EPCOS Product Brief 2013

Surge Arresters – EHV Series

Gas Discharge Tubes for Enhanced High-Voltage Applications

Applications

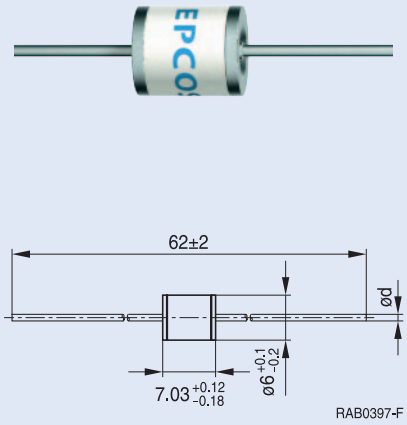
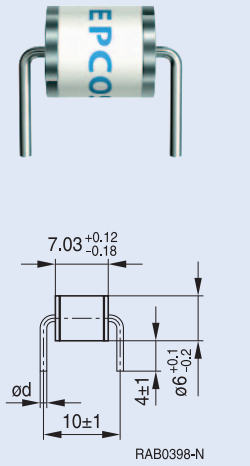
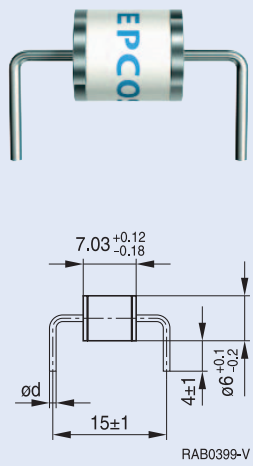
- **Automotive**
  - On-board chargers in electric and hybrid vehicles
  - EV charging stations
- **Consumer**
  - Air-conditioning
  - Power supplies
  - Printers and telefax
- **Industrial**
  - LED street lighting
  - Photovoltaics
  - RF antenna circuits
  - UPS

Features

- Built to automotive standard (ISO TS 16949)
- Small sizes
- Fast response time
- High current handling capability
- Stable performance over service life
- Low capacitance and insertion loss
- High insulation resistance
- RoHS-compliant
- Different wire configurations and packaging upon request

Surge Arresters – EHV Series

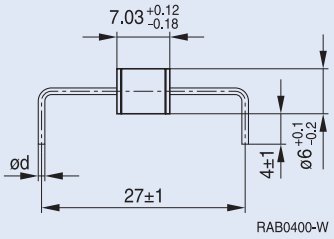
2-electrode arresters
Light-duty / High-voltage types

EHV6*-H…	EHV6*-H…B1	EHV6*-H…B2
		

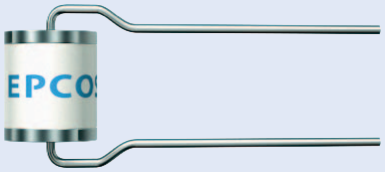
Type	EHV62-H25	EHV63-H25B2	EHV63-H25T7	EHV63-H30	EHV63-H30B2	EHV63-H30B7	EHV63-H30T7
Ordering code	B88069X 1893S102	B88069X 2023B502	B88069X 2033A802	B88069X 2553S102	B88069X 2043B502	B88069X 2053B252	B88069X 2063A802
Lead wire diameter d	0.8	0.6	0.6	0.6	0.6	0.6	0.6
Nom. DC spark-over voltage V_{sdcN}	2500			3000			
Tolerance of V_{sdcN}	±20			±20			
Impulse spark-over voltage							
@ 100 V/µs 99% of measured values	< 3300			< 3800			
@ 100 V/µs typical values	< 3000			< 3400			
@ 1 kV/µs 99% of measured values	< 3400			< 4000			
@ 1 kV/µs typical values	< 3100			< 3500			
@ 5 kV/µs 99% of measured values	< 3900			< 4500			
@ 5 kV/µs typical values	< 3400			< 4000			
Service life							
1 operation 8/20 µs	5			5			
3 operation 8/20 µs	3			3			
300 operations 8/20 µs	100			100			
Insulation resistance	> 1			> 1			
Capacitance @ 1 MHz	< 1			< 1			
AC withstand voltage	1250			1500			

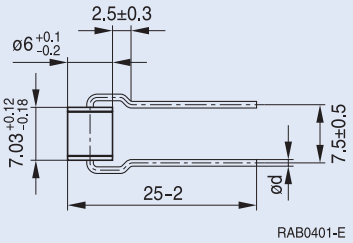
Other combinations of voltage level, bending style and wire diameter on request.

EHV6*-H…B7



EHV6*-H…T7





EHV62-H36	EHV62-H36B1	EHV62-H36B2	EHV63-H36B2	EHV63-H36B7	EHV63-H36T7	EHV62-H40	EHV63-H40	EHV62-H45	
B88069X 1683S102	B88069X 2213B502	B88069X 1693B502	B88069X 2073B502	B88069X 2083B252	B88069X 2093A802	B88069X 2103S102	B88069X 2563S102	B88069X 1793S102	
0.8	0.8	0.8	0.6	0.6	0.6	0.8	0.6	0.8	mm
3600						4000		4500	V
±20						±20		±20	%
< 4350						< 5000		< 5200	V
< 4150						< 4600		< 4800	V
< 4500						< 5400		< 5500	V
< 4300						< 4800		< 5000	V
< 5000						< 5600		< 6000	V
< 4500						< 5000		< 5500	V
5						5		5	kA
3						3		3	kA
100						100		100	A
> 1						> 1		> 1	GΩ
< 1						< 1		< 1	pF
1800						2000		2250	V

Surge Arresters – EHV Series

Overvoltage protection by gas discharge tubes

Voltage surges in powered systems caused by lightning or line power faults can affect sensitive electronic circuitry. Gas discharge tubes (GDTs) have long been the solution of choice for overvoltage protection in installations such as underground cables, overhead lines, private branch exchanges and telecom main distribution frames. Now they are standard solution for preventing damage by surges in DSL- and cable modems, fax machines and other communication equipment.

GDTs shunt surge current to ground and limit overvoltage to a harmless level. Major benefits of GDTs are their high current handling capability (up to several kA), high insulation resistance and extremely low capacitance, making them almost unnoticed in normal operation.

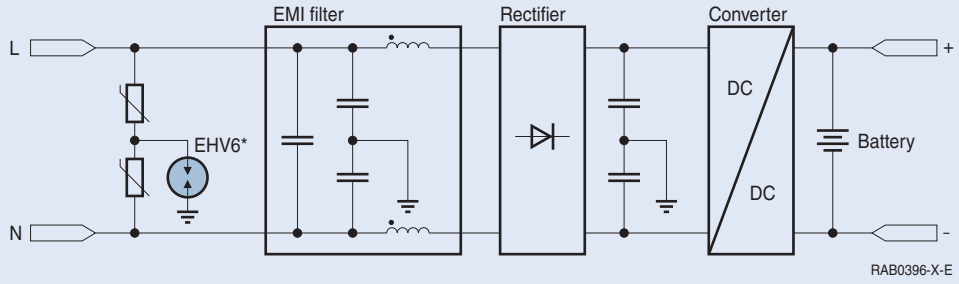
With the implementation of onboard electric circuitry as part of the introduction of electric and plug-in hybrid drives, automobiles are now confronted with the same dangers as fixed installations or equipment. In the new EHV series EPCOS offers arresters with high current handling capability that are especially designed for the needs of the automotive industry.

All tubes are produced at a site certified to ISO TS 16949 standard together with products that have been in use in automotive applications for almost 20 years. The arresters are tested by automotive standards like IEC 60068 and can sustain high humidity environments and heavy vibration while maintaining full operability at all times. They can withstand high AC voltages without ignition. The EPCOS EHV series is fully UL graded (UL1449, E319264) and can be delivered for many different voltage levels as well as in different wire configurations.

Overvoltage protection of battery chargers in automotive application

2-electrode arrester with varistors

A 2-electrode arrester is connected to the center point of the series connection of two varistors



Structure of ordering codes: The ordering code for one and the same product can be represented differently in data sheets, data books, other publications and the website of EPCOS, or in order-related documents such as shipping notes, order confirmations and product labels. **The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products.** Detailed information can be found on the Internet under www.epcos.com/orderingcodes.

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