



## Certification Record

CUSTOMER	CLASS	FILE
EPCOS (Zhuhai FTZ) Co., Ltd. Lianfeng Lu, Free Trade Zone Wanzai Zhuhai City 519030 China	<a href="#">2221-01</a> AUDIO AND VIDEO EQUIPMENT-Accessories and Parts for Electronic Equipment	241538
<b>Refer to Class Description for program details</b>		

Metal oxide varistors, for use as across-the-line transient protectors:

- SIOV-S\*\*K\*\*\*\* series and SIOV-SFS\*\*K\*\*\*\* series (\*\* is 05 through 20, \*\*\*\* is 115 through 1000), rated 115-1100V ac (rms), varistor voltage 180-1800V, surge rated 400-8000A.
- B\*\*K\*\*\*\* series (\*\* is 32 through 80, \*\*\*\* is 130 through 1100), rated 130-1100V ac (rms), varistor voltage 205-1800V, surge rated 15-100kA.
- LS40K\*\*\*QP, LS40K\*\*\*QPK2, LS40K\*\*\*QPK3 and LS40K\*\*\*QPK23 Series (\*\*\* denotes 3 digit numbers from 130 to 750), varistor voltage 205-1200V, surge rated 40kA.
- SIOV-S\*\*K\*\*\*\*E2 series and SIOV-SFS\*\*K\*\*\*\*E2 series (\*\* is 05 through 20, \*\*\*\* is 130 through 1000), rated 130-1100V ac (rms), varistor voltage 205 - 1800V, surged rated 800 - 10000A; SIOV-S14K\*\*\*E3 series and SIOV-SFS14K\*\*\*E3 series (\*\*\* is 300 through 385), rated 300 - 385V ac (rms), varistor voltage 470 - 620 V, surge rated 6500A; SIOV-S20K\*\*\*E3 series and SIOV-SFS20K\*\*\*E3 series (\*\*\* is 130 through 320), rated 130 - 320V ac (rms), varistor voltage 205 - 510 V, surged rated 12000A.
- SIOV-S05S175A, SIOV-SFS05S175A, SIOV-S07S320A, SIOV-SFS07S320A, SIOV-S20S275C, SIOV-SFS20S275C, SIOV-S20S510A and SIOV-SFS20S510A, rated 175V to 510V rms.
- The S...A, SFS...A or S...C, SFS...C denotes the customer specific tolerance, max.  $\pm 10\%$ .
- LS50K\*\*\*P Series, LS50K\*\*\*PK2 Series, rated 130V to 680V rms, varistor voltage 205-1100V, surge rated 75kA.
- L40K150QPK25 and L40K275QPK25, rated 150V and 275V rms, surge rated 40kA.
- LS40K\*\*\*QPK46 Series, (\*\*\* is 130 through 750), rated 130V to 750V ac (rms), varistor voltage 205 - 1200V, surge rated 40kA.
- LS40K\*\*\*QPK53 Series, (\*\*\* is 180, 270 and 600), rated 180V, 270V and 600V ac (rms) respectively, varistor voltage 283V, 424V and 965V respectively, surge rated 40kA; LS40S\*\*\*AQP53 Series, (\*\*\* is 150 through 550), rated 150V to 550V ac (rms), varistor voltage 235.5 - 864V, surge rated 40kA.
- LS40K\*\*\*QPK54 Series, (\*\*\* is 320 through 420), rated 320V to 420V ac (rms), varistor voltage 510 - 680V, surge rated 40kA.
- Series L32K\*\*\*LK19, L32K420E1LK19, L32K\*\*\*LK22; \*\*\* is 150 through 420 indicating the rated voltage from 150V to 420V rms, varistor voltage 240 - 680V, surge rated 25kA.
- Series L40K\*\*\*QLK19, L40K\*\*\*QLK22; \*\*\* is 130 through 680 indicating the rated voltage from 130V to 680V rms, varistor voltage 205 - 1100V, surge rated 40kA.
- Series S20SXXXB and S20SXXXBR7, rated 130-275V ac (RMS), varistor voltage 205-430V, 6500A surge current, "XXX" denotes three digit numbers from 130 to 275V.
- Series S05K115, S07K115, S10K115, S14K115, S20K115, rated 115V ac.

## Notes:

1. These varistors are Certified for use on a nominal 120V systems. Varistors with rms voltage rated 250V or above may be used on a nominal 250V system.
2. These varistors are Certified for use only as components of other Certified equipment where the suitability of the combination is to be determined by CSA International.
3. Types B60K320, B60K1000, and B80K1100 have a standby current of up to 1A when tested for a 320V system.
4. The prefix "SIOV" for varistors above is optional.
5. The "K" in the model designation of varistors in Parts A and D may be replaced by "J", where "J" denotes the varistor tolerance of  $\pm 5\%$  and "K"  $\pm 10\%$ .
6. The model designation of varistors above may be followed by suffixes indicating packing information and/or customer's special requirements which do not affect the electrical characteristics of the varistors.
7. The SIOV-S\*\*K\*\*\*\*, SIOV-SFS\*\*K\*\*\*\*, SIOV-S\*\*K\*\*\*\*E2, SIOV-SFS\*\*K\*\*\*\*E2, SIOV-S14K\*\*\*E3, SIOV-SFS14K\*\*\*E3, SIOV-S20K\*\*\*E3 series and SIOV-SFS20K\*\*\*E3 varistors in Part A and D may have optional markings of SIOV-SxxKVzzz, SIOV-SFSxxKVzzz, SIOV-SxxKVzzzE2, SIOV-SFSxxKVzzzE2, SIOV-S14KVzzzE3, SIOV-SFS14KVzzzE3, SIOV-S20KVzzzE3 and SIOV-SFS20KVzzzE3 respectively, where "xx" denotes the disc diameter and "zzz" the varistor voltage.
8. The SIOV-S05S175A, SIOV-SFS05S175A, SIOV-S07S320A, SIOV-SFS07S320A, SIOV-S20S275C, SIOV-SFS20S275C, SIOV-S20S510A and SIOV-SFS20S510A varistors in Part E may have optional markings of SIOV-S05SVzzzA, SIOV-SFS05SVzzzA, SIOV-S07SVzzzA, SIOV-SFS07SVzzzA, SIOV-S20SVzzzC, SIOV-SFS20SVzzzC, SIOV-S20SVzzzA and SIOV-SFS20SVzzzA respectively, where "zzz" denotes the varistor voltage.
9. Fuse protection is required in combustible enclosures where the varistor is rated 6000A or less.
10. The body of varistors series L32K\*\*LK19, L32K420E1LK19, L32K\*\*\*LK22, L40K\*\*\*QLK19 and L40K\*\*\*QLK22 is not relied on for insulation. These varistors shall be mounted with suitable spacing or supplementary insulation from metal parts.
  - Metal Oxide Varistors - Surface Mount Series SIOV-CU4032K130-300, SIOV-CU3225K130-300, rated 130 to 300V ac.

## Notes:

1. These varistors are Certified for use on a nominal 120V systems. Varistors with rms voltage rated 250V or above may be used on a nominal 250V system.
2. These varistors are Certified for use only as components of other Certified equipment where the suitability of the combination is to be determined by CSA International.
3. The model designation may be followed by suffixes indicating packing information and/or customer's special requirements which do not affect the electrical characteristics of the varistors.

## Varistors for across-line use as transient protection on up to 250V ac system:

- Series SIOV-Q14K\*\*\*, where\*\*\* are changeable numbers 130, 140, 150, 175, 210, 230, 250, 275, 300, 320, 350, 385, 420, 440, 460, 510, 550, 625 and 680; rated 130V through 680V ac; varistor voltage 205V through 1,100V; surge current rated 8kA for SIOV-Q14K130 to SIOV-Q14K460 and 6kA for SIOV-Q14K510 to SIOV-Q14K680.
- Series SIOV-Q20K\*\*\*, where\*\*\* are changeable numbers 130, 140, 150, 150A, 175, 210, 230, 250, 275, 300, 320, 350, 385, 420, 440, 460, 510, 550, 625 and 680; rated 130V through 680V ac; varistor voltage 205V through 1,100V; surge current rated 15kA for SIOV-Q20K130 to SIOV-

Q20K460 and 13kA for SIOV-Q20K510 to SIOV-Q20K680.

Notes:

1. "SIOV" may not be marked on the varistors.
2. The varistors Series SIOV-Q14K\*\*\* and SIOV-Q20K\*\*\* may be marked alternatively as Q14KVxxx and Q20KVxxx respectively, where xxx is 205-1100 denoting the varistor voltage of the varistors. SIOV-Q20S150A may be marked alternatively as Q20SV241A.
3. These varistors are Certified for use only as components of other Certified equipment where the suitability of the combination is to be determined by CSA International.

Metal oxide varistors for across-the-line use as transient protection on up to 250V ac system:

- Series SIOV-S25K\*\*\*E4R12, (\*\*\* is 130 through 750), rated 130-750V ac (rms), varistor voltage 205-1200V, surge rated 20kA.

Notes:

1. "SIOV" and "R12" may not be marked on the varistors.
2. The varistors may be marked alternatively as "S25KVxxxE4", where xxx is 205-1200 denoting the varistor voltage of the varistors.
3. These varistors are Certified for use only as components of other Certified equipment where the suitability of the combination is to be determined by CSA International.

Metal oxide varistors for across-the-line use as transient protection on up to 250V systems:

- Type SIOV-LS41K\*\*\*QP, where \*\*\* are changeable numbers 130, 140, 150, 230, 250, 275, 320, 385, 420, 440, 460 representing the rms voltage rating of the varistors, varistor voltage 205V through 750V, surge rated 50kA.
- Type SIOV-LS42K\*\*\*QP, where \*\*\* are changeable numbers 250, 275, 320, 385, 420, 440, 460 representing the rms voltage rating of the varistors, varistor voltage 390V through 750V, surge rated 65kA.

Notes:

1. The prefix "SIOV" is optional.
  2. These varistors are Certified for use only as components of other Certified equipment where the suitability of the combination is to be determined by CSA International.
- Type SIOV-SNF05K\*\*\*\*, where \*\*\*\* is 115, 130, 140, 150, 175, 210, 230, 250, 275, 300, 320, 385, 420, 440 or 460, rated 115-460V ac (rms), varistor voltage 180-750V, surge rated 400A.
  - Type SIOV-SNF05K\*\*\*\*E2, where \*\*\*\* is 130, 140, 150, 175, 210, 230, 250, 275 or 300, rated 130-300V ac (rms), varistor voltage 205-470V, surge rated 800A.
  - Type SIOV-SNF07K\*\*\*\*, where \*\*\*\* is 115, 130, 140, 150, 175, 210, 230, 250, 275, 300, 320, 385, 420, 440 or 460, rated 115-460V ac (rms), varistor voltage 180-750V, surge rated 1200A.
  - Type SIOV-SNF07K\*\*\*\*E2, where \*\*\*\* is 130, 140, 150, 175, 210, 230, 250, 275, 300 or 320, rated 130-320V ac (rms), varistor voltage 205-510V, surge rated 1750A.
  - Type SIOV-SNF10K\*\*\*\*, where \*\*\*\* is 115, 130, 140, 150, 175, 210, 230, 250, 275, 300, 320, 385, 420, 440, 460, 510, 550, 625, or 680, rated 115-680V ac (rms), varistor voltage 180-1100V, surge rated 2500A.

- Type SIOV-SNF10K\*\*\*\*E2, where \*\*\*\* is 130, 140, 150, 175, 210, 230, 250, 275, 300, 320, 385, 420, 460, 510, 550, 625 or 680, rated 130-680V ac (rms), varistor voltage 205-1100V, surge rated 3500A.
- Type SIOV-SNF14K\*\*\*\*, where \*\*\*\* is 115, 130, 140, 150, 175, 210, 230, 250, 275, 300, 320, 385, 420, 440, 460, 510, 550, 625, 680 or 1000, rated 115-1100V ac (rms), varistor voltage 180-1800V, surge rated 4500A.
- Type SIOV-SNF14K\*\*\*\*E2, where \*\*\*\* is 130, 140, 150, 175, 210, 230, 250, 275, 300, 320, 385, 420, 460, 510, 550, 625, 680 or 1000, rated 130-1100V ac (rms), varistor voltage 205-1800V, surge rated 5000-6000A.
- Type SIOV-SNF20K\*\*\*\*, where \*\*\*\* is 115, 130, 140, 150, 175, 210, 230, 250, 275, 300, 320, 385, 420, 440, 460, 510, 550, 625, 680 or 1000, rated 115-1100V ac (rms), varistor voltage 180-1800V, surge rated 6500-8000A.
- Type SIOV-SNF20K\*\*\*\*E2, where \*\*\*\* is 130, 140, 150, 175, 210, 230, 250, 275, 300, 320, 385, 420, 460, 510, 550, 625, 680 or 1000, rated 130-1100V ac (rms), varistor voltage 205-1800V, surge rated 10,000A.
- Type SIOV-SNF20K\*\*\*\*E3, where \*\*\*\* is 130, 140, 150, 175, 210, 230, 250, 275, 300 or 320, rated 130-320V ac (rms), varistor voltage 205-510V, surge rated 12,000A.

Notes:

1. These varistors are Certified for use on up to a nominal 250V system.
2. These varistors are Certified for use only as components of other Certified equipment where the suitability of the combination is to be determined by CSA International.
3. The prefix "SIOV" in the model designation above is optional.
4. The above model designations may be followed by suffixes indicating packing information and/or customer's special requirements which do not affect the electrical characteristics of the varistors.
5. Fuse protection is required in combustible enclosures where the varistor is rated 6000A or less.
6. The type designation with a "K" may be replaced by Suffix J or L or M or S indicating the voltage tolerance. K=±10%; J=±5%; L=±15%; M=±20% or S= special tolerance (not more than ± 10%).

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