Description

ASM12FB is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With typical capacitance of 7pF only, ASM12FB is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD) (±25kV air, ±25kV contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc. ASM12FB uses ultra-small DFN1006 package. Each ASM12FB device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

Features

- IEC 61000-4-2 (ESD)
  - ±25kV Contact Discharge
  - ±25kV Air Discharge
- IEC 61000-4-4 EFT Protection
  - 40A (5/50ns)
- Package optimized for high-speed lines
- Protects one data, control line
- Low leakage current
- AEC-Q101 qualified
- Low leakage current

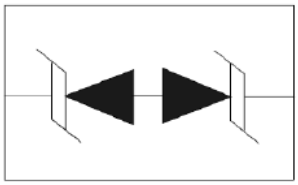
Mechanical Characteristics

- DNF1006
- ROHS/ Compliant
- Halogen free
- Molding compound flammability rating: UL94V-0
- Marking: Part number
- Packing: Tape and Reel per EIA 481

Applications

- Series SATA
- Cellular Phones
- MDDI Ports
- Notebooks / Desktops / Servers
- USB Data Line Protection
- Display Ports & Digital Visual Interfaces (DVI)

Pin Configuration



Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
ASL05FU	DNF1006	2C	Halogen free	Tape & Reel	10000 PCS	UL 94V-0	7 inches

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Pulse Power (8/20μs)	P_{PP}	150	W
Operating Temperature	T_J	-55/+125	°C
Storage Temperature	T_{STG}	-55/+150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	Typ.	MAX.	Units
Reverse Stand-off Voltage	V_{RWM}				12	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	13.5			V
Reverse Leakage Current	I_R	V_{RWM}=12V			1	μA
Peak Pulse Current	I_{PP}	tp=8/20us			6	V
Clamping Voltage	V_C	I_{PP}=1A; tp=8/20us			16	V
Clamping Voltage	V_C	I_{PP}=6A; tp=8/20us			25	V
Junction Capacitance	C_J	VR=0V; f=1MHz		7		pF

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

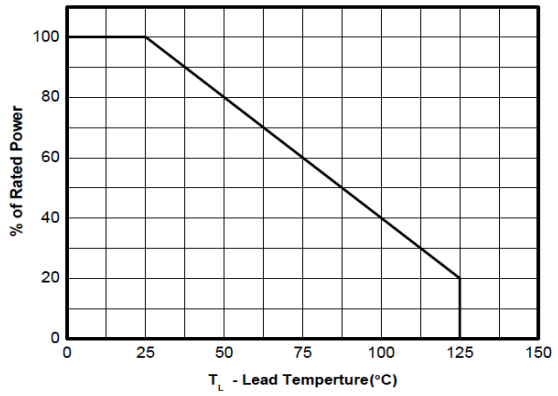


Figure1. Peak pulse power derating curve

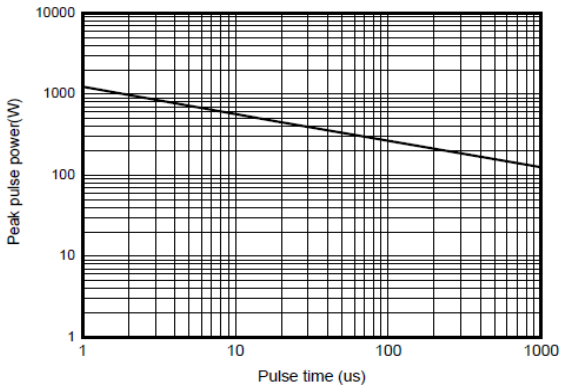


Figure2. Peak Pulse Power vs. Pulse Time

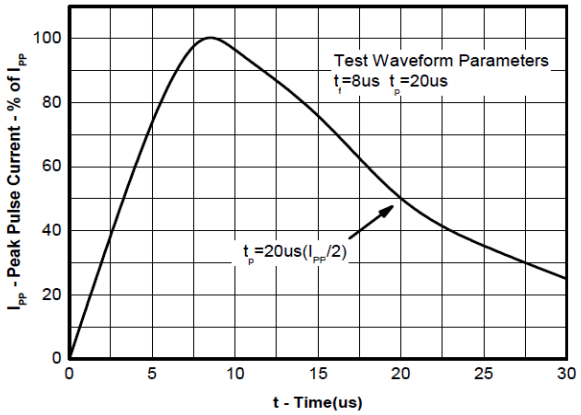
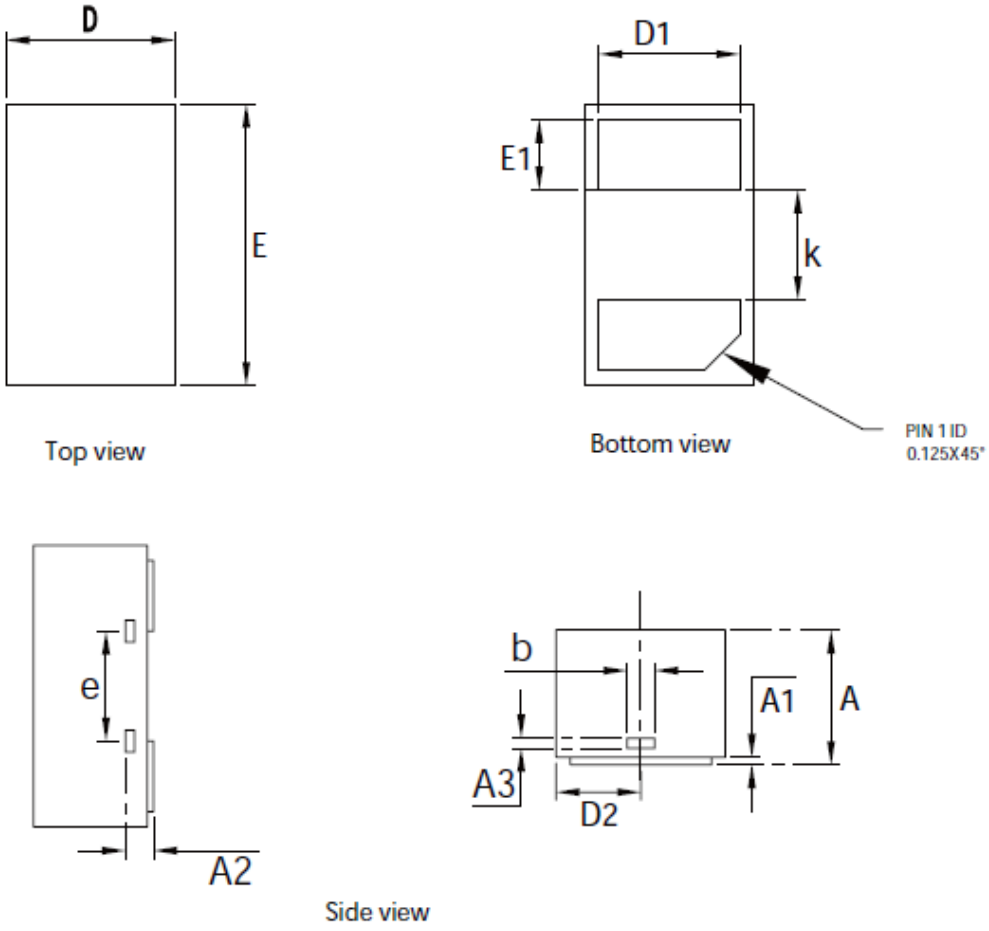


Figure3. Pulse Waveform

Applications Information

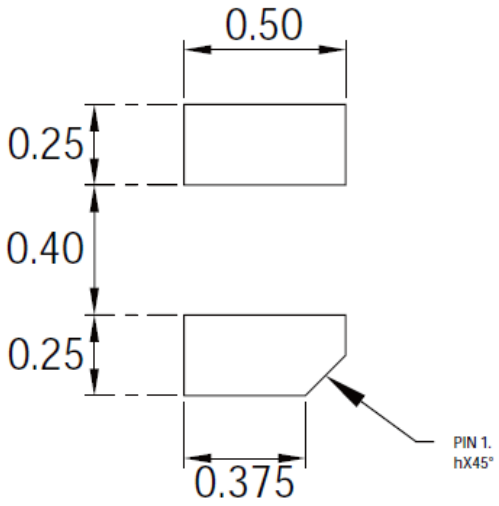
Typical Interface Application

Package Outline Drawing



Symbol	Min	Nom	Max
A	0.350	0.450	0.550
A1	0.000	0.020	0.050
A2	0.077	0.127	0.207
A3	0.013	0.063	0.113
b	0.070	0.120	0.200
D	0.500	0.600	0.700
D1	0.400	0.500	0.600
D2	0.200	0.300	0.400
E	0.900	1.000	1.100
E1	0.150	0.250	0.350
e	0.460	0.510	0.560
k	0.300	0.400	0.500

Recommended Land Pattern



Note:

1. Controlling dimension : in millimeters.
2. General tolerance:+/-0.05mm.
3. The pad layout is for reference purposes only.

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	10-July-2021