



PROTECTION PRODUCTS

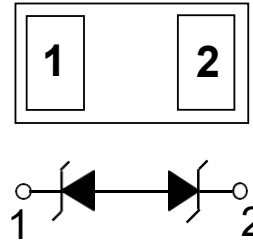
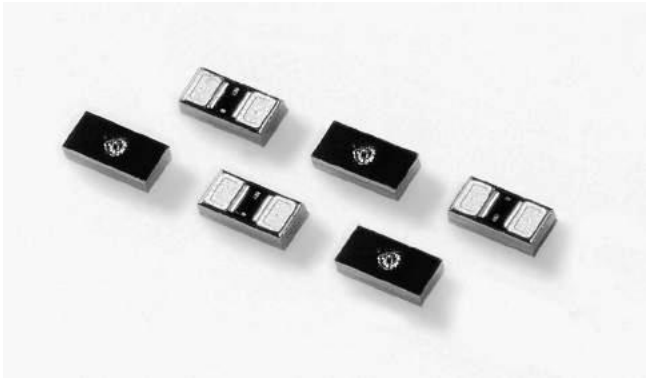
Feature:

- ESD, IEC61000-4-2, $\pm 30\text{kV}$ contact, $\pm 30\text{kV}$ air
- EFT, IEC61000-4-4, 40A(5/50ns)
- IEC 61000-4-5, 2ndEdition: 8/20 Surge, 10A Surge Immunity
- Low capacitance of 30pF(@ VR=0V)
- Low leakage current of 0.1 μA at 5V
- Space efficient 0201 footprint
- Halogen free, lead-free and RoHS compliant.

Application:

- Mobile phones
- Smart phones
- Camcorders
- PDA
- Digital cameras
- MP3/PMP
- Portable navigation devices
- Portable medical
- Point of sale terminals

Circuit Diagram & Pin Configuration:



DEVICE MARKING AND ORDERING INFORMATION

Device	Package	Shipping
ESD1009-02	0201	10000/Tape&Reel



Ordering Information per line@25°C(unless otherwise specified)

Parameter	Symbol	Rating	Unit
Peak pulse power (tp = 8/20μs)	Ppk	200	W
ESD Protection – Contact Discharge, per IEC 61000-4-2	VESD_CONTACT	±30	KV
ESD Protection – Air Discharge, per IEC 61000-4-2	VESD_AIR	±30	
Junctiontemperature	TJ	125	°C
Operating temperature	TOP	-40~85	°C
Lead temperature	TL	260	°C
Storage temperature	TSTG	-55~150	°C

Electrical Characteristics per line@25°C(unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Working Voltage	VRWM	—	—	6.0	V	
Reverse Breakdown Voltage	VBR	7.0	8.5	9.5	V	IR = 1mA,
Reverse Leakage Current	IR	—	0.1	0.5	uA	VR = 5.0V,
Clamping Voltage	VC	—	9.3	—	V	IPP = 1.0A, 8/20μs,
Clamping Voltage	VC	—	10.0	—	V	IPP = 2.0A,8/20μs,
Clamping Voltage	VC	—	15.6	—	V	IPP = 10A,8/20μs,
Junction Capacitance	CJ	—	30	—	pF	VR = 0V, f = 1MHz, Any I/O pin to Ground

Note: Electrical parameters are only for die, performance may alter after assembly.



Typical Characteristics

Fig 1. 8/20 ms pulse waveform according to IEC 61000-4-5

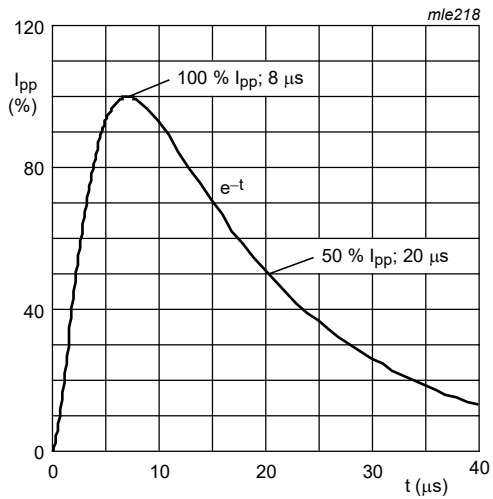
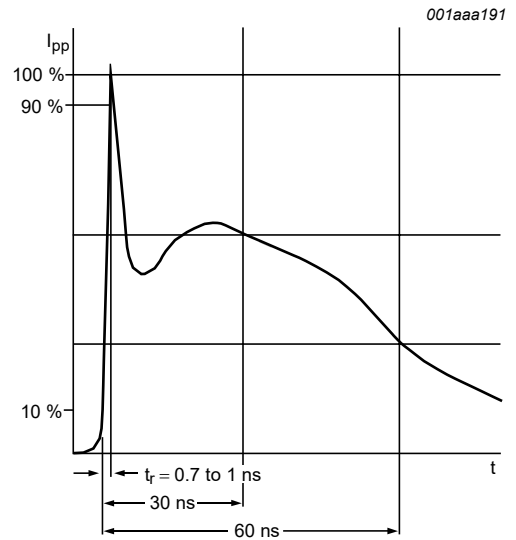
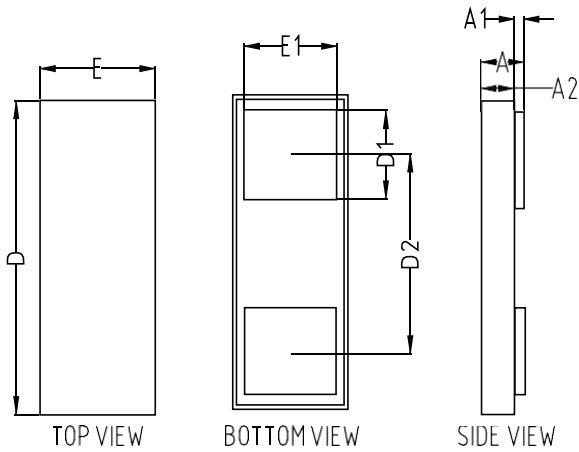


Fig 2. ElectroStatic Discharge (ESD) pulse waveform according to IEC 61000-4-2

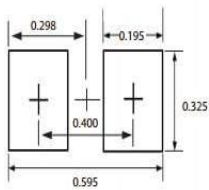




Package Dimensions — 0201 Flipchip



Symbol	0201 Flipchip			
	Millimeters		Inches	
	Min	Max	Min	Max
D	0.605	0.655	0.023819	0.025787
E	0.305	0.355	0.012008	0.013976
D1	0.145	0.155	0.005709	0.006102
E1	0.245	0.255	0.009646	0.010039
D2	0.4 BSC		0.0157 BSC	
A	0.273	0.329	0.010748	0.012953
A2	0.265	0.315	0.010433	0.012402
A1	0.008	0.014	0.000315	0.000551



Recommended Soldering Pad Layout (mm)



NOTICE

The information presented in this document is for reference only. HSMelect reserves the right to make changes without notice for the specification of the products displayed herein.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), HSMelect Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <http://www.hsmelect.com> , or consult your nearest HSMelect' s sales office for further assistance.