over bi directional performance, particularly on logic and data lines, which typically do not transit zero volts during standard operation. Also 0.230 mm x 0.430 mm footprint helps save PCB area /cost
- ESD protection beyond the maximum rating in the IEC61000-4-2 standard gives customers more design margin and higher end product reliability in the field
- Supports low clamping voltage needed for protecting modern electronics filled with small geometry ICs
- Standoff voltages enable protection of 95 % of all interfaces

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
ELECTRICAL CHARACTERISTICS (T_{op}=25°C)						
Reverse Standoff Voltage	V _{RWM}				3.3	V
Breakdown Voltage	V _{BR}	I _R =1mA	7.5			V
Forward Voltage	V _F	I _T =1mA	0.5	0.7	1.0	V
Leakage Current¹	I _{LEAK}	V _R =1.5V with 1 pin at GND	<1		5	nA
		V _R =-2.8V with 1 pin at GND	2.0		20	
Clamp Voltage¹	V _C	I _{pp} =1A, t _p =8/20μs, Fwd	11.5			V
Dynamic Resistance²	R _{DYN}	TLP, t _p =100ns, 1/0 to GND	3.5			Ω
ESD Withstand Voltage¹	V _{ESD}	IEC 61000-4-2 (Contact D1scharge)	±20			kV
		IEC 61000-4-2 (Air Discharge)	±25			kV
Diode Capacitance¹	C _D	Reverse Bias=0V	0.35	0.65		pF