

# MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

## AZ4208-01F-MS

**Product specification**

**FEATURES**

- 80W peak pulse power per line (tP = 8/20μs)
- DFN1006-2L package
- Replacement for MLV(0402)
- Bidirectional configurations
- Response time is typically < 1ns
- Low clamping voltage
- RoHS compliant
- Transient protection for data lines to IEC61000-4-2(ESD) ±30KV(air), ±30KV(contact); IEC61000-4-4 (EFT) 40A (5/50ns)


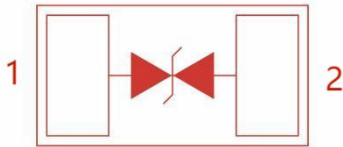
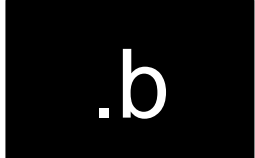
**APPLICATIONS**

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

**Mechanical Characteristics**

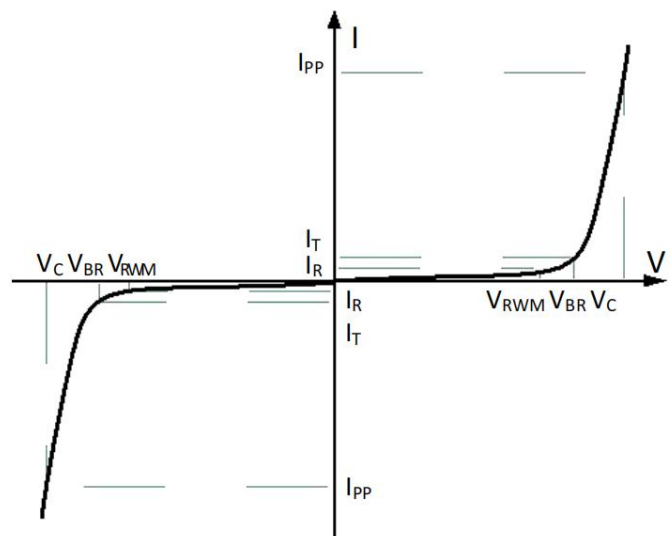
- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 2 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness:≤3mil

**Reference News**

PACKAGE OUTLINE	PIN CONFIGURATION	Marking
 <p>DFN-1006</p>		

**ElectronicsParameter**

Symbol	Parameter
V <sub>RWM</sub>	Peak Reverse Working Voltage
I <sub>R</sub>	Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current
I <sub>PP</sub>	Maximum Reverse Peak Pulse Current
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
P <sub>PP</sub>	Peak Pulse Power
C <sub>J</sub>	Junction Capacitance
I <sub>F</sub>	Forward Current
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub>



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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$				8	V
Breakdown Voltage	$V_{BR}$	$I_t = 1mA$	9.0	11.0	13.0	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V T=25°C$			1.0	$\mu A$
Maximum Reverse Peak Pulse	$I_{PP}$			5.0		A
Clamping Voltage	$V_C$	$I_{PP}=1A$			13	V
Clamping Voltage	$V_C$	$I_{PP}=3A$			15	V
Clamping Voltage	$V_C$	$I_{PP}=5A$			17	V
Junction Capacitance	$C_j$	$V_R=0V f = 1MHz$		13	15	pF

**Absolute maximum rating@25°C**

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p=8/20\mu s$ )	$P_{pp}$	80	W
Operating Temperature	$T_J$	-55 to + 150	°C
Storage Temperature	$T_{STTh}$	-55 to + 150	°C

**Typical Characteristics**

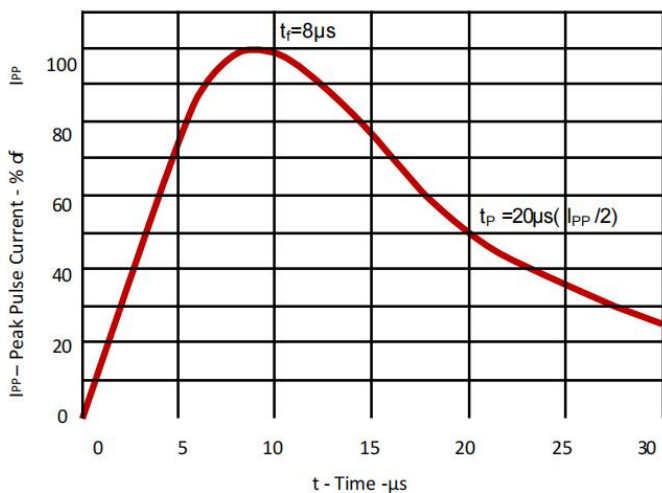


Fig 1.Pulse Waveform

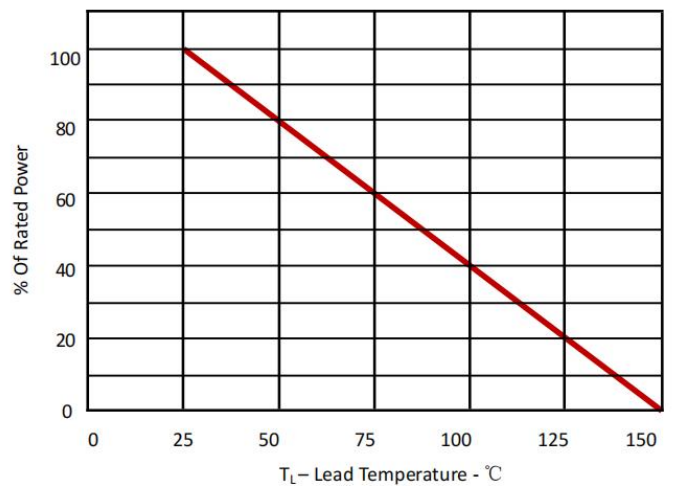


Fig 2.Power Derating Curve

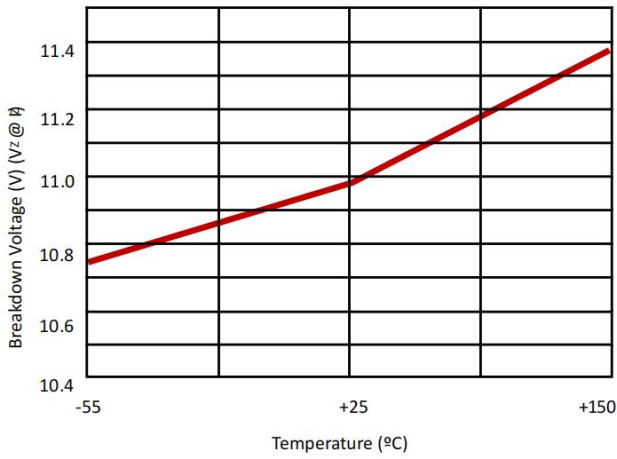


Fig 3. Typical Breakdown Voltage vs. Temperature

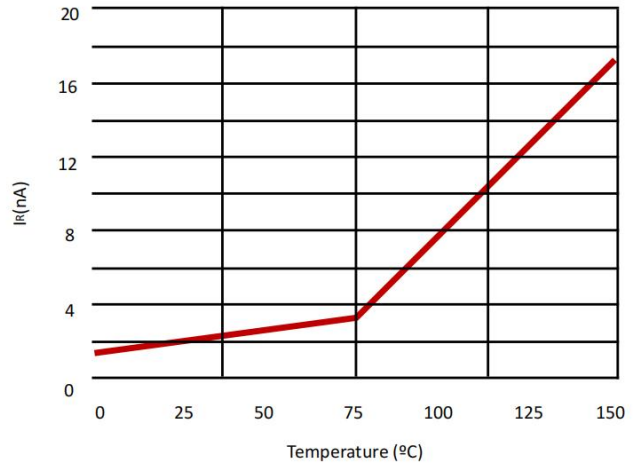


Fig 4. Typical Leakage Current vs. Temperature

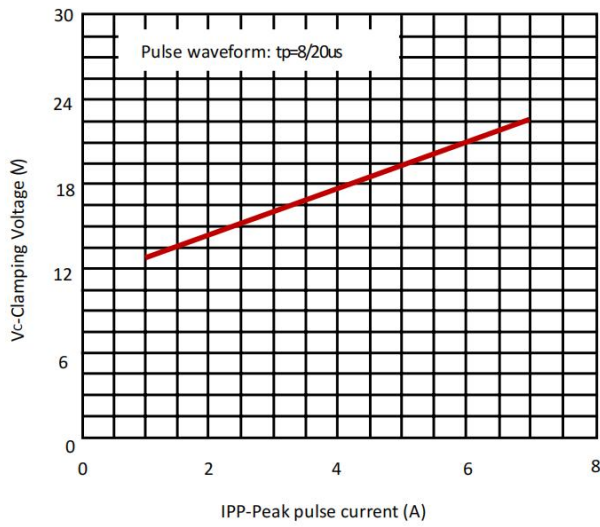


Fig 5. Clamping voltage vs. Peak pulse current

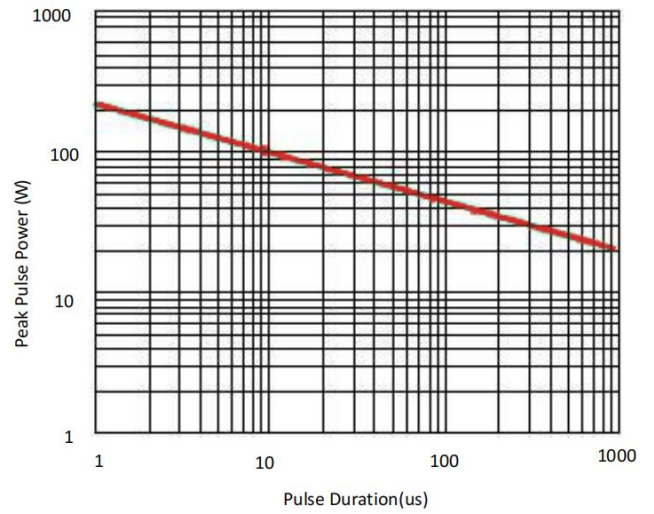
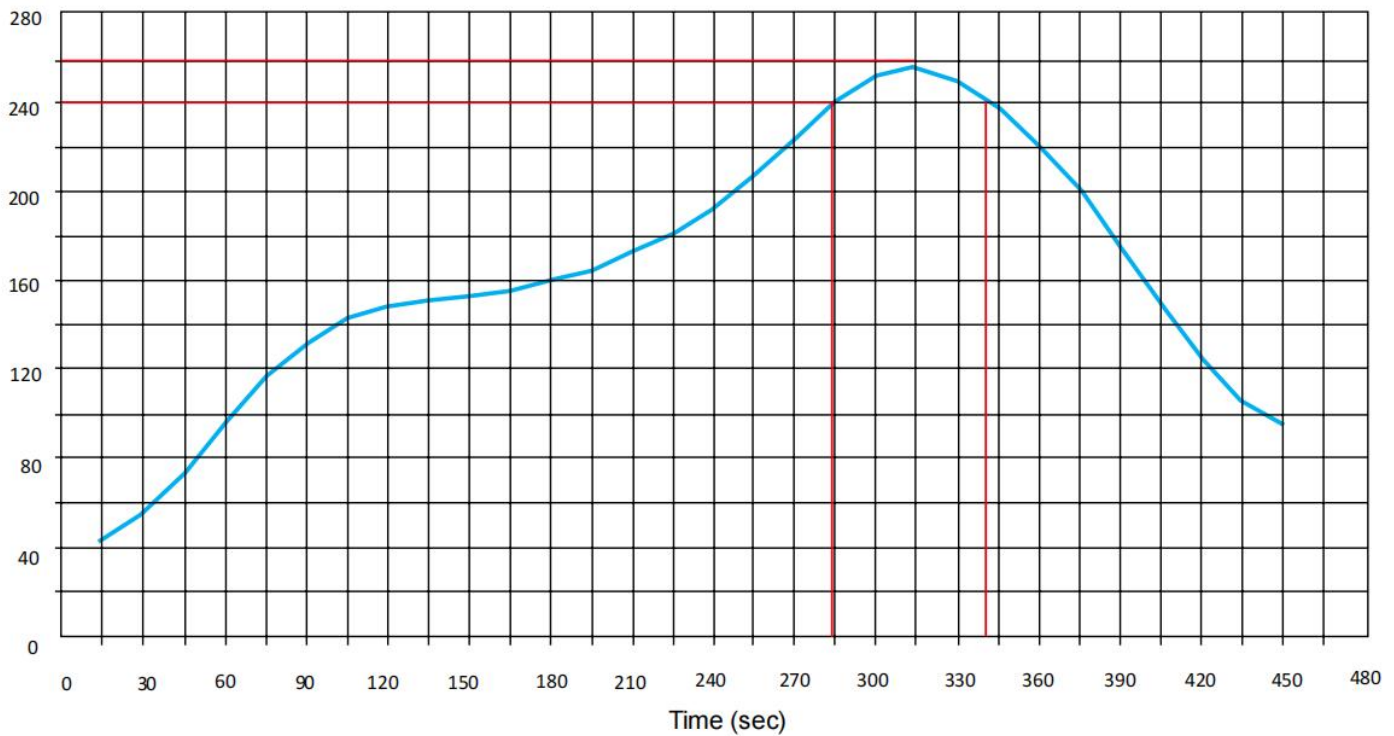


Fig 6. Non-Repetitive Peak Pulse Power vs. Pulse time

## Solder Reflow Recommendation

Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec

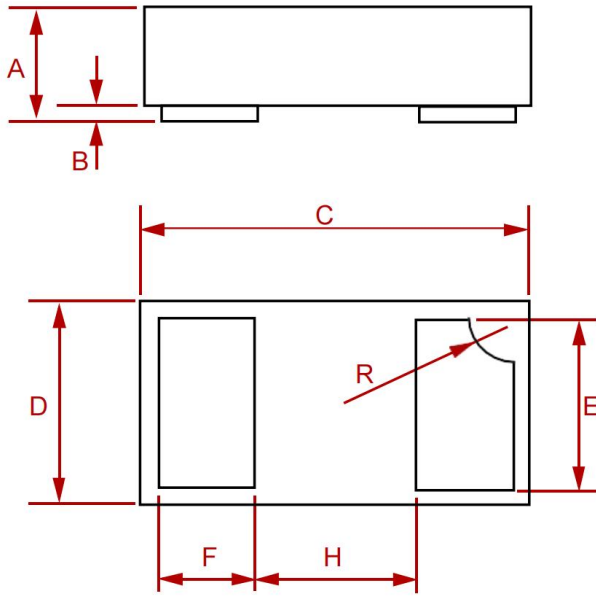


## PCB Design

For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

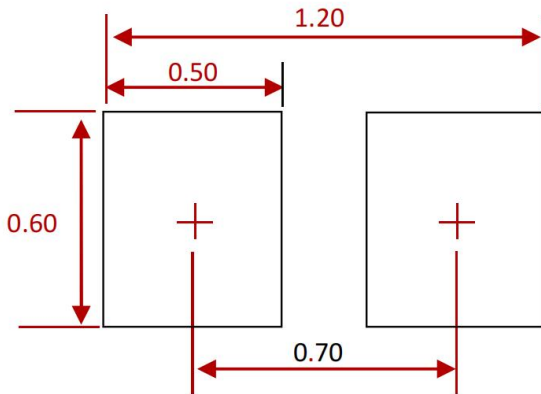
- Do not use stubs, but place the cathode of the TVS diode directly on the signal trace.
- Do not make false economies and save copper for the ground connection.
- Place via holes to ground as close as possible to the anode of the TVS diode.
- Use as many via holes as possible for the ground connection.
- Keep the length of via holes in mind! The longer the more inductance they will have.

**PACKAGE MECHANICAL DATA**



Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.0125	0.02	0.32	0.52
B	0.000	0.002	0.00	0.05
C	0.037	0.043	0.95	1.080
D	0.022	0.027	0.55	0.680
E	0.016	0.024	0.40	0.60
F	0.008	0.012	0.20	0.30
H	0.015Typ.		0.40Typ.	
R	0.001	0.005	0.05	0.15

**Suggested Pad Layout**



**NOTES:**

1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

**REEL SPECIFICATION**

P/N	PKG	QTY
AZ4208-01F-MS	DFN-1006	12000

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