

## Description

CSM12FB 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, CSM12FB is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD) ( $\pm 25\text{kV}$  air,  $\pm 25\text{kV}$  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.



## Mechanical Characteristics

- ◆ DFN1006
- ◆ ROHS/ Compliant
- ◆ Halogen free
- ◆ Molding compound flammability rating: UL 94V-0
- ◆ Marking: Part number
- ◆ Packing: Tape and Reel per EIA 481

## Features

- ◆ IEC 61000-4-2 (ESD)
  - $\pm 25\text{kV}$  Contact Discharge
  - $\pm 25\text{kV}$  Air Discharge
- ◆ IEC 61000-4-4 EFT Protection
  - 40A (5/50ns)
- ◆ Transient protection for high-speed data lines
- ◆ Package optimized for high-speed lines
- ◆ Protects one data, control or power line
- ◆ Low clamping voltage
- ◆ Low leakage current: 100nA @ VRWM (Typical)

## Applications

- ◆ Portable Electronics
- ◆ Notebooks / Desktops / Servers
- ◆ Cellular Phones
- ◆ MP3 Ports
- ◆ Digital Ports
- ◆ Subscriber Identity Module (SIM) card

Pin Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
CSM12FB	DFN1006	2C	Tape & Reel	7 inch

Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

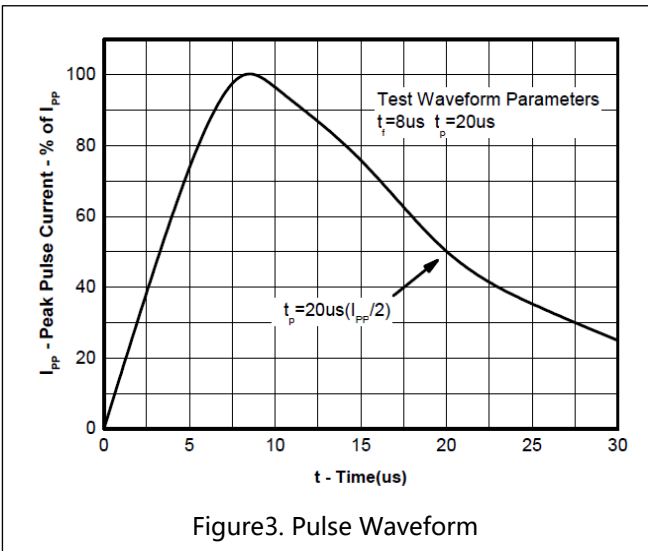
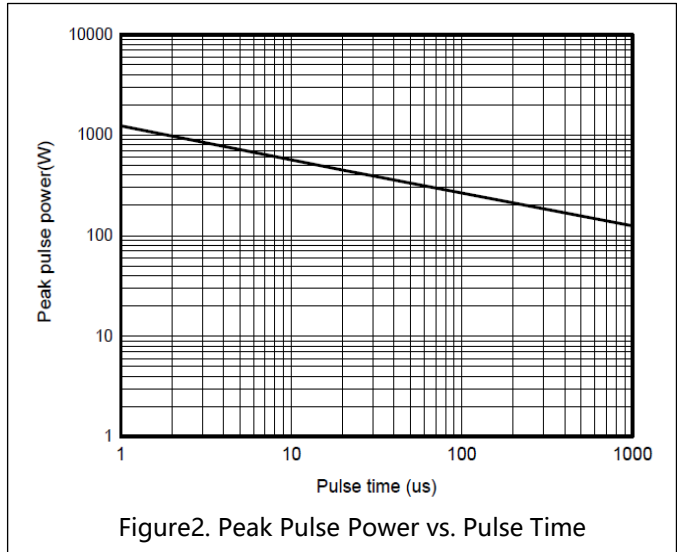
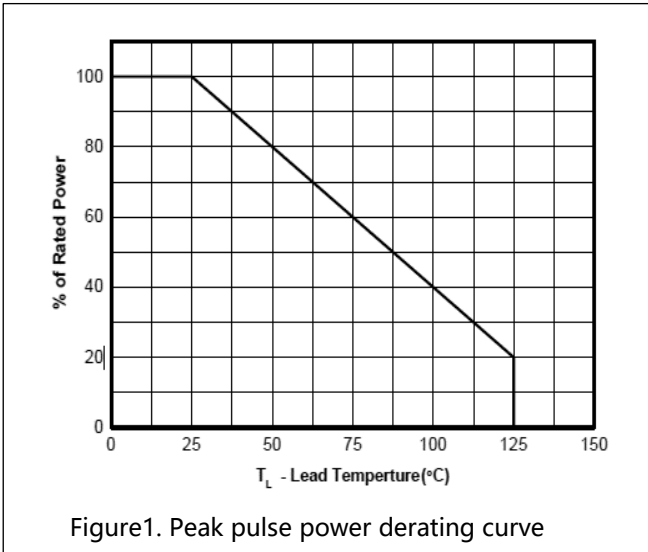
Parameter	Symbol	Value	Units
P <sub>PP</sub>	Peak Pulse Power (8/20μs)	150	W
T <sub>J</sub>	Operating Temperature	-55/+125	°C
T <sub>STG</sub>	Storage Temperature	-55/+150	°C

Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V <sub>RWM</sub>				12.0	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA	13.5			V
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> =12V			1	uA
Peak Pulse Current	I <sub>PP</sub>	Peak Pulse Current			6	A
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> =1A; t <sub>p</sub> =8/20us			16	v
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> =6A; t <sub>p</sub> =8/20us			25	v
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V; f=1MHz		7		pF



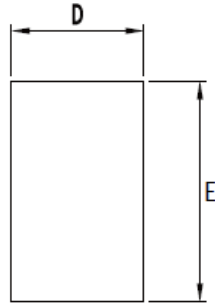
Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)



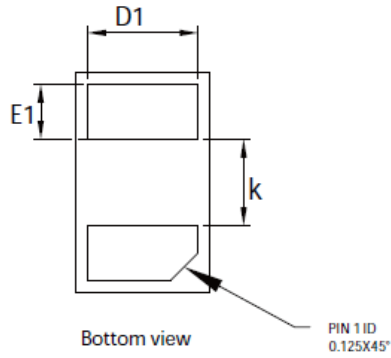
Applications Information

Typical Interface Application

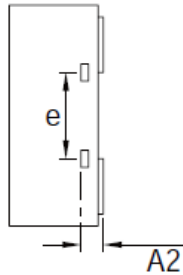
Package Outline Drawing



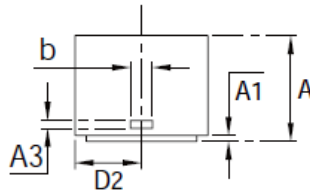
Top view



Bottom view

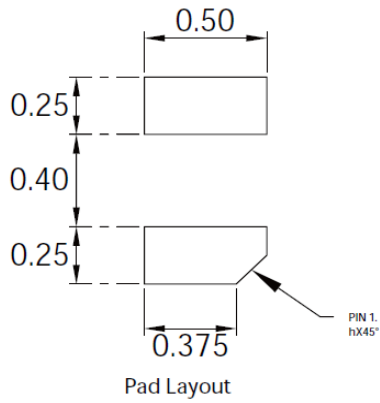


Side view



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:  $\pm 0.05\text{mm}$
3. The pad layout is for reference only

Revision history of Specification

Version	Change Items	Effective Date
1.0	Initial Release	13-Aug-2021