

CMS Power-lines Protection Series (CMS-P)
Descriptions 产品描述

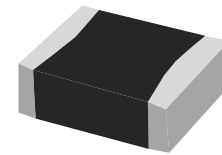
The Ceramic Micro-Surge Protection Device (CMS) is manufactured from semiconducting ceramics which offer rugged protection and excellent transient energy absorption in a small SMD package. These devices are designed to suppress a variety of transient events, including those specified in IEC61000-4-2, IEC61000-4-5 and other standards used for Electromagnetic Compliance (EMC).

These devices are available in ceramic leadless chip form, eliminating lead inductance and assuring fast speed of response to transient surges. In addition, The CMS transient suppressors have temperature independent suppression characteristics, affording protection from -55°C to 125°C, which is much better than suppressors based on silicon semiconductor technology.

The CMS-P Series is specially designed for power-lines protection applications. It features a very high current protection capability with a very small size, also a very fast response thus a ultra low clamping voltage. These characteristics make CMS-P Series devices the best replacement of TVS and metal oxide (MOV).

Features 产品特点

- Multi-Layers Construction Provides Higher Power Dissipation
- Better than UL94V-0 Flammability Rating
- No Temperature Derating up to 125°C Ambient
- Reliable ESD Protection up to 30kV acc. to IEC61000-4-2
- Inherent Bi-directional Clamping
- SMD type Body size 1206
- “Zero” Lead Inductance
- Very low Clamping Voltage
- RoHS compliant


Top View
Order Information 包装信息

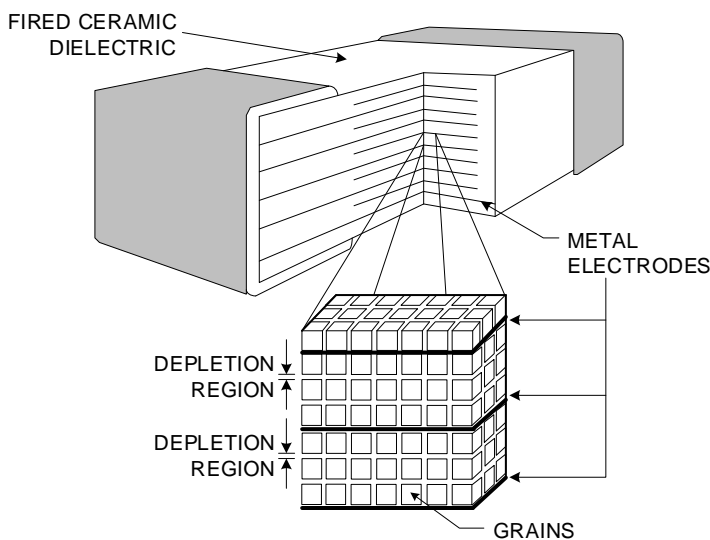
Type	Quantity	Reel Size
CMS1206	2000 pcs	7 Inch (178mm)

Applications 产品应用

- Severe transient voltage suppressor for power-lines, replacing traditional MOV&TVS solutions.
- Surge protection for IEC61000-4-5
- EFT protection for IEC 61000-4-4 (Level 4)
- ESD protection for IEC 61000-4-2 (Level 4)

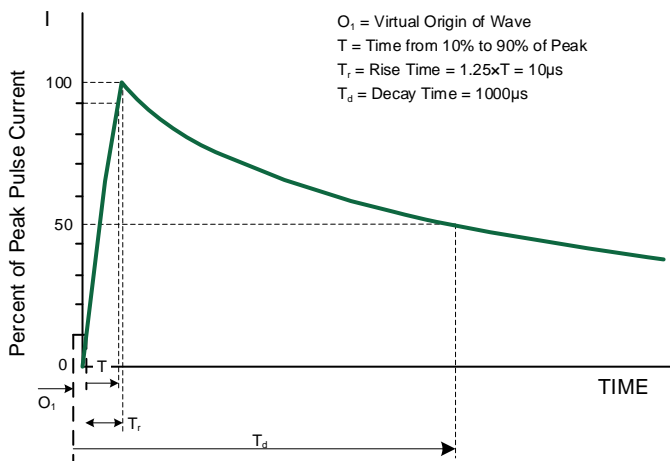
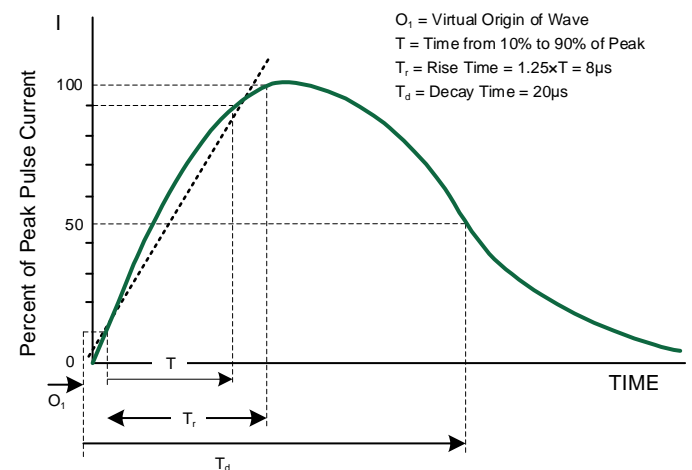
Agency Information 安规认证

- UL/cUL: E498596
- TUV: B002653 0001 Rev.01
- CQC: CQC21001318502

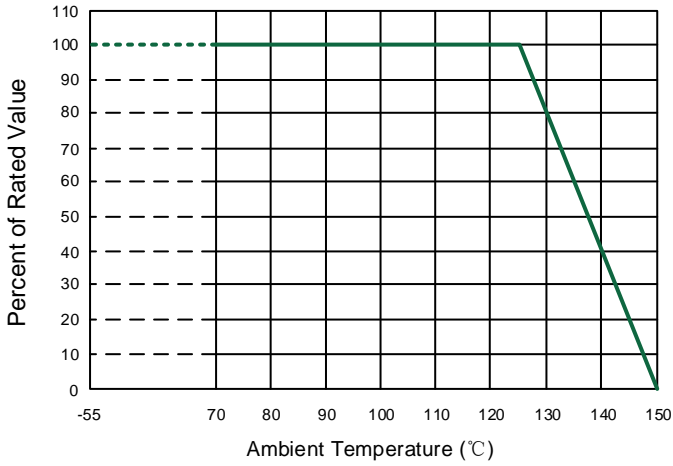

Multilayer Internal Construction

Device Ratings and Specifications (TA=25°C unless otherwise noted) 额定值和规格

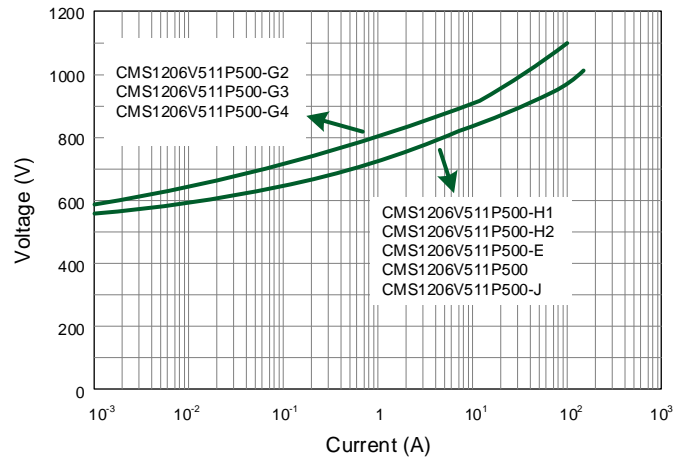
型号 Part Number	最大持续电压 Maximum Continuous Voltage		压敏电压 Nominal Varistor Voltage @1mA	最大钳位电压 Max. Clamping Voltage @8/20µs		能量 Energy @10/1000µs	峰值浪涌电流 Peak Pulse Current @8/20µs		过载电压 Over-load Voltage 2 hrs
	(Vac)	(Vdc)		V _C (V)	I _C (A)		1 Time	±20 Times	
			V _N (V)			E _T (J)	I _{PP} (A)		(Vac)
CMS1206V511P500	320	410	459-561	840	5.0	1.0	100	70	350
CMS1206V511P500-E	320	410	459-561	840	5.0	1.3	150	100	350
CMS1206V511P500-J	320	410	459-561	840	5.0	0.7	70	50	350
CMS1206V511P500-H1	350	450	504-561	840	5.0	1.0	100	70	400
CMS1206V511P500-H2	350	450	504-561	840	5.0	0.7	70	50	400
CMS1206V511P500-G2	380	490	550-590	880	5.0	0.7	70	50	440
CMS1206V511P500-G3	380	490	550-580	880	5.0	1.0	80	60	440
CMS1206V511P500-G4	380	490	550-600	880	5.0	1.0	100	70	440

Pulse Waveform - 10/1000µs waveform

Pulse Waveform - 8/20µs waveform


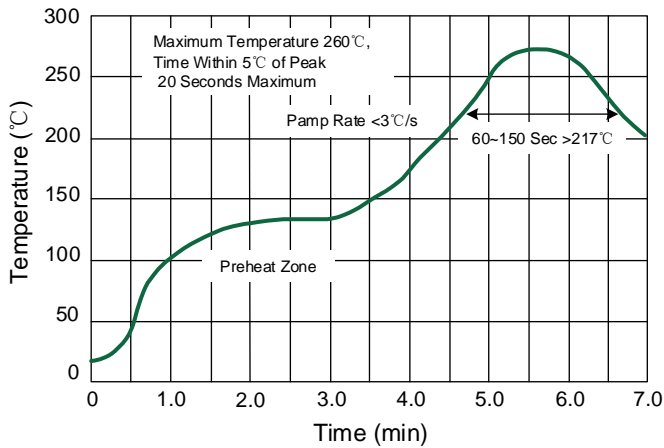
Current, Energy and Power Derating Curve



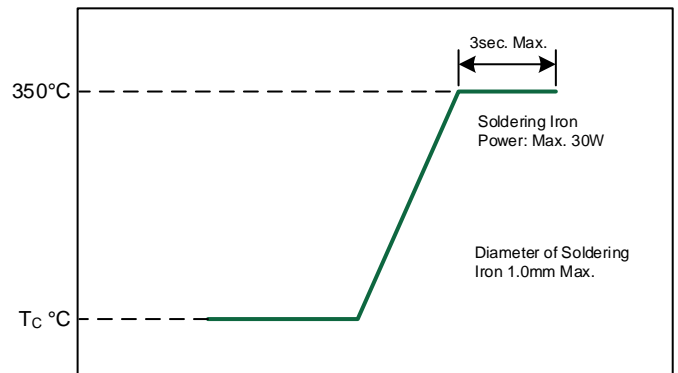
Maximum Clamping Voltage

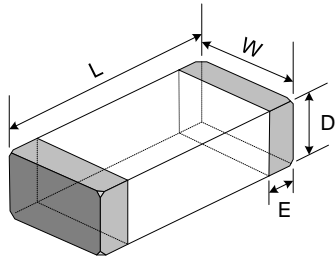
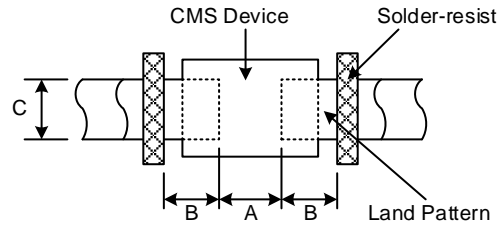


Lead-free Re-flow Solder Profile

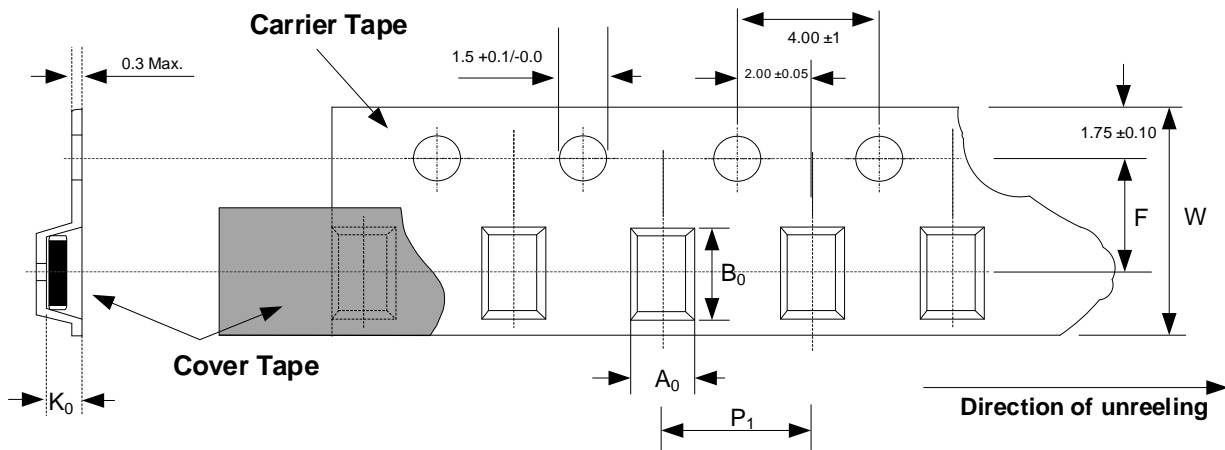


Iron Soldering Profile

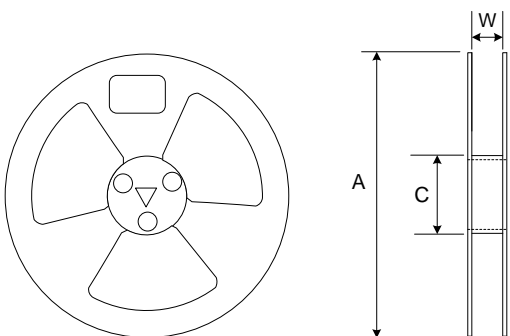


Product Dimensions 产品尺寸

Product Dimensions

Recommended PCB Pattern

Size	L	W	D	E	A	B	C
1206	3.2 +0.6/-0.2	1.6 +0.4/-0.2	2.0 Max.	0.20~0.75	1.8~2.5	1.0~1.5	1.6~2.2

Tape Specifications 编带规格


Type	A ₀	B ₀	K ₀	P ₁	W	F
CMS1206	2.10 ±0.20	3.90 ±0.20	2.20 Max.	4.00 ±0.10	8.00 ±0.20	3.50 ±0.05

Reel Dimension 卷盘尺寸


Type	Spec.	Dimensions(mm)		
		A	W	C
CMS1206	7"	178	8.4+1.5/-0.0	58

Storage 存储条件

- Storage temperature range (packaging conditions): $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ RH 70% (Max.).
存储温度范围 (包装情况下) $-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$ RH 70% (最高.)。
- The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to high humidity. Package must be stored at 40°C or less and 70% RH or less.
如果将包装存放在暴露的高湿度地方, 则外部电极的可焊性可能会变差。包装必须储存在 40°C 或更低, RH为70%或更低。
- The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to dust of harmful gas (e.g. HCl, sulfurous gas of H_2S).
如果将包装存放在暴露的有害气体 (例如HCl, H_2S 的含硫气体) 以及粉尘地方, 则外部电极的可焊性可能会变差。
- Packaging material may be deformed if package are stored where they are exposed to heat of direct sunlight.
如果包装材料存放在暴露的阳光直射高温下, 包装材料可能会变形。
- Solderability shall be guaranteed for 12 months from the date of delivery on condition that they are stored at the environment specified in Clause 2. For those parts, which passed more than 12 months shall be checked solder-ability before use.
自交货之日起, 可焊性应保证12个月, 前提是储存在第2条规定的环境中。对于超过12个月的产品, 应在使用前检查可焊性。

Environmental Reliability Test 可靠性测试

Item	Requirement	Test Condition
High Temperature Storage	<ul style="list-style-type: none"> Breakdown voltage change: within $\pm 10\%$ No mechanical damage 	<ul style="list-style-type: none"> Temperature: $150 \pm 2^\circ\text{C}$ Time: 1000 (+24) hours Test after placing in ambient temperature for 1~2hours
Low Temperature Storage	<ul style="list-style-type: none"> Breakdown voltage change: within $\pm 10\%$ No mechanical damage 	<ul style="list-style-type: none"> Temperature: $-55 \pm 2^\circ\text{C}$ Time: 1000 (+24) hours Test after placing in ambient temperature for 1~2hours
Thermal Shock	<ul style="list-style-type: none"> Breakdown voltage change: within $\pm 10\%$ No mechanical damage 	<ul style="list-style-type: none"> Temperature, Time: $-55 (\pm 2)^\circ\text{C}/30\text{min} \sim 125 (\pm 2)^\circ\text{C}/30\text{min}$ Transforming interval: 2~3min. Tested cycle: 100 cycles. Test after placing in ambient temperature for 1~2hours
High Temperature Load	<ul style="list-style-type: none"> Breakdown voltage change: within $\pm 10\%$ No mechanical damage 	<ul style="list-style-type: none"> Temperature: $125 \pm 2^\circ\text{C}$ Rated working voltage applied Time: 1000 (+24) hours Test after placing in ambient temperature for 1~2hours
Damp Heat Load / Humidity Load	<ul style="list-style-type: none"> Breakdown voltage change: within $\pm 10\%$ No mechanical damage 	<ul style="list-style-type: none"> Temperature: $85 \pm 2^\circ\text{C}$ Humidity: $85\% \pm 2\text{RH}$ Rated working voltage applied Time: 500 (+24) hours Test after placing in ambient temperature for 1~2hours

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Specifications are subject to change without notice.

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