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## Ceramic transient voltage suppressors

### SMD multilayer transient voltage suppressors for automotive applications

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B72510T5250K062		2012-11-09	2013-03-01	2013-06-01

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at [www.epcos.com/sales](http://www.epcos.com/sales).

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## Multilayer varistors (MLVs)

### Automotive series

#### SMD

#### EPCOS type designation system for automotive series

CN	2220	S	14	B	AUTO	E2	G2	K2
<p><b>Construction:</b>            CT <math>\triangleq</math> Single chip with nickel barrier termination (AgNiSn)            CN <math>\triangleq</math> Single chip with silver-palladium termination (AgPd)            CN...K2 <math>\triangleq</math> Single chip with silver-platinum termination (AgPt)</p>								
<p><b>EAI case sizes:</b>            0603            0805            1206            1210            1812            2220</p>								
<p><b>Varistor voltage tolerance:</b>            K <math>\triangleq</math> <math>\pm 10\%</math>, standard            S <math>\triangleq</math> Special tolerance</p>								
<p><b>Maximum RMS operating voltage (<math>V_{RMS}</math>):</b>            14 <math>\triangleq</math> 14 V  <math>V_{RMS} &lt; 25</math> V are suitable for 12 V DC supply systems  <math>V_{RMS} \geq 25</math> V are suitable for 24 V DC supply systems</p>								
<p><b>Special tolerance for the varistor voltage:</b>            – <math>\triangleq</math> Standard tolerance            B <math>\triangleq</math> Special tolerance</p>								
<p><b>Automotive series</b></p>								
<p><b>Special features:</b>            – <math>\triangleq</math> Standard energy handling capability            E2 <math>\triangleq</math> Increased energy handling capability            HT <math>\triangleq</math> High temperature version            LC <math>\triangleq</math> Low capacitance version            CC <math>\triangleq</math> Controlled capacitance version</p>								
<p><b>Taping mode:</b>            G <math>\triangleq</math> Taped, 180-mm reel, 7"            G2 <math>\triangleq</math> Taped, 330-mm reel, 13"</p>								
<p>AgPt termination</p>								

## Multilayer varistors (MLVs)

### Automotive series

#### SMD

#### Features

- ESD protection up to 25 kV, ISO 10605 level IV, acc. to IEC 61000-4-2 level 4 (8 kV contact, 15 kV air)
- High energy absorption capability
- Low leakage current
- High temperature versions
- Stable protection level
- Bidirectional clamping
- No temperature derating up to 125 °C
- RoHS-compatible
- Nickel barrier and AgPt series suitable for lead-free soldering
- Nickel barrier and AgPt series qualified based on AEC-Q200 rev. C
- PSpice simulation models available

#### Applications

- Transient overvoltage protection in automotive applications: engine management, airbag, control units, electrohydraulic brake, ABS/ESP, sunroof
- Load dump protection
- Jump start protection

#### Design

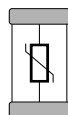
- Multilayer technology
- Lack of plastic or epoxy encapsulation for flammability rating better than UL 94 V-0
- Termination (see “Soldering directions”):
  - CT types with nickel barrier terminations (AgNiSn), recommended for lead-free reflow and wave soldering, and compatible with tin/lead solder.
  - CN types with silver-palladium terminations (AgPd) only suitable for reflow and wave soldering with solder on tin/lead basis and for adhesive glueing.
  - CN...K2 types with silver-platinum terminations (AgPt) suitable for reflow lead-free soldering.

#### V/I characteristics and derating curves

V/I and derating curves are attached to the data sheet. The curves are sorted by  $V_{RMS}$  and then by case size, which is included in the type designation.

#### Single chip

##### Internal circuit



MLV0006-H

##### Available case sizes:

EIA	Metric
0603	1608
0805	2012
1206	3216
1210	3225
1812	4532
2220	5750

**Multilayer varistors (MLVs)**
**Automotive series**
**SMD**
**General technical data**

Maximum RMS operating voltage		$V_{RMS,max}$	14 ... 30	V
Maximum DC operating voltage		$V_{DC,max}$	16 ... 38	V
Maximum surge current	(8/20 $\mu$ s)	$I_{surge,max}$	5 ... 1200	A
Maximum load dump energy	(10 pulses)	$W_{LD}$	1 ... 25	J
Maximum jump start voltage	(5 min)	$V_{jump}$	24.5 ... 45	V
Maximum clamping voltage	(8/20 $\mu$ s)	$V_{clamp,max}$	40 ... 120	V
Operating temperature	AUTO types	$T_{op}$	-55/+125	°C
Operating temperature	HT types	$T_{op}$	-55/+150	°C
Operating temperature	special capacitance types	$T_{op}$	-55/+125	°C
Operating temperature	standard types	$T_{op}$	-55/+125	°C
Storage temperature	all types	LCT/UCT	-55/+150	°C

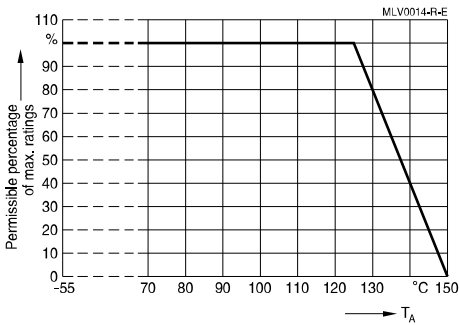
## Multilayer varistors (MLVs)

### Automotive series

#### SMD

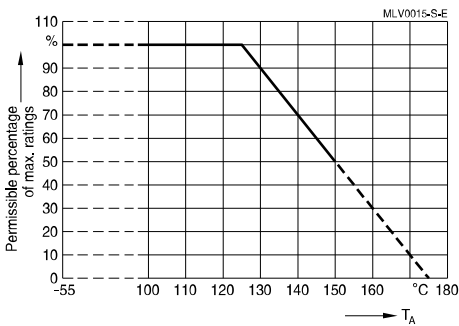
#### Temperature derating

Climatic category:  $-55/+125\text{ }^{\circ}\text{C}$



For automotive, special capacitance and standard range.

Climatic category:  $-55/+150\text{ }^{\circ}\text{C}$



For high temperature (HT) range.

**Multilayer varistors (MLVs)**
**Automotive series**
**SMD**
**Electrical specifications and ordering codes**
**Maximum ratings ( $T_{op,max} = 125\text{ }^{\circ}\text{C}$ , for HT types  $T_{op,max} = 150\text{ }^{\circ}\text{C}$ )**

Type	Ordering code	$V_{RMS,max}$	$V_{DC,max}$	$I_{surge,max}$ (8/20 $\mu\text{s}$ )	$W_{max}$ (2 ms)	$W_{LD}$ (10 pulses)	$P_{diss,max}$
		V	V	A	mJ	J	mW
<b>AUTO range, CN types</b>							
CN1812S14BAUTOE2G2	B72580V3140S272	14	16	800	2400	12	15
CN1812S14BAUTOE2G2K2	B72582V3140S272	14	16	800	2400	12	15
CN1812S14BAUTOG	B72580V1140S262	14	16	800	2400	6	15
CN1812S14BAUTOGK2	B72582V1140S262	14	16	800	2400	6	15
CN2220S14BAUTOE2G2	B72540V3140S272	14	16	1200	5800	25	30
CN2220S14BAUTOE2G2K2	B72542V3140S272	14	16	1200	5800	25	30
CN2220S14BAUTOG	B72540V1140S262	14	16	1200	5800	12	30
CN2220S14BAUTOGK2	B72542V1140S262	14	16	1200	5800	12	30
CN2220S14EAUTOE2G2K2	B72542V3140S572	14	16	1200	5800	25	30
CN2220K30AUTOE2G2	B72540V3300K072	30	34	1200	12000	25	30
CN2220K30AUTOE2G2K2	B72542V3300K072	30	34	1200	12000	25	30
CN2220K30AUTOG	B72540V1300K062	30	34	1200	12000	12	30
CN2220K30AUTOGK2	B72542V1300K062	30	34	1200	12000	12	30
<b>AUTO range, CT types</b>							
CT0603S14BAUTOG	B72500T1140S260	14	16	30	200	-	3
CT0805S14BAUTOG	B72510T1140S262	14	16	120	300	1	8
CT1206S14BAUTOG	B72520T1140S262	14	16	200	600	1.5	8
CT1210S14BAUTOG	B72530T1140S262	14	16	400	1600	3	10
CT1210K17AUTOG	B72530T1170K062	17	22	400	1700	3	10
CT1206K20AUTOG	B72520T1200K062	20	26	200	700	1.5	8
CT1210K20AUTOG	B72530T1200K062	20	26	400	1900	3	10
CT0805K25AUTOG	B72510T1250K062	25	31	80	300	1	5
CT1206K25AUTOG	B72520T1250K062	25	31	200	1000	1.5	8
CT1210K25AUTOG	B72530T1250K062	25	31	300	1700	3	10
<b>High temperature (HT) range</b>							
CN0603S14BHTG2	B72500H0140S270	14	18	30	200	-	3
CN0603S17BHTG	B72500H0170S260	17	22	30	75	-	3
CN1210K17AUTOHTG	B72530H1170K062	17	22	400	1700	3	10
CN0603K25HTG5	B72500H0250K062	25	31	30	300	-	3
<b>Special capacitance range, CT types</b>							
CT0603S14AHSG	B72500T8140S160	14	16	5	30	-	3
CT0603K17CCG	B72500T5170K060	17	22	30	200	-	3
CT0603K17LCG	B72500T2170K060	17	22	10	100	-	1
CT0603S17ALCG	B72500T2170S160	17	22	30	75	-	3
CT0603S17BCCG	B72500T5170S260	17	22	30	75	-	3

**Multilayer varistors (MLVs)**
**Automotive series**
**SMD**
**Characteristics (T<sub>A</sub> = 25 °C)**

Type	V <sub>V</sub> (1 mA)	ΔV <sub>V</sub>	V <sub>jump</sub> (5 min)	V <sub>clamp,max</sub>	I <sub>clamp</sub> (8/20 μs)	C <sub>typ</sub> (1 kHz)	C <sub>min</sub> (1 kHz)	C <sub>max</sub> (1 kHz)
	V	%	V	V	A	pF	pF	pF
<b>AUTO range, CN types</b>								
CN1812S14BAUTOE2G2	22	+23/-0	24.5	40	5	7000	-	-
CN1812S14BAUTOE2G2K2	22	+23/-0	24.5	40	5	7000	-	-
CN1812S14BAUTOG	22	+23/-0	24.5	40	5	5600	-	-
CN1812S14BAUTOGK2	22	+23/-0	24.5	40	5	5600	-	-
CN2220S14BAUTOE2G2	22	+23/-0	24.5	40	10	15000	-	-
CN2220S14BAUTOE2G2K2	22	+23/-0	24.5	40	10	15000	-	-
CN2220S14BAUTOG	22	+23/-0	24.5	40	10	9500	-	-
CN2220S14BAUTOGK2	22	+23/-0	24.5	40	10	9500	-	-
CN2220S14EAUTOE2G2K2	25	±10	24.5	40	10	15000	-	-
CN2220K30AUTOE2G2	47	±10	45	77	10	10000	-	-
CN2220K30AUTOE2G2K2	47	±10	45	77	10	10000	-	-
CN2220K30AUTOG	47	±10	45	77	10	4000	-	-
CN2220K30AUTOGK2	47	±10	45	77	10	4000	-	-
<b>AUTO range, CT types</b>								
CT0603S14BAUTOG	22	+23/-0	24.5	42	1	120	-	-
CT0805S14BAUTOG	22	+23/-0	24.5	42	1	400	-	-
CT1206S14BAUTOG	22	+23/-0	24.5	40	1	800	-	-
CT1210S14BAUTOG	22	+23/-0	24.5	40	2.5	1700	-	-
CT1210K17AUTOG	27	±10	26.5	44	2.5	1800	-	-
CT1206K20AUTOG	33	±10	27	54	1	600	-	-
CT1210K20AUTOG	33	±10	27	54	2.5	1500	-	-
CT0805K25AUTOG	39	±10	29	67	1	250	-	-
CT1206K25AUTOG	39	±10	29	65	1	550	-	-
CT1210K25AUTOG	39	±10	29	65	2.5	1200	-	-
<b>High temperature (HT) range</b>								
CN0603S14BHTG2	22	+23/-0	-	42	1	120	-	-
CN0603S17BHTG	25	+60/-0	-	50	1	-	32 <sup>1)</sup>	74 <sup>1)</sup>
CN1210K17AUTOHTG	27	±10	26.5	44	2.5	1800	-	-
CN0603K25HTG5	39	±10	-	67	1	90 <sup>1)</sup>	-	-
<b>Special capacitance range, CT types</b>								
CT0603S14AHSG	23	+44/-0	-	66	1	15 <sup>1)</sup>	-	30 <sup>1)</sup>
CT0603K17CCG	27	±10	-	46	1	-	128	192
CT0603K17LCG	27	±10	-	50	1	-	-	50 <sup>1)</sup>
CT0603S17ALCG	25	+60/-0	-	50	1	-	-	75 <sup>1)</sup>
CT0603S17BCCG	25	+60/-0	-	50	1	-	31.8 <sup>1)</sup>	74.2 <sup>1)</sup>

1) Measured @ 1 MHz, 1 V



**Multilayer varistors (MLVs)**
**Automotive series**
**SMD**
**Electrical specifications and ordering codes**
**Maximum ratings ( $T_{op,max} = 125\text{ °C}$ , for HT types  $T_{op,max} = 150\text{ °C}$ )**

Type	Ordering code	$V_{RMS,max}$	$V_{DC,max}$	$I_{surge,max}$ (8/20 $\mu$ s)	$W_{max}$ (2 ms)	$W_{LD}$ (10 pulses)	$P_{diss,max}$
		V	V	A	mJ	J	mW
<b>Special capacitance range, CT types</b>							
CT0805K17AUTOLCG	B72510S2170K062	17	22	30	100	-	4
CT0805K17LCG	B72510T2170K062	17	22	30	100	-	4
CT0603S20ACCG	B72500T5200S160	20	26	30	300	-	3
CT0805S20ACC2G2	B72510T9200S172	20	26	80	400	-	5
CT0603L25HSG	B72500T8250L060	25	32	5	-	-	-
CT0805K25CCG	B72510T5250K062	25	31	80	300	-	5
<b>Standard range, CN types</b>							
CN1812K14G	B72580V0140K062	14	18	800	2300	-	15
CN1812K14GK2	B72582V0140K062	14	18	800	2300	-	15
CN2220K14G	B72540V0140K062	14	18	1200	5800	-	20
CN1812K17G	B72580V0170K062	17	22	800	2700	-	15
CN2220K17G	B72540V0170K062	17	22	1200	7200	-	20
CN1812K20G	B72580V0200K062	20	26	800	3000	-	15
CN2220K20G	B72540V0200K062	20	26	1200	7800	-	20
CN2220K20GK2	B72542V0200K062	20	26	1200	7800	-	20
CN1812K25G	B72580V0250K062	25	31	800	3700	-	15
CN2220K25G	B72540V0250K062	25	31	1200	9600	-	20
CN2220K25GK2	B72542V0250K062	25	31	1200	9600	-	20
CN1812K30G	B72580V0300K062	30	38	800	4200	-	15
CN1812K30GK2	B72582V0300K062	30	38	800	4200	-	15
CN2220K30G	B72540V0300K062	30	38	1200	12000	-	20
CN2220K30GK2	B72542V0300K062	30	38	1200	12000	-	20
<b>Standard range, CT types</b>							
CT0603K14G	B72500T0140K060	14	18	30	200	-	3
CT0603S14BG	B72500T0140S160	14	18	30	200	-	3
CT0805K14G	B72510T0140K062	14	18	120	300	-	5
CT1206K14G	B72520T0140K062	14	18	200	500	-	8
CT1210K14G	B72530T0140K062	14	18	400	1500	-	10
CT0603K17G	B72500T0170K060	17	22	30	200	-	3
CT0805K17G	B72510T0170K062	17	22	120	300	-	5
CT1206K17G	B72520T0170K062	17	22	200	600	-	8
CT1210K17G	B72530T0170K062	17	22	400	1700	-	10
CT0603K20G	B72500T0200K060	20	26	30	200	-	3
CT0805K20G	B72510T0200K062	20	26	80	300	-	5

**Multilayer varistors (MLVs)**
**Automotive series**
**SMD**
**Characteristics (T<sub>A</sub> = 25 °C)**

Type	V <sub>V</sub> (1 mA)	ΔV <sub>V</sub>	V <sub>jump</sub> (5 min)	V <sub>clamp,max</sub>	I <sub>clamp</sub> (8/20 μs)	C <sub>typ</sub> (1 kHz)	C <sub>min</sub> (1 kHz)	C <sub>max</sub> (1 kHz)
	V	%	V	V	A	pF	pF	pF
<b>Special capacitance range, CT types</b>								
CT0805K17AUTOLCG	25	+32/-0	-	50	1	-	-	100 <sup>1)</sup>
CT0805K17LCG	25	+32/-0	-	50	1	-	-	100 <sup>1)</sup>
CT0603S20ACCG	30	+40/-0	-	67	1	-	64 <sup>1)</sup>	96 <sup>1)</sup>
CT0805S20ACCG2G2	29.7	+34/-0	-	64	1	-	170	270
CT0603L25HSG	51.9	+35/-0	-	120	1	10 <sup>1)</sup>	-	15 <sup>1)</sup>
CT0805K25CCG	39	±10	-	67	1	-	162.5	337.5
<b>Standard range, CN types</b>								
CN1812K14G	22	±10	-	38	5	4500	-	-
CN1812K14GK2	22	±10	-	38	5	4500	-	-
CN2220K14G	22	±10	-	38	10	10000	-	-
CN1812K17G	27	±10	-	44	5	4000	-	-
CN2220K17G	27	±10	-	44	10	9000	-	-
CN1812K20G	33	±10	-	54	5	3000	-	-
CN2220K20G	33	±10	-	54	10	7000	-	-
CN2220K20GK2	33	±10	-	54	10	7000	-	-
CN1812K25G	39	±10	-	65	5	2500	-	-
CN2220K25G	39	±10	-	65	10	5000	-	-
CN2220K25GK2	39	±10	-	65	10	5000	-	-
CN1812K30G	47	±10	-	77	5	2000	-	-
CN1812K30GK2	47	±10	-	77	5	2000	-	-
CN2220K30G	47	±10	-	77	10	4000	-	-
CN2220K30GK2	47	±10	-	77	10	4000	-	-
<b>Standard range, CT types</b>								
CT0603K14G	22	±10	-	40	1	100	-	-
CT0603S14BG	22	+23/-0	-	42	1	120	-	-
CT0805K14G	22	±10	-	40	1	350	-	-
CT1206K14G	22	±10	-	38	1	700	-	-
CT1210K14G	22	±10	-	38	2.5	2000	-	-
CT0603K17G	27	±10	-	46	1	100	-	-
CT0805K17G	27	±10	-	46	1	400	-	-
CT1206K17G	27	±10	-	44	1	650	-	-
CT1210K17G	27	±10	-	44	2.5	1800	-	-
CT0603K20G	33	±10	-	56	1	90	-	-
CT0805K20G	33	±10	-	56	1	300	-	-

**Multilayer varistors (MLVs)**
**Automotive series**
**SMD**
**Electrical specifications and ordering codes**
**Maximum ratings ( $T_{op,max} = 125\text{ °C}$ , for HT types  $T_{op,max} = 150\text{ °C}$ )**

Type	Ordering code	$V_{RMS,max}$	$V_{DC,max}$	$I_{surge,max}$ (8/20 $\mu$ s)	$W_{max}$ (2 ms)	$W_{LD}$ (10 pulses)	$P_{diss,max}$
		V	V	A	mJ	J	mW
<b>Standard range, CT types</b>							
CT1206K20G	B72520T0200K062	20	26	200	700	-	8
CT1210K20G	B72530T0200K062	20	26	400	1900	-	10
CT0603K25G	B72500T0250K060	25	31	30	300	-	3
CT0805K25G	B72510T0250K062	25	31	80	300	-	5
CT1206K25G	B72520T0250K062	25	31	200	1000	-	8
CT1210K25G	B72530T0250K062	25	31	300	1700	-	10
CT0805K30G	B72510T0300K062	30	38	80	300	-	5
CT1206K30G	B72520T0300K062	30	38	200	1100	-	8
CT1210K30G	B72530T0300K062	30	38	300	2000	-	10

**Characteristics ( $T_A = 25\text{ °C}$ )**

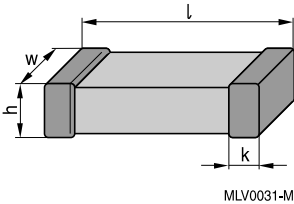
Type	$V_V$ (1 mA)	$\Delta V_V$	$V_{jump}$ (5 min)	$V_{clamp,max}$	$I_{clamp}$ (8/20 $\mu$ s)	$C_{typ}$ (1 kHz)	$C_{min}$ (1 kHz)	$C_{max}$ (1 kHz)
	V	%	V	V	A	pF	pF	pF
<b>Standard range, CT types</b>								
CT1206K20G	33	$\pm 10$	-	54	1	600	-	-
CT1210K20G	33	$\pm 10$	-	54	2.5	1500	-	-
CT0603K25G	39	$\pm 10$	-	67	1	90	-	-
CT0805K25G	39	$\pm 10$	-	67	1	250	-	-
CT1206K25G	39	$\pm 10$	-	65	1	550	-	-
CT1210K25G	39	$\pm 10$	-	65	2.5	1200	-	-
CT0805K30G	47	$\pm 10$	-	77	1	200	-	-
CT1206K30G	47	$\pm 10$	-	77	1	500	-	-
CT1210K30G	47	$\pm 10$	-	77	2.5	1000	-	-

## Multilayer varistors (MLVs)

### Automotive series

### SMD

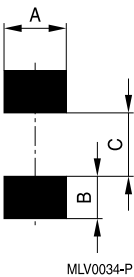
#### Dimensional drawing



#### Dimensions in mm

Case size EIA / mm	l	w	h	k
0603 / 1608	1.6 ±0.15	0.80 ±0.10	0.9 max.	0.10 ... 0.40
0805 / 2012	2.0 ±0.20	1.25 ±0.15	1.4 max.	0.13 ... 0.75
1206 / 3216	3.2 ±0.30	1.60 ±0.20	1.7 max.	0.25 ... 0.75
1210 / 3225	3.2 ±0.30	2.50 ±0.25	1.7 max.	0.25 ... 0.75
1812 / 4532	4.5 ±0.40	3.20 ±0.30	2.5 max.	0.25 ... 1.00
2220 / 5750	5.7 ±0.40	5.00 ±0.40	2.5 max.	0.25 ... 1.00

#### Recommended solder pad layout



#### Dimensions in mm

Case size EIA / mm	A	B	C
0603 / 1608	1.00	1.00	1.00
0805 / 2012	1.40	1.20	1.00
1206 / 3216	1.80	1.20	2.10
1210 / 3225	2.80	1.20	2.10
1812 / 4532	3.60	1.50	3.00
2220 / 5750	5.50	1.50	4.20

**Multilayer varistors (MLVs)**
**Automotive series**
SMD
**Delivery mode**

EIA case size	Taping	Reel size mm	Packing unit pcs.	Type	Ordering code
0603	Blister	180	4000	CN0603K25HTG5	B72500H0250K062
0603	Cardboard	330	16000	CN0603S14BHTG2	B72500H0140S270
0603	Cardboard	180	4000	CN0603S17BHTG	B72500H0170S260
1210	Blister	180	3000	CN1210K17AUTOHTG	B72530H1170K062
1812	Blister	180	1500	CN1812K14G	B72580V0140K062
1812	Blister	180	1500	CN1812K14GK2	B72582V0140K062
1812	Blister	180	1500	CN1812K17G	B72580V0170K062
1812	Blister	180	1500	CN1812K20G	B72580V0200K062
1812	Blister	180	1000	CN1812K25G	B72580V0250K062
1812	Blister	180	1000	CN1812K30G	B72580V0300K062
1812	Blister	180	1000	CN1812K30GK2	B72582V0300K062
1812	Blister	330	3000	CN1812S14BAUTOE2G2	B72580V3140S272
1812	Blister	330	3000	CN1812S14BAUTOE2G2K2	B72582V3140S272
1812	Blister	180	1500	CN1812S14BAUTOG	B72580V1140S262
1812	Blister	180	1500	CN1812S14BAUTOGK2	B72582V1140S262
2220	Blister	180	1500	CN2220K14G	B72540V0140K062
2220	Blister	180	1500	CN2220K17G	B72540V0170K062
2220	Blister	180	1500	CN2220K20G	B72540V0200K062
2220	Blister	180	1500	CN2220K20GK2	B72542V0200K062
2220	Blister	180	1000	CN2220K25G	B72540V0250K062
2220	Blister	180	1000	CN2220K25GK2	B72542V0250K062
2220	Blister	330	3000	CN2220K30AUTOE2G2	B72540V3300K072
2220	Blister	330	3000	CN2220K30AUTOE2G2K2	B72542V3300K072
2220	Blister	180	1000	CN2220K30AUTOG	B72540V1300K062
2220	Blister	180	1000	CN2220K30AUTOGK2	B72542V1300K062
2220	Blister	180	1000	CN2220K30G	B72540V0300K062
2220	Blister	180	1000	CN2220K30GK2	B72542V0300K062
2220	Blister	330	3000	CN2220S14BAUTOE2G2	B72540V3140S272
2220	Blister	330	3000	CN2220S14BAUTOE2G2K2	B72542V3140S272
2220	Blister	180	1500	CN2220S14BAUTOG	B72540V1140S262
2220	Blister	180	1500	CN2220S14BAUTOGK2	B72542V1140S262
2220	Blister	330	3000	CN2220S14EAUTOE2G2K2	B72542V3140S572
0603	Cardboard	180	4000	CT0603K14G	B72500T0140K060
0603	Cardboard	180	4000	CT0603K17CCG	B72500T5170K060
0603	Cardboard	180	4000	CT0603K17G	B72500T0170K060
0603	Cardboard	180	4000	CT0603K17LCG	B72500T2170K060
0603	Cardboard	180	4000	CT0603K20G	B72500T0200K060
0603	Cardboard	180	4000	CT0603K25G	B72500T0250K060
0603	Cardboard	180	4000	CT0603L25HSG	B72500T8250L060
0603	Cardboard	180	4000	CT0603S14AHSG	B72500T8140S160
0603	Cardboard	180	4000	CT0603S14BAUTOG	B72500T1140S260
0603	Cardboard	180	4000	CT0603S14BG	B72500T0140S160

**Multilayer varistors (MLVs)**
**Automotive series**
SMD

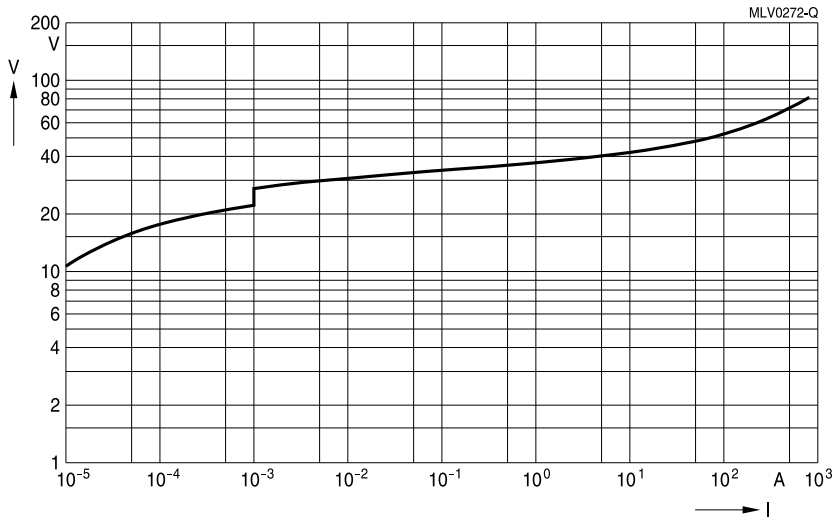
EIA case size	Taping	Reel size mm	Packing unit pcs.	Type	Ordering code
0603	Cardboard	180	4000	CT0603S17ALCG	B72500T2170S160
0603	Cardboard	180	4000	CT0603S17BCCG	B72500T5170S260
0603	Cardboard	180	4000	CT0603S20ACCG	B72500T5200S160
0805	Blister	180	3000	CT0805K14G	B72510T0140K062
0805	Blister	180	3000	CT0805K17AUTOLCG	B72510S2170K062
0805	Blister	180	3000	CT0805K17G	B72510T0170K062
0805	Blister	180	3000	CT0805K17LCG	B72510T2170K062
0805	Blister	180	3000	CT0805K20G	B72510T0200K062
0805	Blister	180	3000	CT0805K25AUTOG	B72510T1250K062
0805	Blister	180	3000	CT0805K25CCG	B72510T5250K062
0805	Blister	180	3000	CT0805K25G	B72510T0250K062
0805	Blister	180	3000	CT0805K30G	B72510T0300K062
0805	Blister	180	3000	CT0805S14BAUTOG	B72510T1140S262
0805	Blister	330	12000	CT0805S20ACC2G2	B72510T9200S172
1206	Blister	180	3000	CT1206K14G	B72520T0140K062
1206	Blister	180	3000	CT1206K17G	B72520T0170K062
1206	Blister	180	3000	CT1206K20AUTOG	B72520T1200K062
1206	Blister	180	3000	CT1206K20G	B72520T0200K062
1206	Blister	180	2000	CT1206K25AUTOG	B72520T1250K062
1206	Blister	180	2000	CT1206K25G	B72520T0250K062
1206	Blister	180	2000	CT1206K30G	B72520T0300K062
1206	Blister	180	3000	CT1206S14BAUTOG	B72520T1140S262
1210	Blister	180	3000	CT1210K14G	B72530T0140K062
1210	Blister	180	3000	CT1210K17AUTOG	B72530T1170K062
1210	Blister	180	2000	CT1210K17G	B72530T0170K062
1210	Blister	180	3000	CT1210K20AUTOG	B72530T1200K062
1210	Blister	180	3000	CT1210K20G	B72530T0200K062
1210	Blister	180	2000	CT1210K25AUTOG	B72530T1250K062
1210	Blister	180	2000	CT1210K25G	B72530T0250K062
1210	Blister	180	2000	CT1210K30G	B72530T0300K062
1210	Blister	180	3000	CT1210S14BAUTOG	B72530T1140S262

**Multilayer varistors (MLVs)**

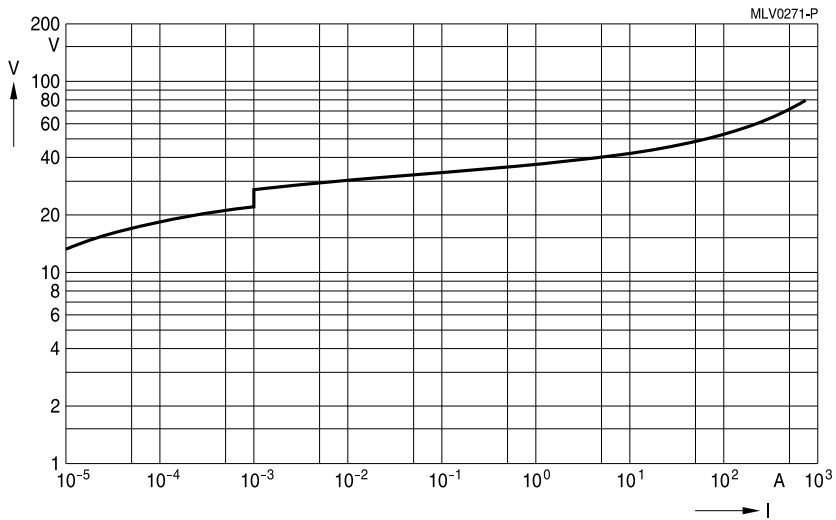
**Automotive series**

**SMD**

**V/I characteristics for automotive range, CN types**



**CN1812S14BAUTOE2G2(K2)**



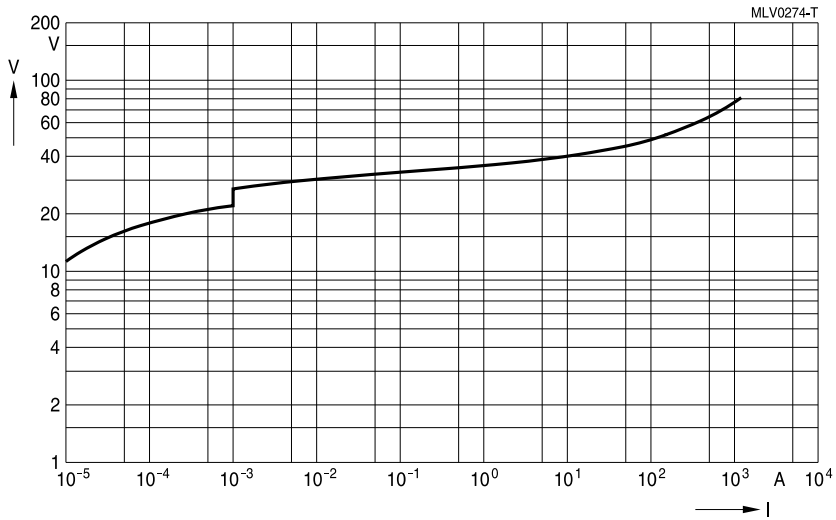
**CN1812S14BAUTOG(K2)**

**Multilayer varistors (MLVs)**

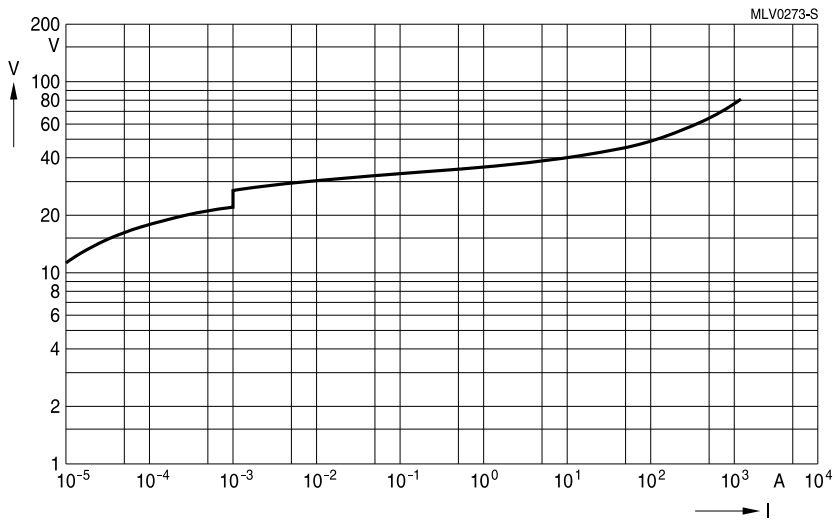
**Automotive series**

**SMD**

**V/I characteristics for automotive range, CN types**



**CN2220S14BAUTOE2G2(K2)**



**CN2220S14BAUTOG(K2)**

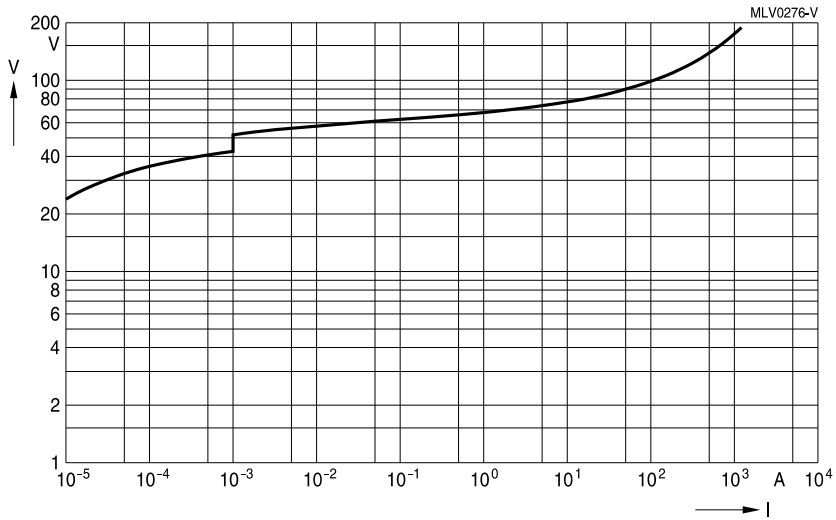


**Multilayer varistors (MLVs)**

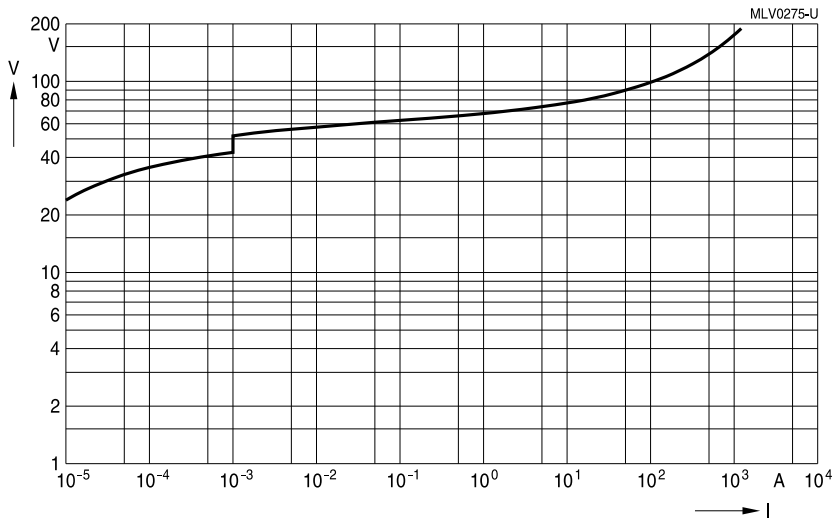
**Automotive series**

**SMD**

**V/I characteristics for automotive range, CN types**



**CN2220K30AUTOE2G2(K2)**



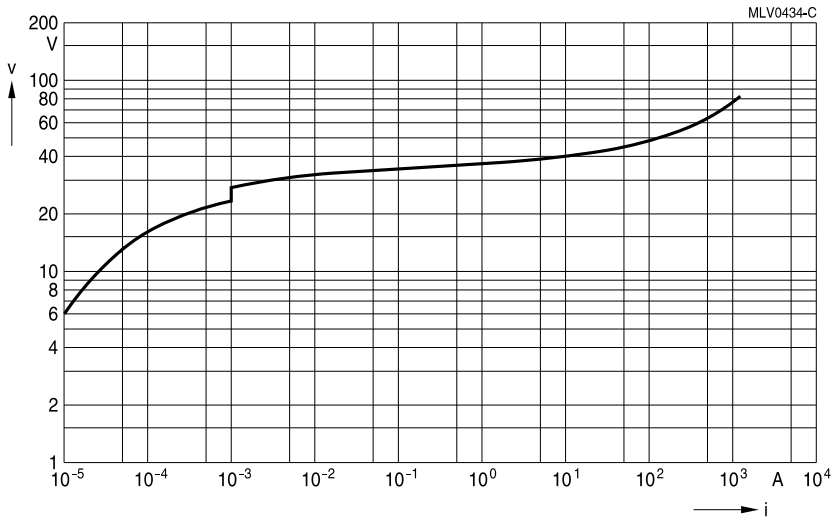
**CN2220K30AUTOG(K2)**

**Multilayer varistors (MLVs)**

**Automotive series**

**SMD**

**V/I characteristics for automotive range, CN types**



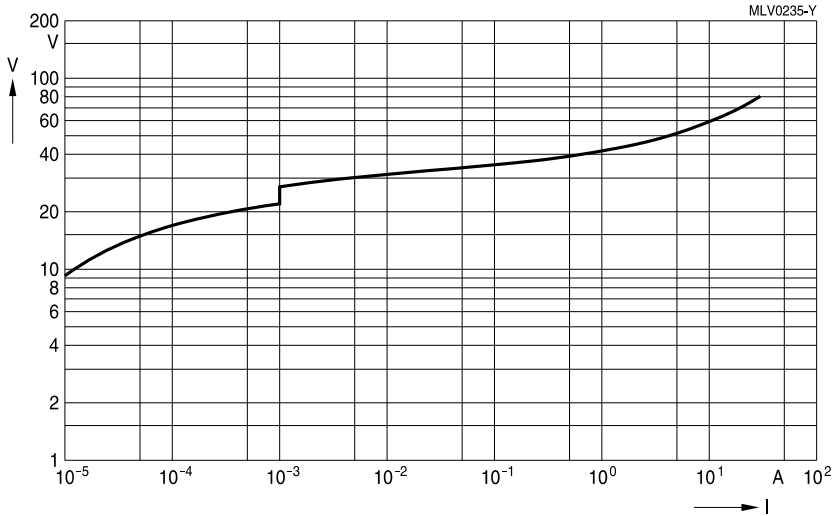
CN2220S14EAUTOE2G2K2

**Multilayer varistors (MLVs)**

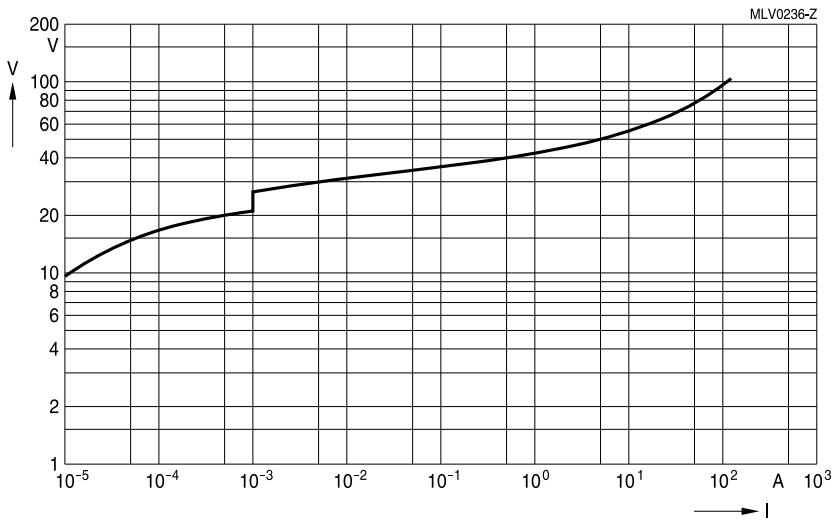
**Automotive series**

**SMD**

**V/I characteristics for automotive range, CT types**



**CT0603S14BAUTOG**



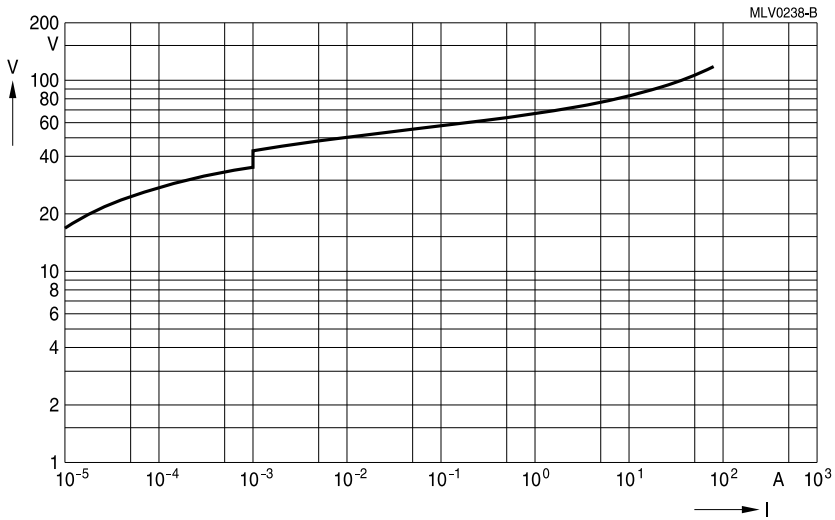
**CT0805S14BAUTOG**

**Multilayer varistors (MLVs)**

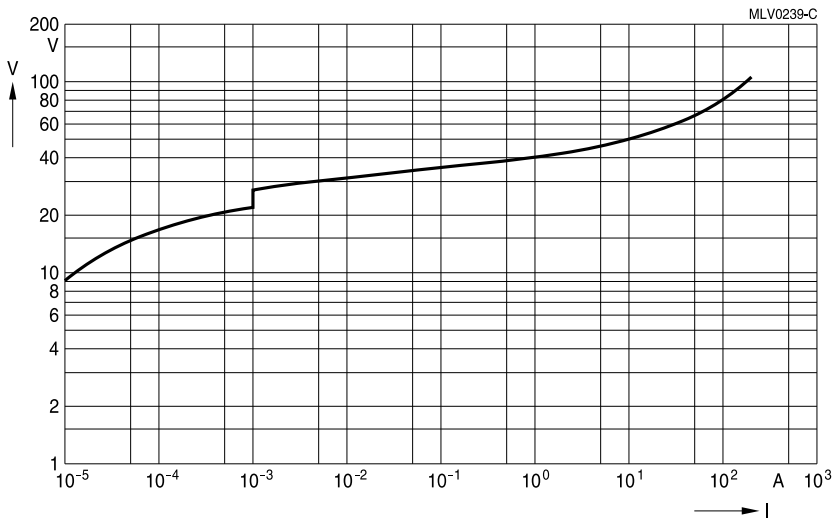
**Automotive series**

**SMD**

**V/I characteristics for automotive range, CT types**



**CT0805K25AUTOG**



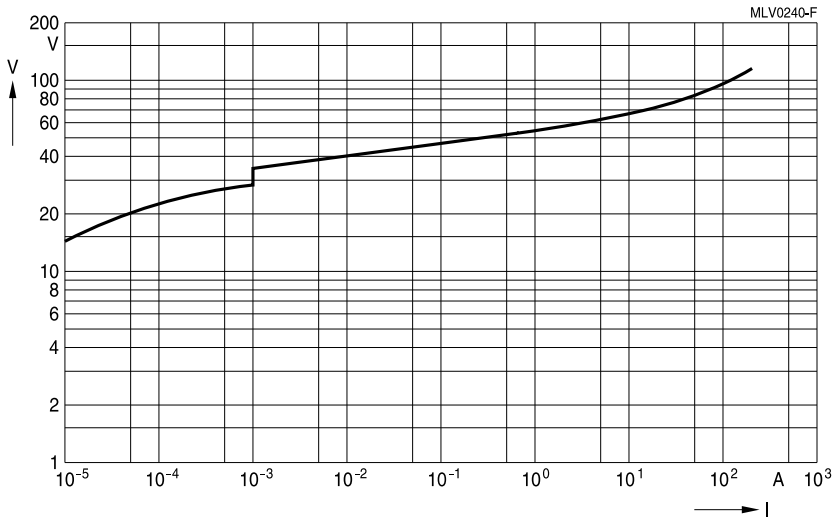
**CT1206S14BAUTOG**

Multilayer varistors (MLVs)

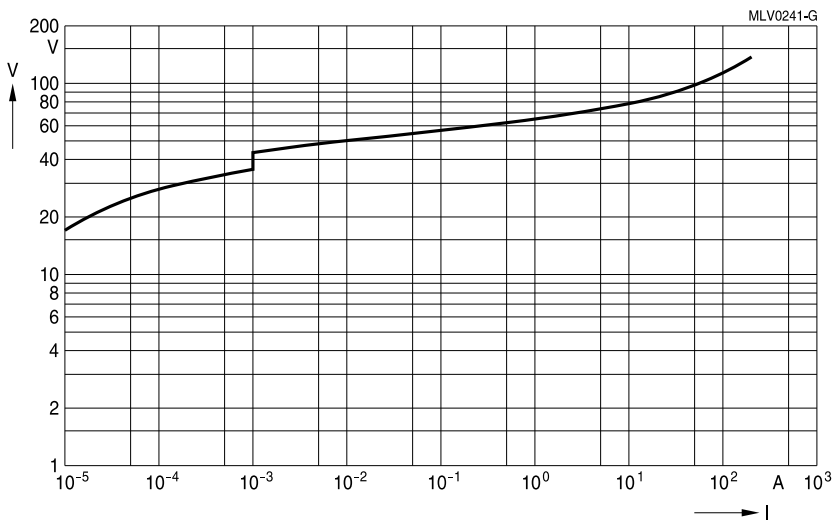
Automotive series

SMD

V/I characteristics for automotive range, CT types



CT1206K20AUTOG



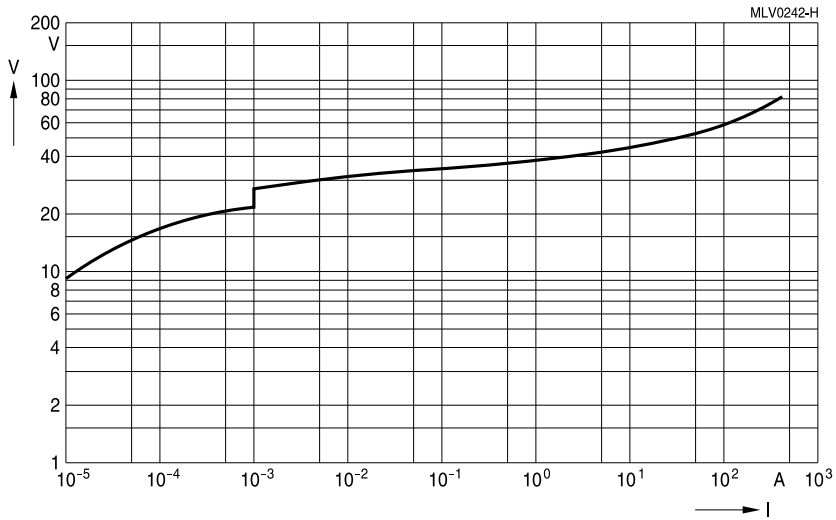
CT1206K25AUTOG

**Multilayer varistors (MLVs)**

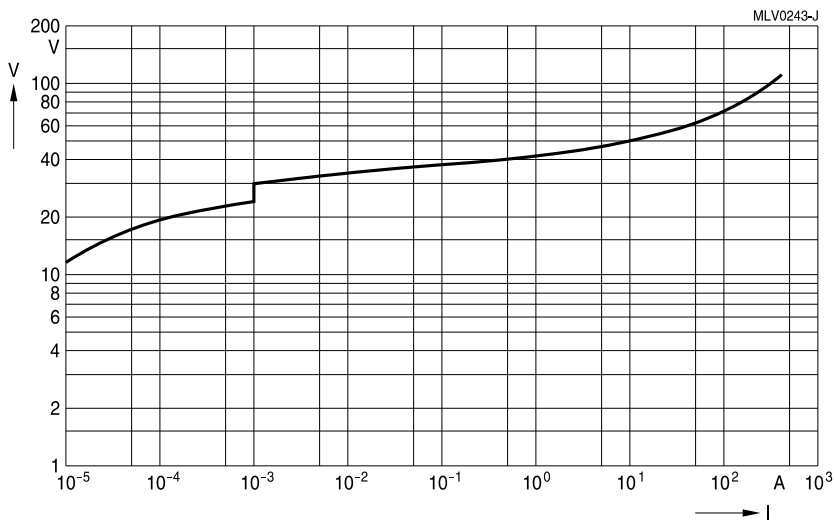
**Automotive series**

**SMD**

**V/I characteristics for automotive range, CT types**



**CT1210S14BAUTOG**



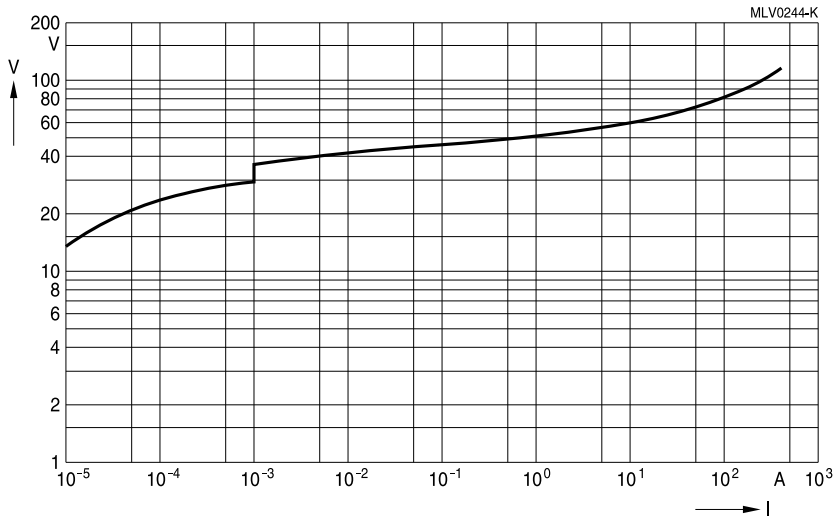
**CT1210K17AUTOG**

**Multilayer varistors (MLVs)**

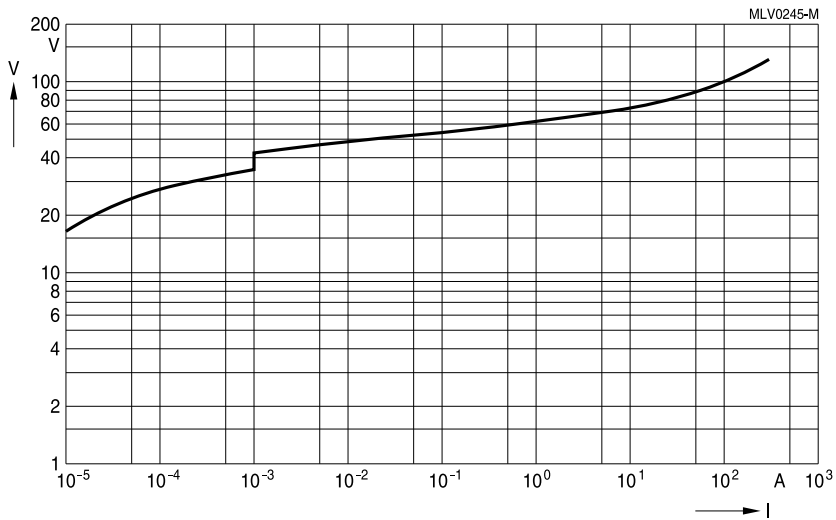
**Automotive series**

**SMD**

**V/I characteristics for automotive range, CT types**



**CT1210K20AUTOG**



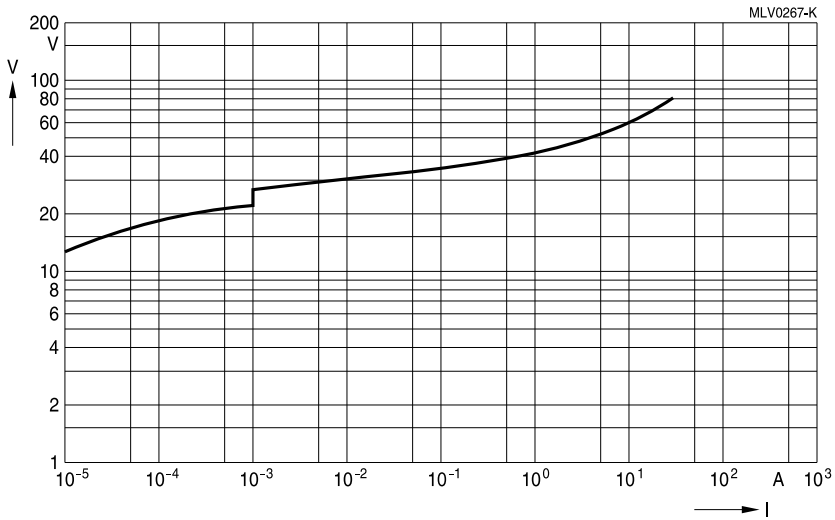
**CT1210K25AUTOG**

**Multilayer varistors (MLVs)**

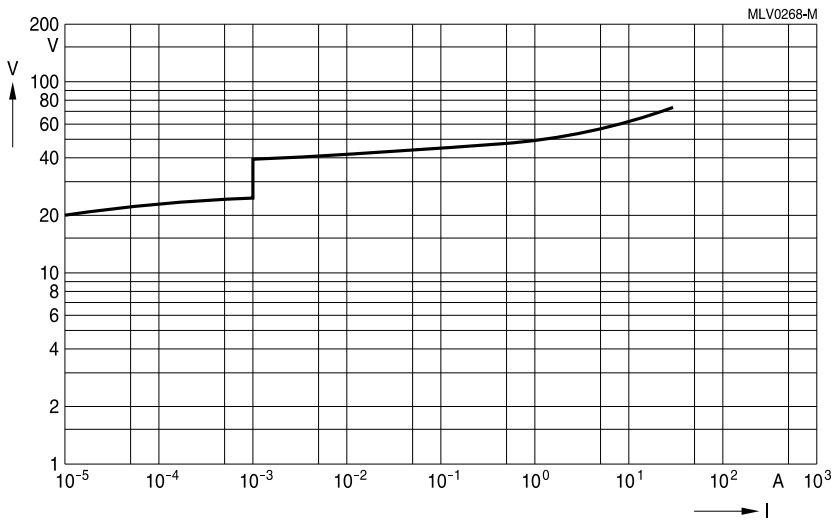
**Automotive series**

**SMD**

**V/I characteristics for high temperature (HT) range**



**CN0603S14BHTG2**



**CN0603S17BHTG**

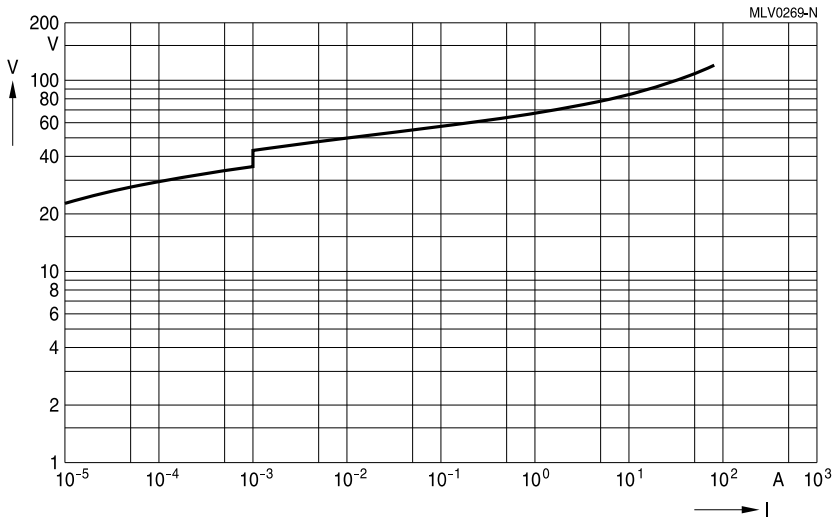


**Multilayer varistors (MLVs)**

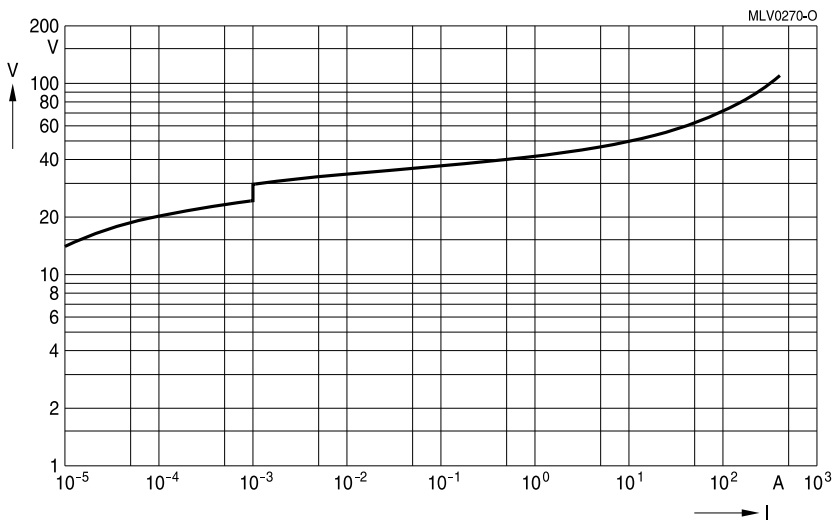
**Automotive series**

**SMD**

**V/I characteristics for high temperature (HT) range**



**CN0603K25HTG**



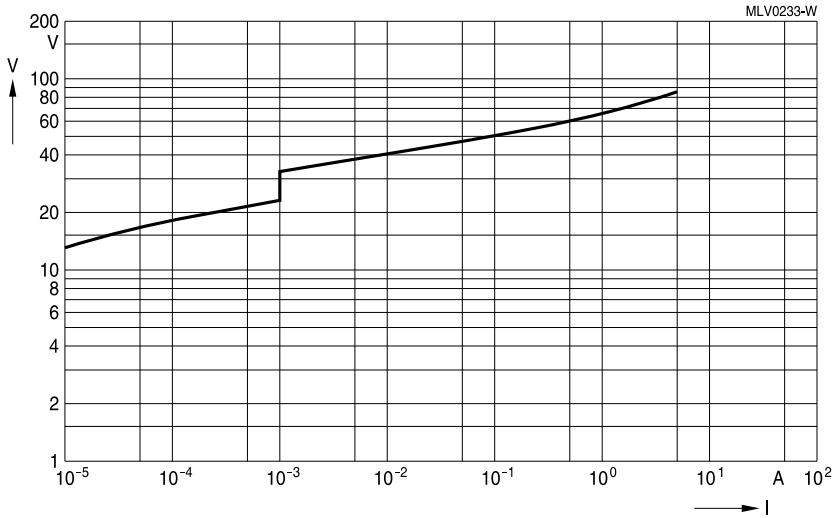
**CN1210K17AUTOHTG**

**Multilayer varistors (MLVs)**

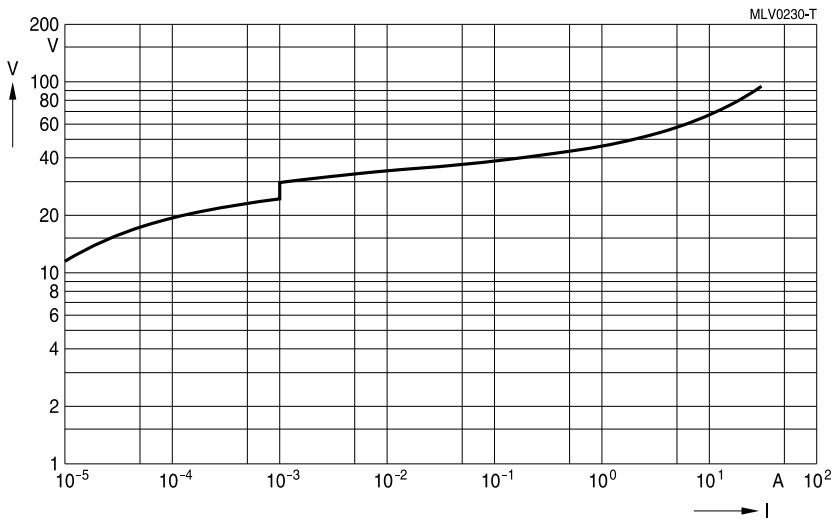
**Automotive series**

**SMD**

**V/I characteristics for special capacitance range**



**CT0603S14AHSG**



**CT0603K17CCG**