

Boarden Plastic Chip Varistor

Description

The CMS(3025-4032) series are manufactured with encapsulated cylindrical varistor elements as small SMD packages. The products 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 feature high energy absorption capabilities, high working temperature (125°C) and also fast response thus low clamping voltages. These characteristics make the devices the best replacement of DIP-MOV in many applications, especially with space limits and SMT installation requirements.

Features

- Cylindrical varistor elements, encapsulated
- High energy absorption capability
- Flammability: UL94V-0
- Application in surge protection of AC supply systems
- SMD type body size 3025, 4032
- Suitable for lead-free soldering
- RoHS compliant
- Safety certification:
UL: E498596
TUV: B002653 0001 Rev.01
CQC: CQC21001318502



Device Size	Quantity	Reel Size
3025	2000 pcs	15 Inch (380x16.4mm)
4032	1000 pcs	15 Inch (380x24.4mm)

Applications

- LED circuit protection
- Industrial equipment
- Communication equipment
- Automotive Electronics

General Technical Data

Device Ratings and Specifications (T_A=25°C unless otherwise noted)

Parameter	Value
Maximum RMS Operating Voltage	150~420 V
Maximum DC Operating Voltage	200~560 V
Varistor Voltage Range	240~680V
Maximum Surge Current (8/20μs)	3025: 1000A 4032: 2000 A
Operating Temperature Range	-40°C to +125 °C
Storage Temperature Range	-40°C to +125 °C

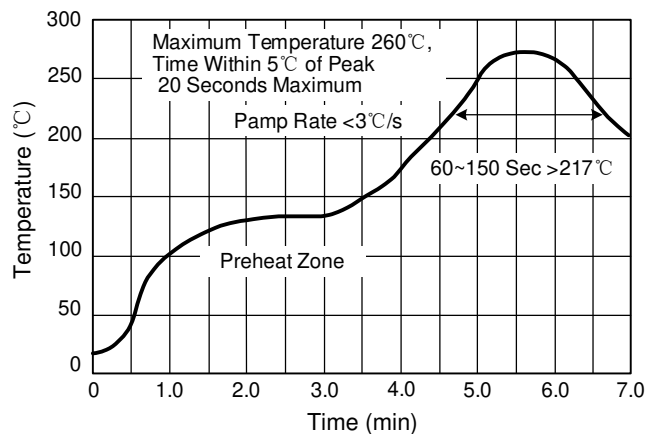
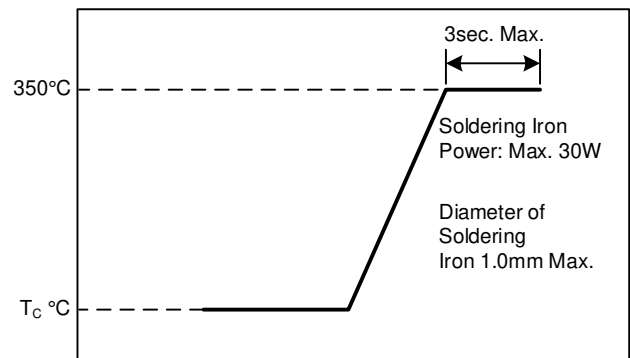
Device Ratings and Specifications (3025)

Part Number	Maximum Continuous Voltage		Nominal Varistor Voltage @1mA	Maximum Clamping Voltage @8/20μs		Maximum Peak Pulse Current 8/20μs (A)	Maximum Energy 10/1000μs	Rated Power
	AC (V)	DC (V)	V _{1mA} (V)	V _C (V)	I _P (A)	I _{PP} (A)	W (J)	P (W)
CMS3025V241P501	150	200	240[216-264]	395	10	1000	7.1	0.20
CMS3025V271P501	175	225	270[243-297]	455	10	1000	7.9	0.20
CMS3025V301P501	195	250	300[270-330]	500	10	1000	8.2	0.20
CMS3025V331P501	210	270	330[297-336]	545	10	1000	9.1	0.20
CMS3025V361P501	230	300	360[324-396]	595	10	1000	10.9	0.20
CMS3025V391P501	250	320	390[351-429]	650	10	1000	11.7	0.20
CMS3025V431P501	275	350	430[387-473]	710	10	1000	13.1	0.20
CMS3025V471P501	300	385	470[423-517]	775	10	1000	14.7	0.20
CMS3025V511P401	320	418	510[459-561]	842	10	1000	15.2	0.20
CMS3025V561P401	350	460	560[504-616]	920	10	1000	16.1	0.20
CMS3025V621P401	385	505	620[558-682]	1025	10	1000	16.7	0.20
CMS3025V681P401	420	560	680[612-748]	1120	10	1000	17.5	0.20

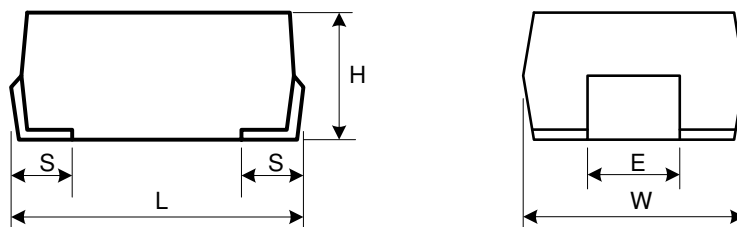
Device Ratings and Specifications (4032)

Part Number	Maximum Continuous Voltage		Nominal Varistor Voltage @1mA	Maximum Clamping Voltage @8/20μs		Maximum Peak Pulse Current 8/20μs (A)	Maximum Energy 10/1000μs	Rated Power
	AC (V)	DC (V)	V _{1mA} (V)	V _C (V)	I _P (A)	I _{PP} (A)	W (J)	P (W)
CMS4032V241P102	150	200	240[216-264]	395	25	2000	16.2	0.32
CMS4032V271P102	175	225	270[243-297]	455	25	2000	18.5	0.32
CMS4032V301P102	195	250	300[270-330]	500	25	2000	20.4	0.32
CMS4032V331P102	210	270	330[297-336]	545	25	2000	22.3	0.32
CMS4032V361P102	230	300	360[324-396]	595	25	2000	24.5	0.32
CMS4032V391P102	250	320	390[351-429]	650	25	2000	26.5	0.32
CMS4032V431P102	275	350	430[387-473]	710	25	2000	29.0	0.32
CMS4032V471P102	300	385	470[423-517]	775	25	2000	30.0	0.32
CMS4032V511P801	320	418	510[459-561]	842	25	2000	32.0	0.32
CMS4032V561P801	350	460	560[504-616]	920	25	2000	32.0	0.32
CMS4032V621P801	385	505	620[558-682]	1025	25	2000	32.0	0.32
CMS4032V681P801	420	560	680[612-748]	1120	25	2000	32.0	0.32

Soldering Recommendation

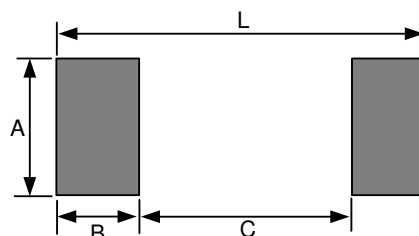
Lead-free Re-flow Solder Profile

Iron Soldering Profile


Product Dimensions



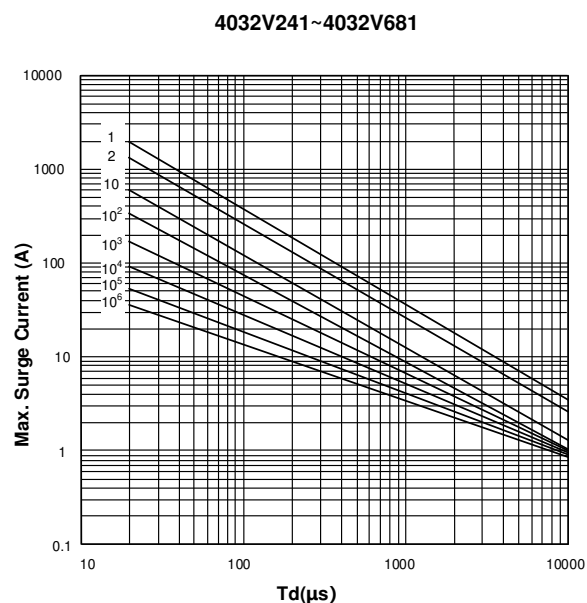
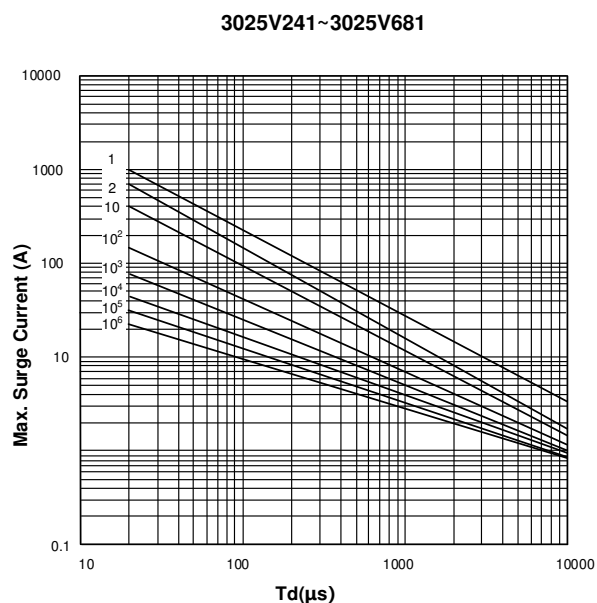
Dimensions	3025		4032	
	Inch	Millimeter	Inch	Millimeter
L	0.307~0.331	7.80~8.40	0.397~0.421	10.10~10.70
W	0.236~0.260	6.00~6.60	0.314~0.338	8.00~8.60
H	0.141~0.165	3.60~4.20	0.157~0.181	4.00~4.60
S	0.059~0.083	1.50~2.10	0.066~0.091	1.70~2.30
E	0.086~0.110	2.20~2.80	0.106~0.130	2.70~3.30

Recommended Pad Dimensions

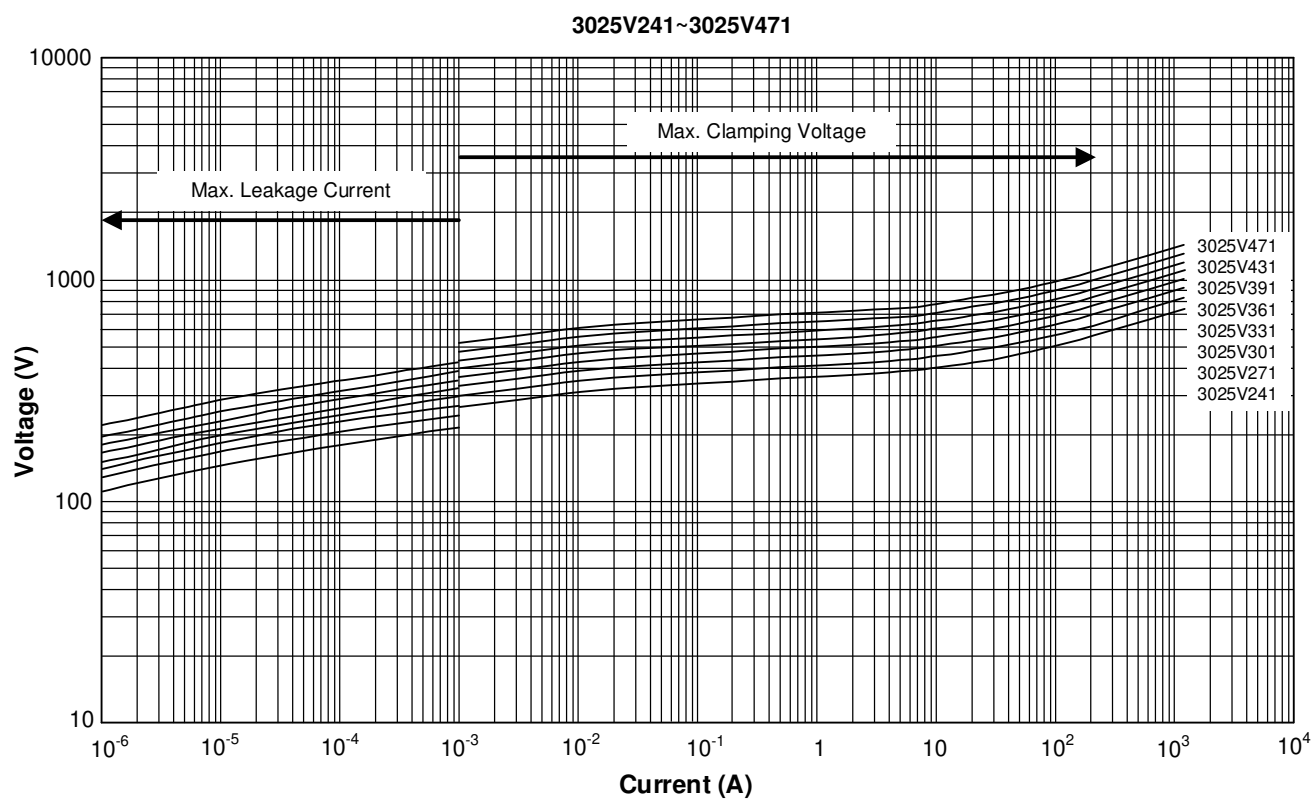


Dimensions (mm)	A TYP.	B TYP.	C TYP.	L TYP.
3025	3.5	2.8	4.5	10.1
4032	3.5	2.8	6.5	12.1

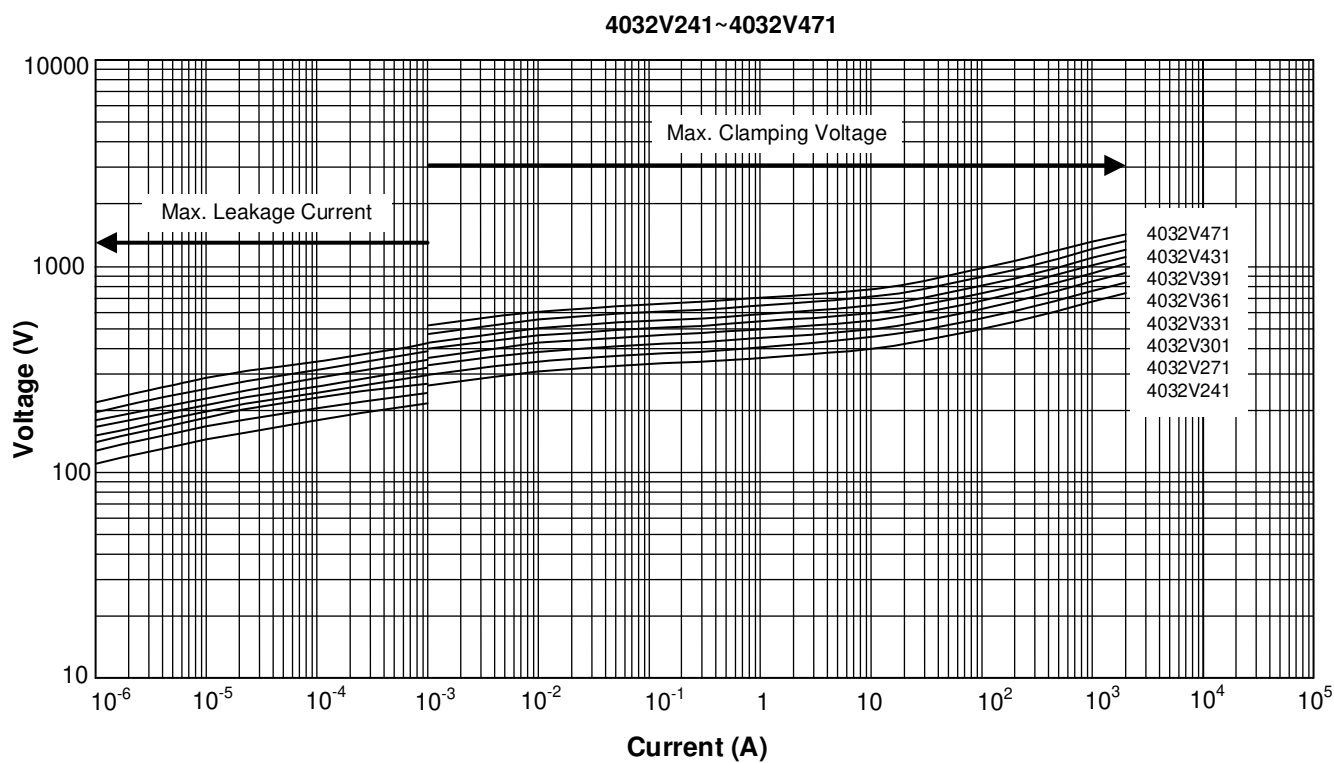
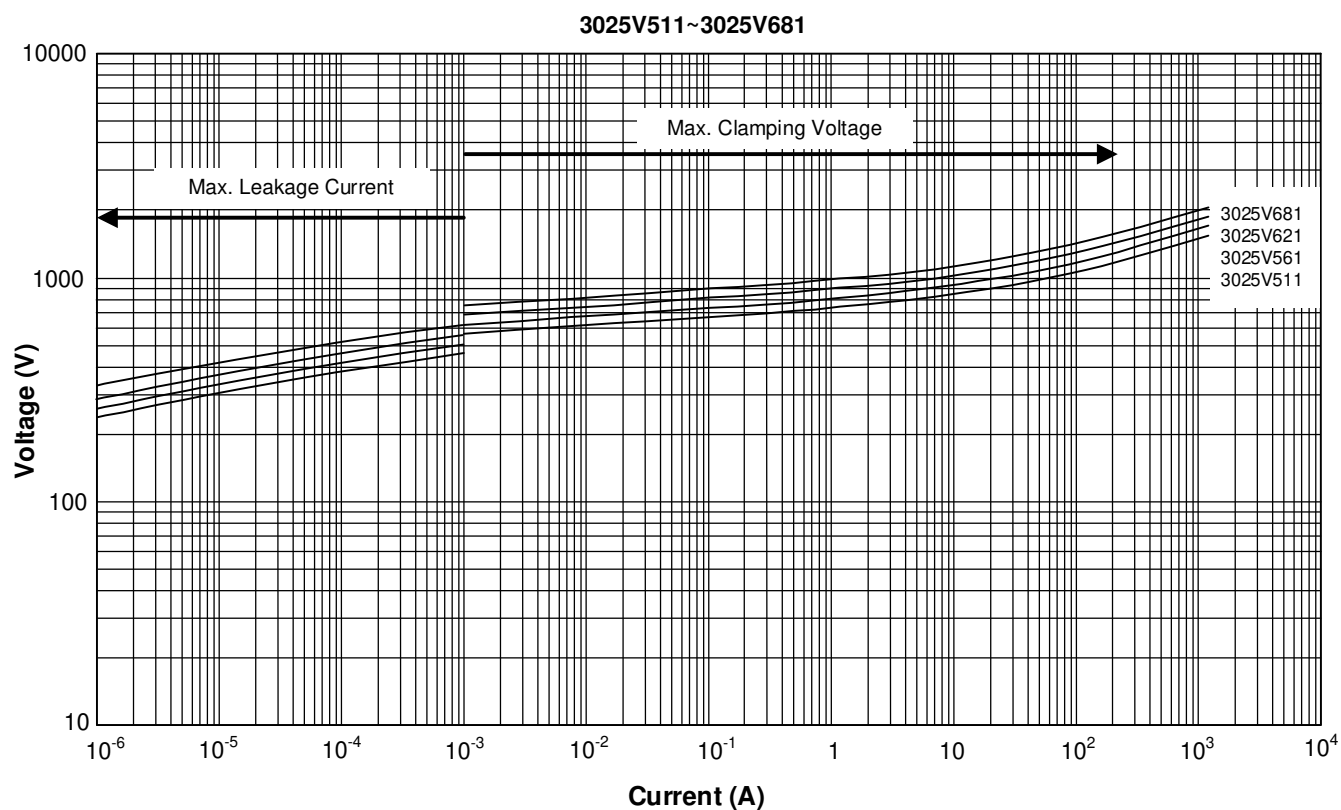
Maximum Impulse Current Derating Curve



Maximum Leakage Current and Maximum Clamping Voltage Curve

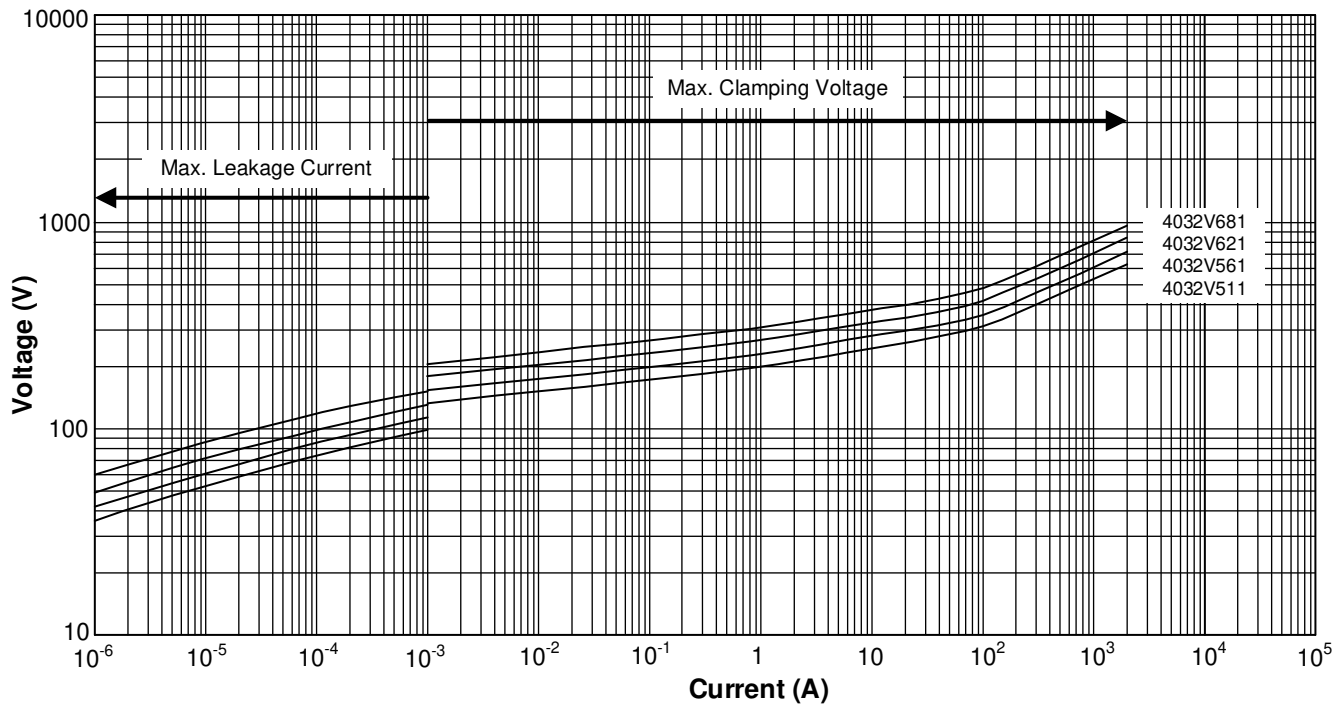


Maximum Leakage Current and Maximum Clamping Voltage Curve



Maximum Leakage Current and Maximum Clamping Voltage Curve

4032V511~4032V681



Storage

- ✓ Storage temperature range (packaging conditions): -10℃~+40℃ RH 70% (Max.).
存储温度范围 (包装情况下) -10℃~+40℃ 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℃ 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℃ 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 or harmful gas (e.g. HCl, sulfurous gas or H₂S).
如果将包装存放在暴露的有害气体 (例如 HCl, H₂S 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。