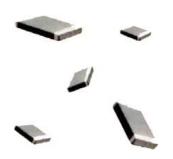
# Stackpole Electronics, Inc.

Resistive Product Solutions

## Description:

Almost all electronic systems in internal-combustion powered vehicles, e.g., anti-lock brakes, direct ignition, airbag control, wiper motors, etc. are susceptible to damage from destructive voltage transients.

AV varistors are TVS chips that have suppression characteristics enabling protection from -55°C to +125°C (+150°C for AVY). These multilayer varistors offer excellent transient energy absorption in a small package due to improved internal energy distribution. AV series parts require significantly smaller space and pad area than silicon TVS diodes, offering greater circuit board layout flexibility for designer.



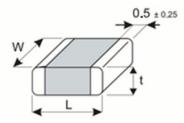
#### Features:

- AC operating voltage range (Vrms) from 14V to 40V
- DC operating voltage (Vdc) from 16V to 56V
- Broad range of current and energy handling capabilities
- 6 model sizes available: 0805, 1206, 1210, 1812, 2220 and 3225
- AVY high temperature product will have performance characteristics different from the AV listed here. Contact Stackpole for specific details.
- AEC-Q200 qualified Grade 1
- No plastic coating guarantees better flammability rating
- Dimensional and weight savings on PC board
- AgPd end terminations
- Ultra-low inductance, leadless chip guarantees the fastest response time to transient surges
- Contact Stackpole for larger reel inquiries
- RoHS compliant by means of exemption 7c-I
- Halogen-free
- REACH compliant

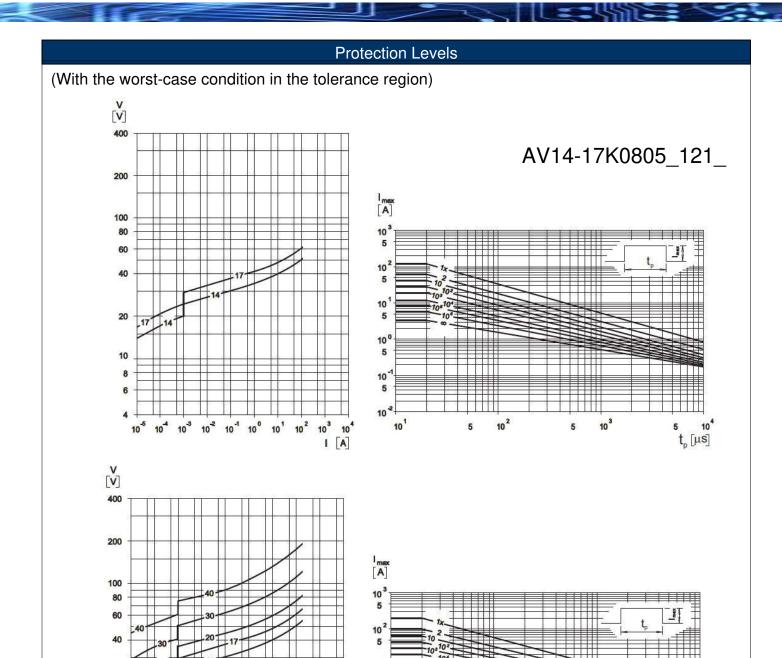
General Technical Data						
Operating Temperature Range - AV	-55°C to +125°C					
Operating Temperature Range - AVY	-55°C to +150°C					
Storage Temperature Range	-55°C to +150°C					
Threshold Voltage Temperature Coefficient	<+0.05 % /ºC					
Response Time	< 2 ns					
Ag/Pd Terminations	Recommended and suitable for Pb-containing soldering					
Nickel Barrier Terminations	Recommended and suitable for Pb-contaning and Pb-free soldering					

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# **Device Ratings and Dimensions**



											-			
5	V <sub>RMS</sub>	V <sub>DC</sub>	V <sub>N</sub>	V <sub>JUMP</sub>	V <sub>C</sub>	l <sub>c</sub>	I <sub>MAX</sub>	W <sub>MAX</sub>	W <sub>LD</sub>	P <sub>MAX</sub>	C <sub>TYP</sub>	L	W	t <sub>MAX</sub>
Part Number		, II )	, ,	(5 min)	/ II \	' '	' '	(10/1000 µSec)	10 x		(@ 1kHz)		, ,	, ,
40\/ D	(voits)	(volts)	(volts)	(volts)	(volts)	(amps)	(amps)	(joules)	(joules)	(watts)	(nF)	(mm)	(mm)	(mm)
12V Power Supply														
AV14K0805121	14	16	24	24.5	40	1	120	0.3	1	0.008	0.44		1.25 ± 0.20	
AV14K1206201	14	16	24	24.5	40	1	200	0.6	1.5	0.008	1		1.60 ± 0.20	
AV14K1210401	14	16	24	24.5	40	2.5	400	1.6	3	0.01	2.35		2.50 ± 0.25	_
AV14K1812801	14	16	24	24.5	40	5	800	2.4	6	0.015	4.5		3.20 ± 0.30	
AV14K2220122	14	16	24	24.5	40	10	1200	5.8	12	0.03	10		$5.00 \pm 0.40$	
AV14K3225202	14	16	24	24.5	40	20	2000	12.5	25	0.04			$6.30 \pm 0.40$	
AV17K0805121	17	20	27	30	44	1	120	0.5	1	0.008	0.37		1.25 ± 0.20	
AV17K1206201	17	20	27	30	44	1	200	1.1	1.5	0.008	0.81		1.60 ± 0.20	
AV17K1210401	17	20	27	30	44	2.5	400	1.8	3	0.01	2		2.50 ± 0.25	
AV17K1812801	17	20	27	30	44	5	800	2.9	6	0.015	3.8		$3.20 \pm 0.30$	
AV17K2220202	17	20	27	30	44	10	1200	7.2	12	0.03	8	$5.7 \pm 0.50$	$5.00 \pm 0.40$	1.4
AV17K3225202	17	20	27	30	44	20	2000	13.8	25	0.04	13.2	$8.0 \pm 0.50$	$6.30 \pm 0.40$	1.5
24V Power Supply														
AV20K1206201	20	26	33	30	54	1	200	1.6	1.5	0.008	0.78	$3.2 \pm 0.30$	1.60 ± 0.20	1.2
AV20K1210401	20	26	33	30	54	2.5	400	1.9	3	0.01	1.65	$3.2 \pm 0.30$	2.50 ± 0.25	1.3
AV20K1812801	20	26	33	30	54	5	800	3	6	0.015	3.3	4.7 ± 0.40	$3.20 \pm 0.30$	1.3
AV20K2220202	20	26	33	30	54	10	1200	8	12	0.03	7	5.7 ± 0.50	5.00 ± 0.40	1.4
AV20K3225202	20	26	33	30	54	20	2000	15	25	0.04	11	8.0 ± 0.50	6.30 ± 0.40	1.5
AV30K1206201	30	34	47	50	77	1	200	2	1.5	0.008	0.53	$3.2 \pm 0.30$	1.60 ± 0.20	1.2
AV30K1210401	30	34	47	50	77	2.5	400	2.3	3	0.01	1.1	3.2 ± 0.30	2.50 ± 0.25	1.3
AV30K1812801	30	34	47	50	77	5	800	3.8	6	0.015	2.2	4.7 ± 0.40	3.20 ± 0.30	1.3
AV30K2220122	30	34	47	50	77	10	1200	10	12	0.03	6.5	5.7 ± 0.50	5.00 ± 0.40	1.4
AV30K3225202	30	34	47	50	77	20	2000	17	25	0.04	6.6	8.0 ± 0.50	6.30 ± 0.40	1.5
42V Power Supply														
AV40K1206201	40	56	68	65	110	1	200	2.2	1.5	0.008	0.4	3.2 ± 0.30	1.60 ± 0.20	1.2
AV40K1210401	40	56	68	65	110	2.5	400	2.6	3	0.01	0.9	3.2 ± 0.30	2.50 ± 0.25	1.3
AV40K1812801	40	56	68	65	110	5	800	4.8	6	0.015	1.8	4.7 ± 0.40	3.20 ± 0.30	1.3
AV40K2220122	40	56	68	65	110	10	1200	10.5	12	0.03	5.5	5.7 ± 0.50	5.00 ± 0.40	1.4
AV40K3225202	40	56	68	65	110	20	2000	21	25	0.04	6.2	8.0 ± 0.50	6.30 ± 0.40	1.5



20

10

10 5

10 °

10<sup>-1</sup> 5

10

10<sup>2</sup>

10

t<sub>p</sub> [μs]

103

10-2

10-3

10-4

10-1

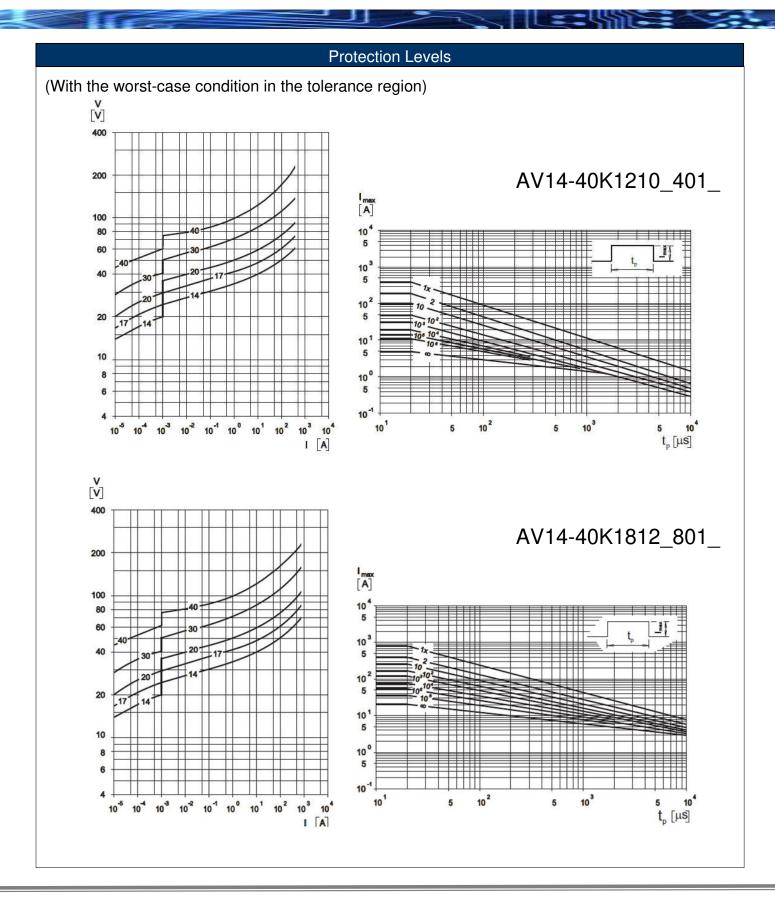
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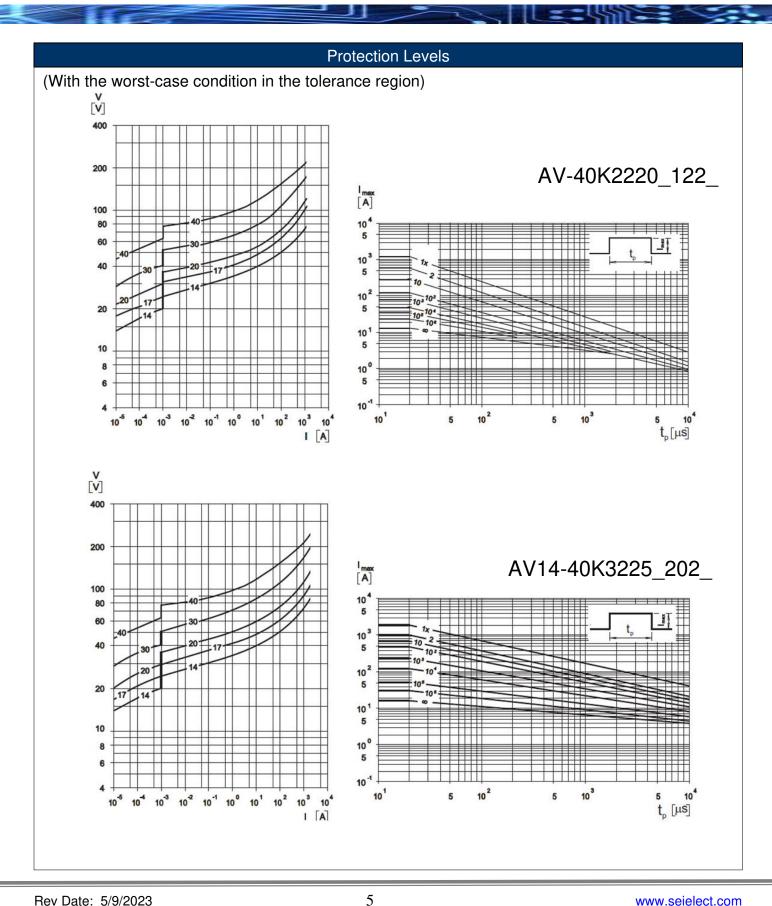
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10<sup>3</sup> 10<sup>4</sup>

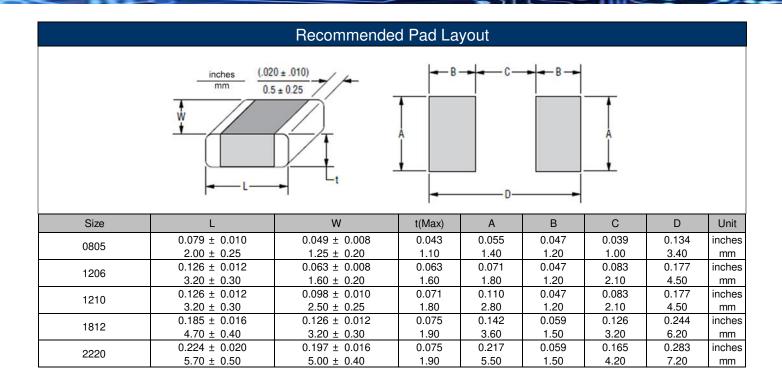
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Resistive Product Solutions









### **RoHS Compliance**

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

RoHS Compliance Status										
Standard Product Series	Package / Termination Type		Standard Series RoHS Compliant	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)				
AV_AVY	Automotive SMD Varistor (12 & 24 Volt Power Supply)	SMD	YES Compliant by means of exemption 7c-I	Proprietary Barrier Termination (special designation "N") for lead-free assembly; AgPd for Pb-containing assembly	Always	Always				

#### "Conflict Metals" Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the "conflict region" of the eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

# Stackpole Electronics, Inc.

Resistive Product Solutions

### Compliance to "REACH"

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, "The Registration, Evaluation, Authorization and Restriction of Chemicals", otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

#### **Environmental Policy**

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

