



PolySwitch Resettable Devices Automotive Devices

We have provided PPTC resettable devices in the automotive industry for over 25 years. With the advent of TS16949 and continued involvement in the automotive industry, automotive specific versions of PPTC resettable devices we developed. The result of this development is the four device families (AHS, ASMD, AHRF and AGRF) featured in this section, along with constant additions to these portfolios. These products are qualified and sold under PS400 specification which is derived from AEC-Q200, the standard for electronic components used in the automotive industry. The key difference between these families and other protection devices in the Raychem Circuit Protection product portfolio is the qualification according to a series of rigorous tests related to the automotive environment. As a result, they are characterized by specific additional values determined post automotive related testing.



Benefits

- Expertise from the world's leading resettable overcurrent protection manufacturer
- High quality/reliability products from the world's largest passive component manufacturer
- Worldwide team dedicated to support automotive applications
- Wide range of dedicated automotive surface-mount and radial-leaded resettable overcurrent devices
- High performance transient voltage protection devices

Features

- Overcurrent and overvoltage circuit protection devices
- Resettable and single-use overcurrent devices
- Wide range of form factor and termination methods
- Products meet applicable automotive industry standards
- Devices compatible with high-volume electronics assembly

Applications

- Motor and motor circuit protection including power door-locks, mirrors, lumbar pumps, seats, sunroofs and windows
- Electronic Control Unit (ECU) I/O protection
- Heating Ventilation and Cooling (HVAC) motor and I/O protection
- Telematics, infotainment and navigations systems
- Liquid Crystal Display (LCD) back-light heaters
- Power and cigarette lighter outlets, plugs and adapter/chargers
- Powered networks and busses
- Air-flow detection and overcurrent protection in HVAC and cooling fan systems
- Stall detection in express window and sunroof circuits
- Power distribution, electrical centers and junction box resettable overcurrent protection
- Wire downsizing
- Motor Electromagnetic Interference (EMI) suppression
- Electrostatic Discharge (ESD) damage protection
- Load dump and other transient voltage protection

Table A1 Product Series - Current Rating, Voltage Rating / Typical Resistance for Automotive Devices

Voltage Rating	AGRF 16V	AHRF 16V	AHRF 30V	AHS 16V	ASMD 16V	ASMD 30V	ASMD 60V
Hold Current (A)							
0.30	—	—	—	—	—	—	0.23Ω
0.50	—	—	0.565Ω	—	—	—	0.90Ω
0.70	—	—	0.385Ω	—	—	—	—
0.75	—	—	—	—	—	0.60Ω	—
0.80	—	—	—	0.25Ω	—	—	—
1.00	—	—	0.225Ω	—	—	0.30Ω	—
1.25	—	—	—	—	0.16Ω	—	—
1.50	—	—	—	—	0.14Ω	—	—
1.60	—	—	—	0.10Ω	—	—	—
2.00	—	0.0565Ω	—	—	0.09Ω	—	—
2.50	—	—	—	—	0.06Ω	—	—
3.00	—	0.0410Ω	—	—	—	—	—
4.00	0.0300Ω	0.0305Ω	—	—	—	—	—
4.50	—	0.0290Ω	—	—	—	—	—
5.00	0.0192Ω	—	—	—	—	—	—
5.50	—	0.0190Ω	—	—	—	—	—
6.00	0.0145Ω	0.0180Ω	—	—	—	—	—
6.50	—	0.0140Ω	—	—	—	—	—
7.00	0.0105Ω	0.0126Ω	—	—	—	—	—
7.50	—	0.0120Ω	—	—	—	—	—
8.00	0.0086Ω	0.0104Ω	—	—	—	—	—
9.00	0.0070Ω	0.0100Ω	—	—	—	—	—
10.00	0.0056Ω	0.0083Ω	—	—	—	—	—
11.00	0.0050Ω	0.0069Ω	—	—	—	—	—
12.00	0.0046Ω	—	—	—	—	—	—
13.00	—	0.0055Ω	—	—	—	—	—
14.00	0.0040Ω	0.0050Ω	—	—	—	—	—
15.00	—	0.0050Ω	—	—	—	—	—

Table A2 Thermal Derating for Automotive Devices [Hold Current (A) at Ambient Temperature (°C)]

Part Number	Maximum Ambient Temperature										
	-40°C	-20°C	0°C	20°C	25°C	40°C	50°C	60°C	70°C	85°C	125°C
AGRF 16V — Radial-leaded											
AGRF400	5.9	5.3	4.8	4.1	4.0	3.5	3.2	2.8	2.5	1.9	—
AGRF500	7.3	6.6	6.0	5.2	5.0	4.4	4.0	3.6	3.1	2.4	—
AGRF600	8.8	8.0	7.2	6.2	6.0	5.2	4.8	4.2	3.8	2.8	—
AGRF700	10.3	9.3	8.4	7.3	7.0	6.2	5.6	5.0	4.4	3.3	—
AGRF800	11.7	10.7	9.6	8.3	8.0	6.9	6.4	5.6	5.1	3.7	—
AGRF900	13.2	11.9	10.7	9.4	9.0	7.9	7.2	6.4	5.6	4.2	—
AGRF1000	14.7	13.3	12.0	10.3	10.0	8.7	8.0	7.0	6.3	4.7	—
AGRF1100	16.1	14.6	13.1	11.5	11.0	9.7	8.8	7.8	6.9	5.2	—
AGRF1200	17.6	16.0	14.4	12.4	12.0	10.4	9.6	8.4	7.6	5.6	—
AGRF1400	20.5	18.7	16.8	14.5	14.0	12.1	11.2	9.8	8.9	6.5	—
AHRF (High Temperature) 30V — Radial-leaded											
NEW AHRF050	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.1
NEW AHRF070	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.2
NEW AHRF100	1.4	1.2	1.1	1.0	1.0	0.9	0.8	0.7	0.7	0.6	0.2
AHRF (High Temperature) 16V — Radial-leaded											
NEW AHRF200	2.7	2.5	2.3	2.1	2.00	1.8	1.6	1.5	1.3	1.1	0.5
NEW AHRF300	4.1	3.7	3.4	3.1	3.00	2.7	2.4	2.2	2.0	1.7	0.7
NEW AHRF400	5.6	5.1	4.7	4.2	4.00	3.6	3.3	3.0	2.7	2.3	1.0
AHRF450	6.1	5.6	5.1	4.6	4.50	4.0	3.6	3.3	3.0	2.5	1.1
NEW AHRF550	7.5	6.9	6.2	5.7	5.50	4.9	4.4	4.0	3.7	3.1	1.4

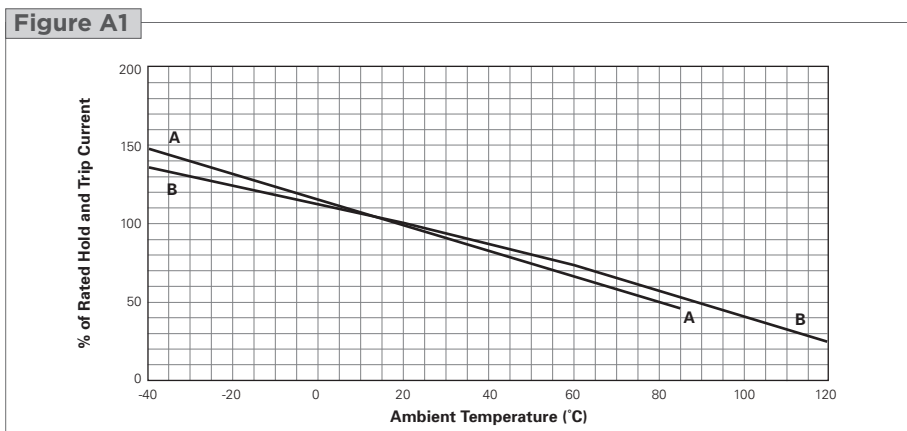
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Table A2 Thermal Derating for Automotive Devices [Hold Current (A) at Ambient Temperature (°C)] ... Cont'd

Part Number	Maximum Ambient Temperature										
	-40°C	-20°C	0°C	20°C	25°C	40°C	50°C	60°C	70°C	85°C	125°C
AHRF (High Temperature) 16V — Radial-leaded											
AHRF600	8.2	7.5	6.8	6.2	6.00	5.3	4.9	4.4	4.0	3.3	1.5
AHRF650	8.8	8.1	7.4	6.7	6.50	5.7	5.3	4.8	4.3	3.6	1.6
NEW AHRF700	9.5	8.7	8.0	7.2	7.00	6.2	5.6	5.2	4.7	3.9	1.7
AHRF750	10.2	9.4	8.6	7.7	7.50	6.6	6.1	5.6	5.0	4.1	1.9
NEW AHRF800	10.9	10.0	9.1	8.2	8.00	7.1	6.4	5.9	5.3	4.4	2.0
NEW AHRF900	12.2	11.2	10.2	9.3	9.00	8.0	7.2	6.6	6.0	5.0	2.2
AHRF1000	13.6	12.5	11.4	10.3	10.00	8.8	8.1	7.4	6.6	5.5	2.5
NEW AHRF1100	14.9	13.7	12.5	11.3	11.00	9.7	8.8	8.1	7.3	6.1	2.7
AHRF1300	17.7	16.3	14.8	13.4	13.00	11.4	10.5	9.6	8.6	7.2	3.3
NEW AHRF1400	19.0	17.5	15.9	14.4	14.00	12.4	11.2	10.3	9.3	7.8	3.5
NEW AHRF1500	20.4	18.8	17.1	15.5	15.00	13.2	12.1	11.1	9.9	8.3	3.8
AHS (High Temperature) 16V — Surface-mount											
AHS080-2018	1.20	1.04	0.90	0.80	0.77	0.68	0.62	0.60	0.53	0.46	0.26
AHS160	2.15	1.96	1.78	1.60	1.55	1.42	1.33	1.24	1.15	1.01	0.64
ASMD 16-60V — Surface-mount											
ASMD030F	0.35	0.31	0.27	0.23	0.22	0.19	0.17	0.15	0.13	0.11	—
ASMD050F	0.59	0.53	0.46	0.39	0.37	0.33	0.29	0.26	0.23	0.18	—
ASMD075F	0.91	0.81	0.71	0.60	0.58	0.50	0.45	0.40	0.35	0.28	—
ASMD100F	1.37	1.22	1.06	0.90	0.86	0.76	0.68	0.60	0.52	0.41	—
ASMD125F	1.58	1.40	1.23	1.04	1.00	0.87	0.78	0.70	0.60	0.48	—
ASMD150F	1.93	1.70	1.50	1.27	1.22	1.07	0.95	0.85	0.74	0.58	—
ASMD200F	2.63	2.34	2.04	1.73	1.66	1.45	1.30	1.16	1.00	0.80	—
ASMD250F	3.00	2.66	2.32	1.97	1.89	1.65	1.48	1.32	1.14	0.91	—

Figure A1-A2 Thermal Derating Curves for Automotive Devices

A = AGRF
B = AHRF



A = ASMD
B = AHS

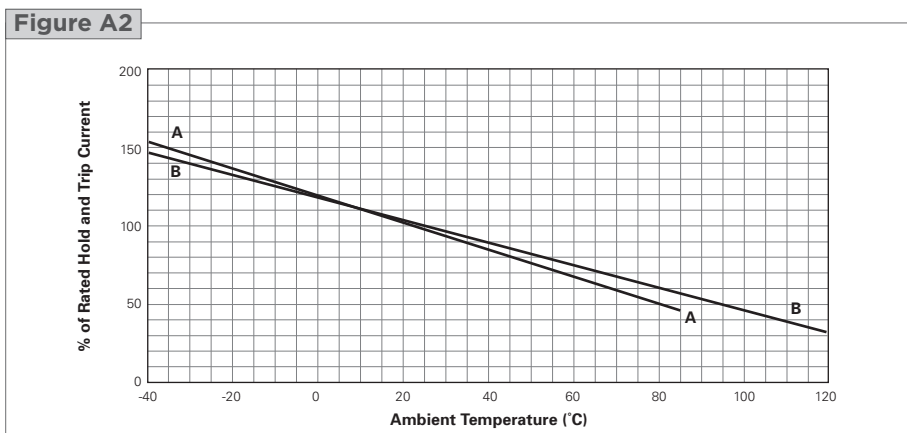


Table A3 Electrical Characteristics for Automotive Devices

Part Number	$I_H(A)@R_{1Max}$	$I_H(A)@R_{aMax}$	$I_T(A)$	$V_{Max}(V_{AC})$	$I_{Max}(A)$	$P_{D TYP}(W)$	Max. Time-to-trip (A) (s)		$R_{Min}(\Omega)$	$R_{1Max}(\Omega)$	$R_{aMax}(\Omega)$	Figure for Dimensions
AGRF												
16V — Radial-leaded												
AGRF400	4.0	3.0	7.6	16	100	2.5	20.0	2.0	0.0186	0.0610	0.0850	A3, A6, A7
AGRF500	5.0	4.3	9.4	16	100	2.7	25.0	2.5	0.0140	0.0340	0.0480	A3, A6, A7
AGRF600	6.0	5.3	10.7	16	100	2.8	30.0	3.5	0.0095	0.0280	0.0320	A3, A6, A7
AGRF700	7.0	6.5	13.2	16	100	3.0	35.0	4.0	0.0066	0.0200	0.0220	A3, A6, A7
AGRF800	8.0	7.6	15.0	16	100	3.2	40.0	5.5	0.0049	0.0175	0.0181	A3, A6, A7
AGRF900	9.0	8.6	16.5	16	100	3.4	45.0	6.0	0.0041	0.0135	0.0140	A3, A6, A7
AGRF1000	10.0	9.6	18.5	16	100	3.6	50.0	7.0	0.0034	0.0102	0.0106	A3, A6, A7
AGRF1100	11.0	10.5	20.3	16	100	3.7	55.0	7.5	0.0033	0.0089	0.0093	A3, A6, A7
AGRF1200	12.0	11.5	22.1	16	100	4.2	60.0	8.0	0.0030	0.0086	0.0091	A3, A6, A7
AGRF1400	14.0	13.0	27.3	16	100	4.6	70.0	9.0	0.0022	0.0064	0.0067	A3, A6, A7
AHRF (High Temperature)												
30V — Radial-leaded												
NEW AHRF050	0.5	1.0	3.0	30	40	0.9	2.5	3.0	0.3500	1.100	1.100	A6, A7, A8
NEW AHRF070	0.7	1.4	4.2	30	40	1.4	3.5	3.2	0.2300	0.800	0.800	A3, A6, A7
NEW AHRF100	1.0	1.9	5.7	30	40	1.4	5.0	6.2	0.1500	0.430	0.430	A6, A7, A8
AHRF (High Temperature)												
16V — Radial-leaded												
NEW AHRF200	2.0	3.8	11.6	16	100	1.4	10.0	4.8	0.0390	0.110	0.110	A6, A7, A8
NEW AHRF300	3.0	6.5	19.5	16	100	3.0	15.0	5.0	0.0290	0.079	0.079	A3, A6, A7
NEW AHRF400	4.0	7.4	22.2	16	100	3.3	20.0	5.0	0.0210	0.060	0.060	A3, A6, A7
AHRF450	4.5	8.7	26.1	16	100	3.6	22.5	4.0	0.0170	0.054	0.054	A3, A6, A7
NEW AHRF550	5.5	10.0	29.7	16	100	3.5	27.5	6.0	0.0130	0.037	0.037	A3, A6, A7
AHRF600	6.0	12.0	36.0	16	100	4.1	30.0	6.5	0.0100	0.032	0.032	A3, A6, A7
AHRF650	6.5	13.7	41.1	16	100	4.3	32.5	7.0	0.0090	0.026	0.026	A3, A6, A7
NEW AHRF700	7.0	13.1	39.3	16	100	4.0	35.0	7.0	0.0087	0.025	0.025	A3, A6, A7
AHRF750	7.5	14.8	44.4	16	100	4.5	37.5	8.0	0.0074	0.022	0.022	A3, A6, A7
NEW AHRF800	8.0	15.0	45.0	16	100	4.2	40.0	8.0	0.0072	0.020	0.020	A3, A6, A7
NEW AHRF900	9.0	18.5	55.5	16	100	5.0	45.0	11.5	0.0061	0.017	0.017	A3, A6, A7
AHRF1000	10.0	20.5	61.5	16	100	5.3	50.0	10.5	0.0051	0.015	0.015	A3, A6, A7
NEW AHRF1100	11.0	21.2	63.6	16	100	5.5	55.0	11.0	0.0048	0.013	0.013	A3, A6, A7
AHRF1300	13.0	27.0	81.0	16	100	6.9	65.0	15.0	0.0034	0.010	0.010	A3, A6, A7
NEW AHRF1400	14.0	28.3	84.9	16	100	6.9	70.0	15.5	0.0029	0.009	0.009	A3, A6, A7
NEW AHRF1500	15.0	33.0	99.0	16	100	7.0	75.0	20.0	0.0027	0.0092	0.0092	A3, A6, A7
AHS (High Temperature)												
16V — Surface-mount												
AHS080-2018	0.80	2.00	6.00	16	70	1.5	8.0	9.0	0.130	0.550	0.550	A4
AHS160	1.60	3.20	9.60	16	70	2.2	8.0	15.0	0.050	0.150	0.150	A5
ASMD												
16-60V — Surface-mount												
ASMD030F	0.23	0.59	1.77	60	10	1.1	1.15	12.0	0.980	4.800	4.800	A5
ASMD050F	0.39	0.98	2.94	60	10	1.7	1.95	20.0	0.290	1.400	1.400	A5
ASMD075F	0.60	1.48	4.44	30	40	1.1	3.00	20.0	0.290	1.000	1.000	A5
ASMD100F	0.90	2.16	6.48	30	40	1.1	4.50	20.0	0.098	0.480	0.480	A5
ASMD125F	1.04	2.46	7.38	16	40	1.1	5.20	20.0	0.057	0.250	0.250	A5
ASMD150F	1.27	2.95	8.85	16	40	1.2	6.35	25.0	0.049	0.250	0.250	A5
ASMD200F	1.73	3.93	11.79	16	40	1.2	8.65	30.0	0.050	0.120	0.120	A5
ASMD250F	1.97	5.00	15.00	16	40	1.2	9.85	30.0	0.035	0.085	0.085	A5

Notes:

- I_H : Hold current: maximum current device will pass without interruption in 25°C, unless otherwise specified (20°C for ASMD).
- I_T : Trip current: minimum current that will switch the device from low resistance to high resistance in 25°C still air, unless otherwise specified.
- V_{Max} : Maximum voltage device can withstand without damage at rated current.
- I_{Max} : Maximum fault current device can withstand without damage at rated voltage.
- P_D : Power dissipated from device when in the tripped state in 25°C still air, unless otherwise specified.
- R_{1Max} : Maximum resistance of device when measured one hour post reflow (surface-mount device) or one hour post trip (radial-leaded device) at 25°C unless otherwise specified.
- R_{aMin} : Minimum functional resistance of device after being subjected to the stresses described in PS400 at 25°C, unless otherwise specified.
- R_{aMax} : Maximum functional resistance of device after being subjected to the stresses described in PS400 at 25°C, unless otherwise specified.
- R_{Min} : Minimum resistance of device as supplied at 25°C, unless otherwise specified.

Figure A3-A8 Dimension Figures for Automotive Devices

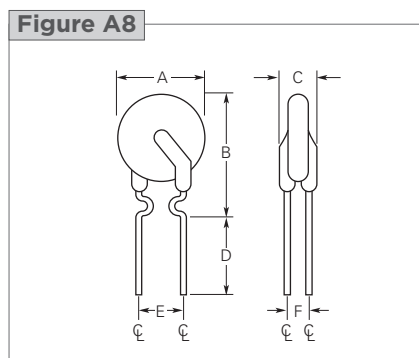
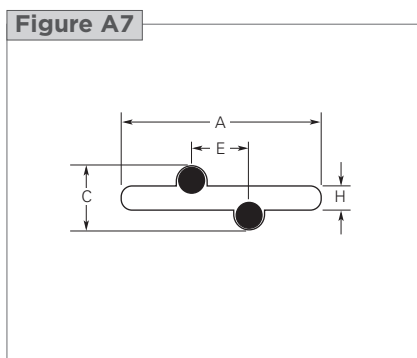
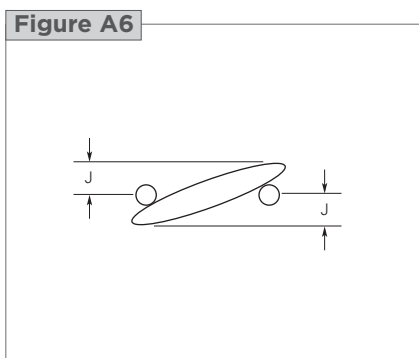
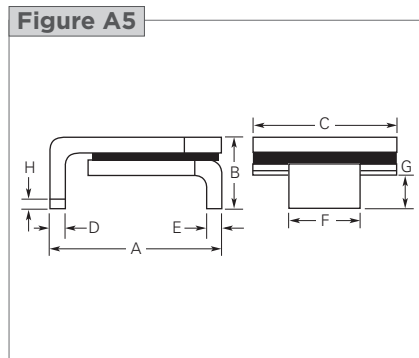
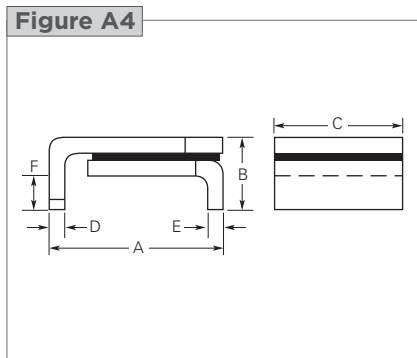
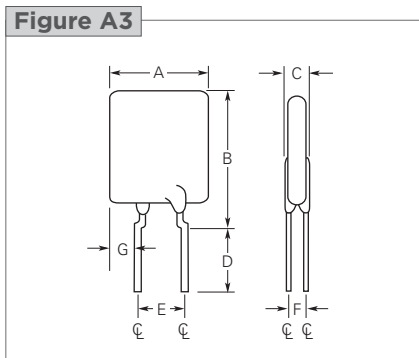


Table A4 Dimensions for Automotive Devices in Millimeters (Inches)

Part Number	A		B		C		D		E		F		G		H	J	Figure
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	TYP.	max.	
AGRF																	
16V — Radial-leaded																	
AGRF400	—	8.9 (0.35)	—	14.1 (0.56)	—	3.0 (0.12)	7.6 (0.3)	—	4.3 (0.17)	5.8 (0.20)	1.2 (0.15)	—	—	3.10 (0.120)	1.24 (0.049)	1.4 (0.06)	A3, A6, A7
AGRF500	—	10.4 (0.41)	—	15.6 (0.61)	—	3.0 (0.12)	7.6 (0.3)	—	4.3 (0.17)	5.8 (0.20)	1.2 (0.05)	—	—	3.94 (0.155)	1.24 (0.049)	1.6 (0.06)	A3, A6, A7
AGRF600	—	10.7 (0.42)	—	18.4 (0.73)	—	3.0 (0.12)	7.6 (0.3)	—	4.3 (0.17)	5.8 (0.20)	1.2 (0.05)	—	—	4.07 (0.160)	1.24 (0.049)	1.6 (0.06)	A3, A6, A7
AGRF700	—	11.2 (0.44)	—	21.0 (0.73)	—	3.0 (0.12)	7.6 (0.3)	—	4.3 (0.17)	5.8 (0.20)	1.2 (0.05)	—	—	4.49 (0.177)	1.24 (0.049)	1.7 (0.07)	A3, A6, A7
AGRF800	—	12.7 (0.50)	—	22.2 (0.88)	—	3.0 (0.12)	7.6 (0.3)	—	4.3 (0.17)	5.8 (0.20)	1.2 (0.05)	—	—	5.08 (0.200)	1.24 (0.049)	1.8 (0.07)	A3, A6, A7
AGRF900	—	14.0 (0.55)	—	23.0 (0.91)	—	3.0 (0.12)	7.6 (0.3)	—	4.3 (0.17)	5.8 (0.20)	1.2 (0.05)	—	—	5.69 (0.224)	1.24 (0.049)	2.0 (0.08)	A3, A6, A7
AGRF1000	—	16.51 (0.65)	—	25.7 (1.01)	—	3.0 (0.12)	7.6 (0.3)	—	4.3 (0.17)	5.8 (0.20)	1.2 (0.05)	—	—	6.96 (0.274)	1.24 (0.049)	2.0 (0.08)	A3, A6, A7
AGRF1100	—	17.5 (0.69)	—	26.5 (1.04)	—	3.0 (0.12)	7.6 (0.3)	—	4.3 (0.17)	5.8 (0.20)	1.2 (0.05)	—	—	7.47 (0.294)	1.24 (0.049)	2.4 (0.09)	A3, A6, A7
AGRF1200	—	17.5 (0.69)	—	28.8 (1.14)	—	3.5 (0.14)	7.6 (0.3)	—	9.4 (0.37)	10.9 (0.43)	1.4 (0.06)	—	—	4.83 (0.190)	1.45 (0.057)	1.5 (0.06)	A3, A6, A7
AGRF1400	—	23.5 (0.925)	—	28.7 (1.13)	—	3.5 (0.14)	7.6 (0.3)	—	9.4 (0.37)	10.9 (0.43)	1.4 (0.06)	—	—	7.82 (0.308)	1.45 (0.057)	1.9 (0.07)	A3, A6, A7
AHRF (High Temperature)																	
30V — Radial-leaded																	
NEW AHRF050	—	7.4 (0.29)	—	12.7 (0.50)	—	3.3 (0.13)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	1.24 (0.049)	1.6 (0.06)	1.6 (0.06)	A6, A7, A8
NEW AHRF070	—	6.9 (0.27)	—	10.8 (0.43)	—	3.3 (0.13)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	1.24 (0.049)	1.6 (0.06)	1.6 (0.06)	A3, A6, A7
NEW AHRF100	—	9.7 (0.38)	—	13.6 (0.54)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	1.24 (0.049)	1.6 (0.06)	1.6 (0.06)	A6, A7, A8

Table A4 Dimensions for Automotive Devices in Millimeters (Inches)

... Cont'd

Part Number	A		B		C		D		E		F		G		H		J		Figure
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	TYP	max.			
AHRF (High Temperature)																			
16V — Radial-leaded																			
NEW AHRF200	—	9.4 (0.37)	—	14.4 (0.57)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	—	1.24 (0.049)	1.6 (0.06)			A6, A7, A8
NEW AHRF300	—	8.8 (0.35)	—	13.8 (0.55)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	—	1.24 (0.049)	1.6 (0.06)			A3, A6, A7
NEW AHRF400	—	10.0 (0.39)	—	15.0 (0.59)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	—	1.24 (0.049)	1.6 (0.06)			A3, A6, A7
AHRF450	—	10.4 (0.41)	—	15.6 (0.61)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	3.94 (0.155)	1.24 (0.049)	1.6 (0.06)			A3, A6, A7
NEW AHRF550	—	11.2 (0.44)	—	18.9 (0.74)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	—	1.24 (0.049)	1.6 (0.06)			A3, A6, A7
AHRF600	—	11.2 (0.44)	—	21.0 (0.73)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	4.49 (0.177)	1.24 (0.049)	1.7 (0.07)			A3, A6, A7
AHRF650	—	12.7 (0.50)	—	22.2 (0.88)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	5.08 (0.200)	1.24 (0.049)	1.8 (0.07)			A3, A6, A7
NEW AHRF700	—	14.0 (0.55)	—	21.9 (0.86)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	—	1.24 (0.049)	1.6 (0.06)			A3, A6, A7
AHRF750	—	14.0 (0.55)	—	23.5 (0.93)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	5.69 (0.224)	1.24 (0.049)	2.0 (0.08)			A3, A6, A7
NEW AHRF800	—	16.5 (0.65)	—	22.5 (0.88)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	—	1.24 (0.049)	1.6 (0.06)			A3, A6, A7
NEW AHRF900	—	16.5 (0.65)	—	25.7 (1.01)	—	3.0 (0.12)	7.6 (0.30)	—	4.3 (0.17)	5.8 (0.23)	1.2 (0.05)	—	—	—	—	—			A3, A6, A7
AHRF1000	—	17.5 (0.69)	—	26.5 (1.04)	—	3.0 (0.12)	7.6 (0.30)	—	9.4 (0.37)	10.9 (0.43)	1.2 (0.05)	—	—	7.47 (0.294)	1.24 (0.049)	1.5 (0.06)			A3, A6, A7
NEW AHRF1100	—	21.0 (0.83)	—	26.1 (1.03)	—	3.0 (0.12)	7.6 (0.30)	—	9.4 (0.37)	10.9 (0.43)	1.2 (0.05)	—	—	—	1.24 (0.049)	1.6 (0.06)			A3, A6, A7
AHRF1300	—	23.5 (0.925)	—	28.7 (1.13)	—	3.5 (0.14)	7.6 (0.30)	—	9.4 (0.37)	10.9 (0.43)	1.4 (0.06)	—	—	7.82 (0.308)	1.45 (0.057)	1.9 (0.08)			A3, A6, A7
NEW AHRF1400	—	23.5 (0.93)	—	28.7 (1.13)	—	3.6 (0.14)	7.6 (0.30)	—	9.4 (0.37)	10.9 (0.43)	1.4 (0.06)	—	—	—	1.24 (0.049)	1.6 (0.06)			A3, A6, A7
NEW AHRF1500	—	23.5 (0.93)	—	28.7 (1.13)	—	3.5 (0.14)	7.6 (0.30)	—	9.4 (0.37)	10.9 (0.43)	1.4 (0.06)	—	—	7.82 (0.308)	—	—			A3, A6, A7

Part Number	A		B		C		D		E		F		G		H		Figure	
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max		
AHS (High Temperature)																		
16V — Surface-mount																		
AHS080-2018	4.72 (0.186)	5.44 (0.214)	—	1.52 (0.060)	4.22 (0.166)	4.93 (0.194)	0.25 (0.010)	0.36 (0.014)	0.25 (0.010)	0.36 (0.014)	0.30 (0.012)	0.46 (0.018)	—	—	—	—	—	A4
AHS160	8.00 (0.315)	9.40 (0.370)	—	3.00 (0.118)	6.0 (0.24)	6.71 (0.264)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	3.68 (0.145)	3.94 (0.155)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)			A5

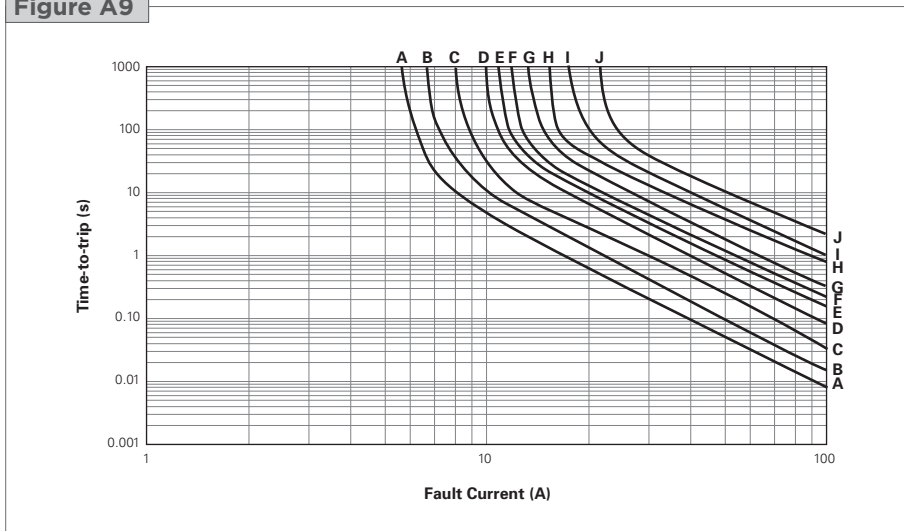
Part Number	A		B		C		D		E		F		G		H		Figure	
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max		
ASMD																		
16-60V — Surface-mount																		
ASMD030F	6.73 (0.265)	7.98 (0.314)	—	3.18 (0.125)	4.8 (0.19)	5.44 (0.214)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	2.16 (0.085)	2.41 (0.095)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)	—	—	A5
ASMD050F	6.73 (0.265)	7.98 (0.314)	—	3.18 (0.125)	4.8 (0.19)	5.44 (0.214)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	2.16 (0.085)	2.41 (0.095)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)	—	—	A5
ASMD075F	6.73 (0.265)	7.98 (0.314)	—	3.18 (0.125)	4.8 (0.19)	5.44 (0.214)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	2.16 (0.085)	2.41 (0.095)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)	—	—	A5
ASMD100F	6.73 (0.265)	7.98 (0.314)	—	3.00 (0.118)	4.8 (0.19)	5.44 (0.214)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	2.16 (0.085)	2.41 (0.095)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)	—	—	A5
ASMD125F	6.73 (0.265)	7.98 (0.314)	—	3.00 (0.118)	4.8 (0.19)	5.44 (0.214)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	2.16 (0.085)	2.41 (0.095)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)	—	—	A5
ASMD150F	8.00 (0.315)	9.40 (0.370)	—	3.00 (0.118)	6.0 (0.24)	6.71 (0.264)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	3.68 (0.145)	3.94 (0.155)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)	—	—	A5
ASMD200F	8.00 (0.315)	9.40 (0.370)	—	3.00 (0.118)	6.0 (0.24)	6.71 (0.264)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	3.68 (0.145)	3.94 (0.155)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)	—	—	A5
ASMD250F	8.00 (0.315)	9.40 (0.370)	—	3.00 (0.118)	6.0 (0.24)	6.71 (0.264)	0.56 (0.022)	0.71 (0.028)	0.56 (0.022)	0.71 (0.028)	3.68 (0.145)	3.94 (0.155)	0.66 (0.026)	1.37 (0.054)	0.43 (0.017)	—	—	A5

Figure A9-A12 Typical Time-to-trip at 25°C for Automotive Devices

AGRF

- A = AGRF400
- B = AGRF500
- C = AGRF600
- D = AGRF700
- E = AGRF800
- F = AGRF900
- G = AGRF1000
- H = AGRF1100
- I = AGRF1200
- J = AGRF1400

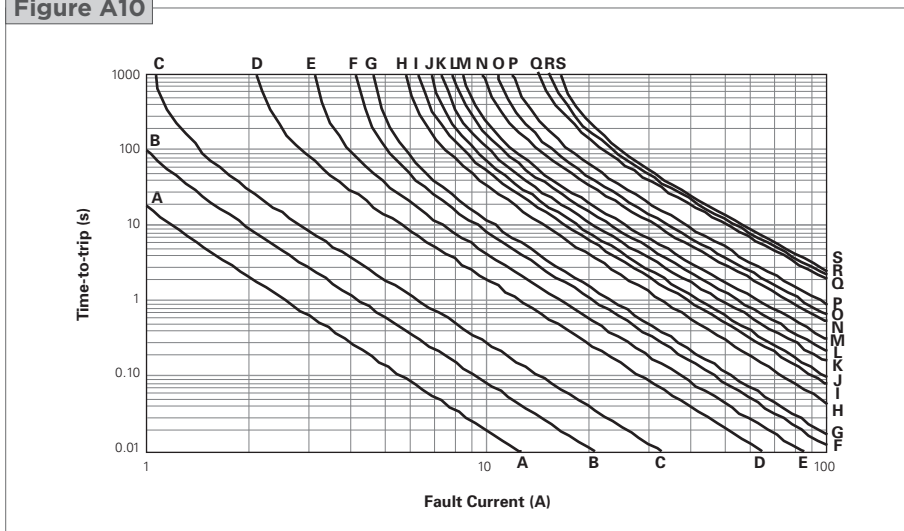
Figure A9



AHRF

- A = AHRF050
- B = AHRF070
- C = AHRF100
- D = AHRF200
- E = AHRF300
- F = AHRF400
- G = AHRF450
- H = AHRF550
- I = AHRF600
- J = AHRF650
- K = AHRF700
- L = AHRF750
- M = AHRF800
- N = AHRF900
- O = AHRF1000
- P = AHRF1100
- Q = AHRF1300
- R = AHRF1400
- S = AHRF1500

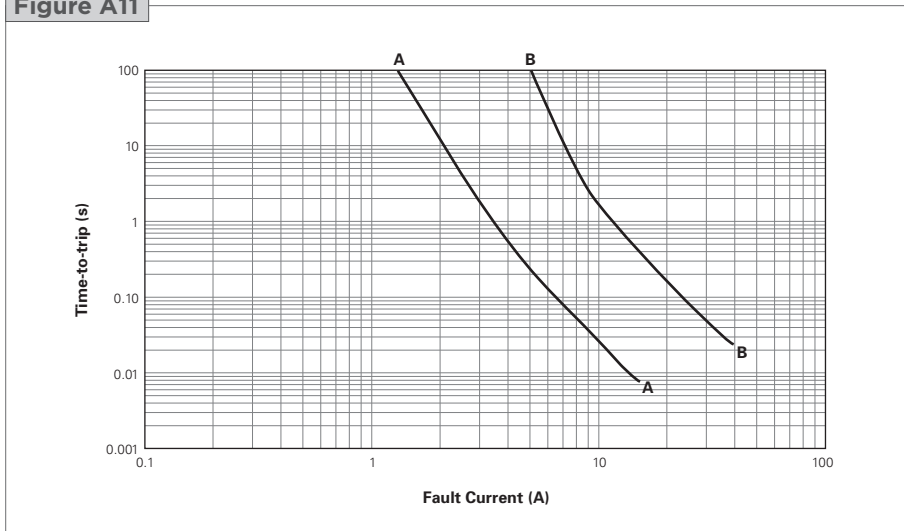
Figure A10



AHS

- A = AHS080-2018
- B = AHS160

Figure A11



ASMD

- A = ASMD030F
- B = ASMD050F
- C = ASMD075F
- D = ASMD100F
- E = ASMD125F
- F = ASMD150F
- G = ASMD200F
- H = ASMD250F

Figure A12

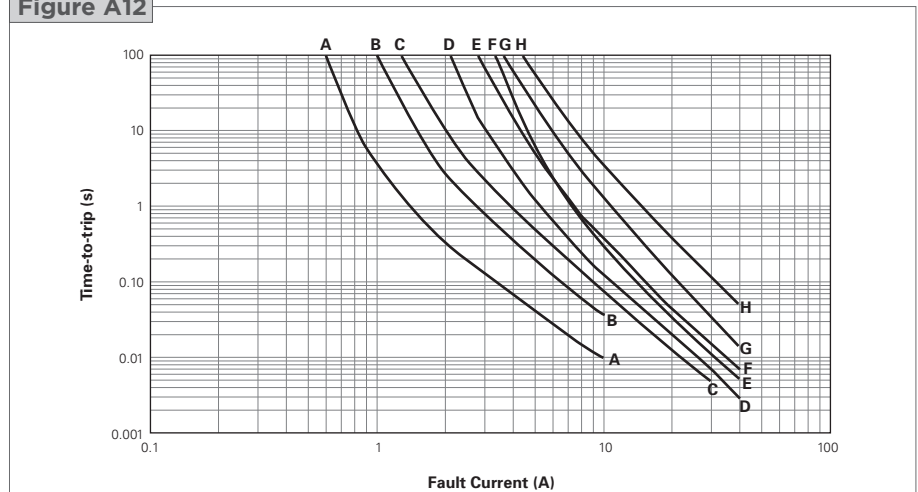


Table A5 Physical Characteristics and Environmental Specifications for Automotive Devices

AGRF

Physical Characteristics

Lead material	AGRF400 to AGRF1100 : Tin Plated Copper, 0.52mm ² (20AWG) ϕ 0.8 mm/0.032in AGRF1200 to AGRF1400 : Tin Plated Copper, 0.82mm ² (18AWG) ϕ 1.0mm/0.040in
Soldering characteristics	Solderability per ANSI/J-STD-002 Category 3
Solder heat withstand	AGRF400: per IEC68-2-20 Test Tb, Method 1A, Condition A: can withstand 5 seconds at 260°C \pm 5°C AGRF500-AGRF1400: per IEC68-2-20 Test Tb, Method 1A, Condition B: can withstand 10 seconds at 260°C \pm 5°C
Insulating material	Cured, flame-retardant epoxy polymer; meets UL 94V-0

Note: See PS400 for other physical characteristics
Devices are not designed to be placed through a reflow process.

Environmental Specifications

Test	Conditions	Resistance Change
Passive aging	70°C, 1000 hours	\pm 5%
	85°C, 1000 hours	\pm 5%
Humidity aging	85°C, 85% RH, 1000 hours	\pm 5%
Thermal shock	85°C, -40°C (10 times)	\pm 5%
Solvent resistance	MIL-STD-202, Method 215F	No change

Note: See PS400 for other environmental specifications

AHRF

Physical Characteristics

Lead material	AHRF050 to AHRF200 : Tin-plated Copper Clad Steel, 0.205mm ² (24 AWG), ϕ 0.51mm/0.020in AHRF300 to AHRF1100 : Tin-plated copper 0.52mm ² (20 AWG), ϕ 0.81mm/0.032 in AHRF1300 to AHRF1500 : Tin-plated copper 0.82mm ² (18 AWG), ϕ 1.0mm/0.04 in
Soldering characteristics	Solderability per ANSI/J-STD 002 Category 3
Solder heat withstand	per IEC 68-2-20, Test Tb, Method 1A, Condition B; can withstand 10 seconds at 260°C \pm 5°C
Insulating material	Cured, flame-retardant epoxy polymer; meets UL 94V-0 requirements

Note: See PS400 for other physical characteristics
Devices are not designed to be placed through a reflow process.

Environmental Specifications

Test	Conditions	Resistance Change
Passive aging	70°C, 1000 hours	\pm 5%
	85°C, 1000 hours	\pm 5%
Humidity aging	85°C, 85% RH, 1000 hours	\pm 5%
Thermal shock	125°C, -40°C (10 times)	\pm 5%
Solvent resistance	MIL-STD-202, Method 215F	No change

Note: See PS400 for other environmental specifications

Table A5 Physical Characteristics and Environmental Specifications for Automotive Devices ... Cont'd
AHS
Physical Characteristics

Lead material	Tin-plated brass to MIL-T-10727B
Soldering characteristics	Solderability per ANSI-J-STD-002 Category 1
Solder heat withstand	per IEC-STD 68-2-20, Test Tb, Section 5, Method 1A
Flammability	per IEC 695-2-2 Needle flame test for 20 seconds

Note: See PS400 for other physical characteristics

Environmental Specifications

Test	Conditions	Resistance Change
Passive aging	70°C, 1000 hours	±3% Typical
	85°C, 1000 hours	±5% Typical
Humidity aging	85°C, 85% RH, 1000 hours	±1.2% Typical
Thermal shock	125°C, -40°C (20 times)	-33% Typical
Solvent resistance	Freon	No change
	Trichloroethane	No change
	Hydrocarbons	No change

Note: See PS400 for other environmental specifications

ASMD
Physical Characteristics

Terminal pad material	98%+ Tin-plated Brass
Soldering characteristics	Solderability per ANSI-J-STD-002 Category 1
Solder heat withstand	per IEC-STD 68-2-20, Test Tb, Section 5, Method 1A
Flammability resistance	per IEC 695-2-2 Needle flame test for 20 seconds
Recommended storage conditions	40°C max, 70% RH max; devices may not meet specified ratings if storage conditions are exceeded

Note: See PS400 for other physical characteristics

Environmental Specifications

Test	Conditions	Resistance Change
Passive aging	60°C, 1000 hours	±3% typical
	85°C, 1000 hours	±5% typical
Humidity aging	85°C, 85% RH, 100 hours	±1.2% typical
Thermal shock	85°C, -40°C (20 times)	-33% typical
	125°C, -55°C (10 times)	-33% typical
Solvent resistance	Freon	No change
	Trichloroethane	No change
	Hydrocarbons	No change

Note: See PS400 for other environmental specifications

Table A6 Packaging and Marking Information for Automotive Devices

Part Number	Bag Quantity	Tape & Reel Quantity	Ammo Pack Quantity	Standard Package Quantity	Part Marking	Agency Recognition
AGRF						
Radial-leaded						
AGRF400	500	—	—	10,000	GF4	*
AGRF400-2	—	2,500	—	12,500	GF4	*
AGRF400-AP	—	—	2,000	10,000	GF4	*
AGRF500	500	—	—	10,000	GF5	*
AGRF500-2	—	2,000	—	10,000	GF5	*
AGRF500-AP	—	—	2,000	10,000	GF5	*
AGRF600	500	—	—	10,000	GF6	*
AGRF600-2	—	2,000	—	10,000	GF6	*
AGRF600-AP	—	—	2,000	10,000	GF6	*

* These devices have been designed for use in automotive applications.

For commercial alternatives to these product series please see the radial-leaded devices section on page 125 or surface-mount devices section on page 109.

Table A6 Packaging and Marking Information for Automotive Devices

... Cont'd

Part Number	Bag Quantity	Tape & Reel Quantity	Ammo Pack Quantity	Standard Package Quantity	Part Marking	Agency Recognition
AGRF						
Radial-leaded						
AGRF700	500	—	—	10,000	GF7	*
AGRF700-2	—	1,500	—	7,500	GF7	*
AGRF700-AP	—	—	1,500	7,500	GF7	*
AGRF800	500	—	—	10,000	GF8	*
AGRF800-2	—	1,000	—	5,000	GF8	*
AGRF800-AP	—	—	1,000	5,000	GF8	*
AGRF900	500	—	—	10,000	GF9	*
AGRF900-2	—	1,000	—	5,000	GF9	*
AGRF900-AP	—	—	1,000	5,000	GF9	*
AGRF1000	250	—	—	5,000	GF10	*
AGRF1000-2	—	1,000	—	5,000	GF10	*
AGRF1000-AP	—	—	1,000	5,000	GF10	*
AGRF1100	250	—	—	5,000	GF11	*
AGRF1100-2	—	1,000	—	5,000	GF11	*
AGRF1100-AP	—	—	1,000	5,000	GF11	*
AGRF1200	250	—	—	5,000	GF12	*
AGRF1200-2	—	1,000	—	5,000	GF12	*
AGRF1200-AP	—	—	1,000	5,000	GF12	*
AGRF1400	250	—	—	5,000	GF14	*
AGRF1400-2	—	1,000	—	5,000	GF14	*
AGRF1400-AP	—	—	1,000	5,000	GF14	*
AHRF (High Temperature)						
Radial-leaded						
NEW AHRF050	500	—	—	10,000	HF0.5	*
AHRF050-2	—	2,500	—	12,500	HF0.7	*
AHRF050-AP	—	—	2,500	12,500	HF0.7	*
NEW AHRF070	500	—	—	10,000	HF0.7	*
AHRF070-2	—	2,500	—	12,500	HF0.7	*
AHRF070-AP	—	—	2,500	12,500	HF0.7	*
NEW AHRF100	500	—	—	10,000	HF1.0	*
AHRF100-2	—	2,500	—	12,500	HF1.0	*
AHRF100-AP	—	—	2,500	12,500	HF1.0	*
NEW AHRF200	500	—	—	10,000	HF2	*
AHRF200-2	—	2,500	—	12,500	HF2	*
AHRF200-AP	—	—	2,500	12,500	HF2	*
NEW AHRF300	500	—	—	10,000	HF3	*
AHRF300-2	—	2,000	—	10,000	HF3	*
AHRF300-AP	—	—	2,000	10,000	HF3	*
NEW AHRF400	500	—	—	10,000	HF4	*
AHRF400-2	—	1,500	—	7,500	HF4	*
AHRF400-AP	—	—	1,500	7,500	HF4	*
AHRF450	500	—	—	10,000	HF4.5	*
AHRF450-2	—	1,500	—	7,500	HF4.5	*
AHRF450-AP	—	—	1,500	7,500	HF4.5	*
NEW AHRF550	500	—	—	10,000	HF5.5	*
AHRF550-2	—	2,000	—	10,000	HF5.5	*
AHRF550-AP	—	—	2,000	10,000	HF5.5	*
AHRF600	500	—	—	10,000	HF6	*
AHRF600-2	—	2,000	—	10,000	HF6	*
AHRF600-AP	—	—	2,000	10,000	HF6	*
AHRF650	500	—	—	10,000	HF6.5	*
AHRF650-2	—	1,500	—	7,500	HF6.5	*
AHRF650-AP	—	—	1,500	7,500	HF6.5	*
NEW AHRF700	500	—	—	10,000	HF7	*
AHRF700-2	—	1,500	—	7,500	HF7	*

* These devices have been designed for use in automotive applications.

For commercial alternatives to these product series please see the radial-leaded devices section on page 125 or surface-mount devices section on page 109.

Table A6 Packaging and Marking Information for Automotive Devices

... Cont'd

Part Number	Bag Quantity	Tape & Reel Quantity	Ammo Pack Quantity	Standard Package Quantity	Part Marking	Agency Recognition
AHRF (High Temperature)						
Radial-leaded						
AHRF700-AP	—	—	1,500	7,500	HF7	*
AHRF750	500	—	—	10,000	HF7.5	*
AHRF750-2	—	1,000	—	5,000	HF7.5	*
AHRF750-AP	—	—	1,000	5,000	HF7.5	*
NEW AHRF800	500	—	—	10,000	HF8	*
AHRF800-2	—	1,000	—	5,000	HF8	*
AHRF800-AP	—	—	1,000	5,000	HF8	*
NEW AHRF900	250	—	—	5,000	HF9	*
AHRF900-2	—	1,000	—	5,000	HF9	*
AHRF900-AP	—	—	1,000	5,000	HF9	*
AHRF1000	250	—	—	5,000	HF10	*
AHRF1000-2	—	1,000	—	5,000	HF10	*
AHRF1000-AP	—	—	1,000	5,000	HF10	*
NEW AHRF1100	250	—	—	5,000	HF11	*
AHRF1100-2	—	1,000	—	5,000	HF11	*
AHRF1100-AP	—	—	1,000	5,000	HF11	*
AHRF1300	250	—	—	5,000	HF13	*
AHRF1300-2	—	1,000	—	5,000	HF13	*
AHRF1300-AP	—	—	1,000	5,000	HF13	*
NEW AHRF1400	250	—	—	5,000	HF14	*
AHRF1400-2	—	1,000	—	5,000	HF14	*
AHRF1400-AP	—	—	1,000	5,000	HF14	*
NEW AHRF1500	250	—	—	5,000	HF15	*
AHRF1500-2	—	1,000	—	5,000	HF15	*
AHRF1500-AP	—	—	1,000	5,000	HF15	*

Recommended Pad Layouts [mm(in)] See Figure A13

Part Number	Tape & Reel Quantity	Standard Package Quantity	Part Marking	Dimension A (min*/nom)	Dimension B (nom.)	Dimension C (nom.)	Agency Recognition
AHS (High Temperature)							
Surface-mount							
AHS080-2018	4,000	20,000	H08	4.6 (0.18)	1.5 (0.09)	3.4 (0.134)	*
AHS160	1,500	7,500	160	4.6 (0.18)	2.3 (0.09)	6.1 (0.240)	*
ASMD							
Surface-mount							
ASMD030F	2,000	10,000	030F	3.1 (0.12)	2.3 (0.09)	5.1 (0.201)	*
ASMD050F	2,000	10,000	050F	3.1 (0.12)	2.3 (0.09)	5.1 (0.201)	*
ASMD075F	2,000	10,000	075F	3.1 (0.12)	2.3 (0.09)	5.1 (0.201)	*
ASMD100F	2,000	10,000	100F	3.1 (0.12)	2.3 (0.09)	5.1 (0.201)	*
ASMD125F	2,000	10,000	125F	3.1 (0.12)	2.3 (0.09)	5.1 (0.201)	*
ASMD150F	1,500	7,500	150F	4.6 (0.18)	2.3 (0.09)	6.1 (0.240)	*
ASMD200F	1,500	7,500	200F	4.6 (0.18)	2.3 (0.09)	6.1 (0.240)	*
ASMD250F	1,500	7,500	250F	4.6 (0.18)	2.3 (0.09)	6.1 (0.240)	*

* These devices have been designed for use in automotive applications.

For commercial alternatives to these product series please see the radial-leaded devices section on page 125 or surface-mount devices section on page 109.

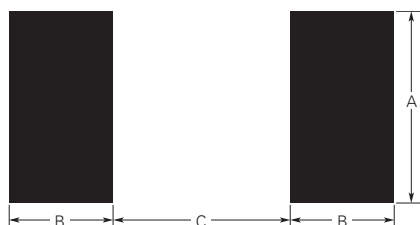
Figure A13 Recommended Pad Layout for Automotive Devices


Table A7 Tape and Reel Specifications for AGRF/AHRF Automotive Devices

AGRF and AHRF devices are available in tape and reel packaging per EIA468-B/IEC286-2 and EIA 481-2 standards. See Figures A14 and A15 for details.

Description	EIA Mark	Dimension (mm)	Tolerance
Carrier tape width	W	18.0	-0.5/+1.0
Hold down tape width	W ₄	11.0	Minimum
Top distance between tape edges	W ₆	3.0	Maximum
Sprocket hole position	W ₅	9.0	-0.5/+0.75
Sprocket hole diameter	D ₀	4.0	±0.2
Abscissa to plane	H ₀	16.0	±0.5
Abscissa to top AGRF500 to AGRF600 & AHRF450	H ₁	32.2	Maximum
Abscissa to top AGRF700 to AGRF1400 & AHRF600 to AHRF1300*	H ₁	45.0	Maximum
Overall width w/lead protrusion AGRF400 to AGRF600 & AHRF450	C ₁	43.2	Maximum
Overall width w/lead protrusion AGRF700 to AGRF1400 & AHRF600 to AHRF1300	C ₁	55.0	Maximum
Overall width w/o lead protrusion AGRF400 to AGRF600 & AHRF450	C ₂	42.5	Maximum
Overall width w/o lead protrusion AGRF700 to AGRF1400 & AHRF600 to AHRF1300	C ₂	54.0	Maximum
Lead protrusion	L ₁	1.0	Maximum
Protrusion of cut-out	L	11.0	Maximum
Protrusion beyond hold-down tape	l ₂	Not specified	—
Sprocket hole pitch	P ₀	12.7	±0.3
Device pitch AGRF400 to AGRF700, AHRF450 to AHRF600	—	12.7	±0.3
Device pitch AGRF800 to AGRF1400, AHRF650 to AHRF1300	—	25.4	±0.6
Pitch tolerance	—	20 consec.	±0.1
Tape thickness	t	0.9	Maximum
Overall tape and lead thickness AGRF400 to AGRF1100, AHRF450 to AHRF1000*	t ₁	2.0	Maximum
Overall tape and lead thickness AGRF1200 to AGRF1400, AHRF1300*	t ₁	2.3	Maximum
Splice sprocket hole alignment	—	0	±0.3
Body lateral deviation	Δh	0	±1.0
Body tape plane deviation	Δp	0	±1.3
Ordinate to adjacent component lead AGRF400 to AGRF1100, AHRF450 to AHRF750	P ₁	3.81	±0.7
Ordinate to adjacent component lead AGRF1200 to AGRF1400, AHRF1000 to AHRF1300	P ₁	7.62	±0.7
Lead spacing AGRF400 to AGRF1100, AHRF450 to AHRF750*	F	5.08	±0.75/-0.5
Lead spacing AGRF1200 to AGRF1400, AHRF1000 to AHRF1300*	F	10.2	±0.75/-0.5
Reel width AGRF400 to AGRF600 & AHRF450	w ₂	56.0	Maximum
Reel width AGRF700 to AGRF1400, AHRF600 to AHRF1300*	w ₂	63.5	Maximum
Reel diameter	a	370.0	Maximum
Space between flanges less device*	w ₁	4.75	±3.25
Arbor hold diameter	c	26.0	±12.0
Core diameter*	n	91.0	Maximum
Box	—	64/372/362	Maximum
Consecutive missing places	—	None	—
Empty places per reel	—	0.1%	Maximum

*Differs from EIA specification.

Figure A14 EIA Referenced Taped Component Dimensions for AGRF and AHRF Devices

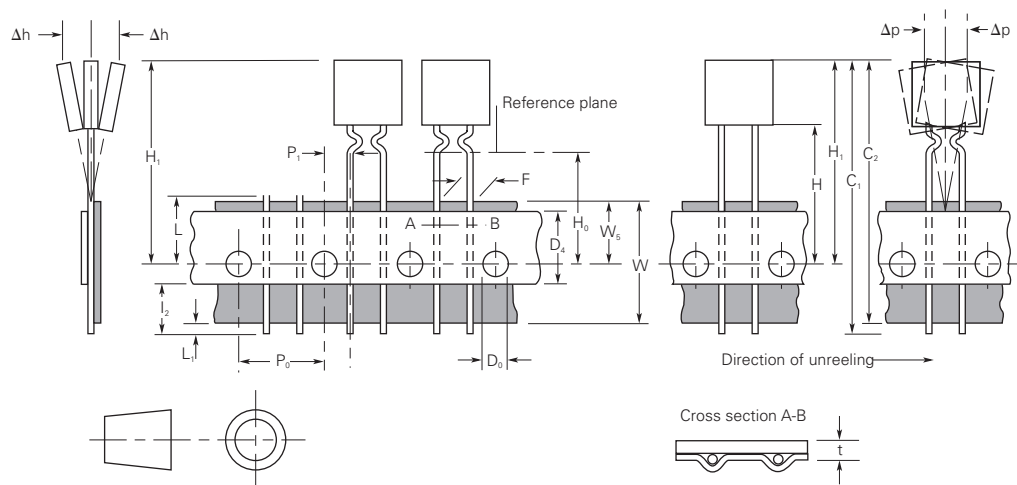
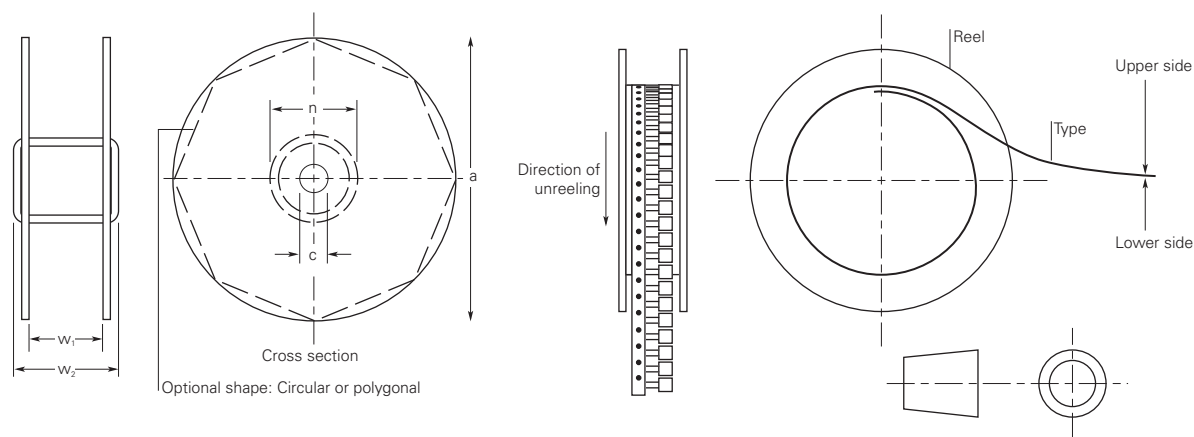


Figure A15 EIA Referenced Reel Dimensions for AGRF and AHRF Devices

Table A8 Tape and Reel Specifications for AHS/ASMD Automotive Devices

AHS and ASMD devices are available in tape and reel packaging per EIA 468-2 standards. See Figures A16 and A17 for details.

Description	EIA Mark	Dimension (mm)	Tolerance
Carrier tape width	W	16.0	± 0.3
Sprocket hole pitch	P ₀	4.0	± 0.10
Embossed cavity pitch (ASMD030F to ASMD125F & AHS080)	P ₁	8.0	± 0.10
Embossed cavity pitch (ASMD150F to ASMD250F & AHS160)	P ₁	12.0	± 0.10
Ordinate to embossed cavity center	P ₂	2.0	± 0.10
Embossed cavity length (inside) (AHS080)	A ₀	5.11	± 0.15
Embossed cavity length (inside) (ASMD030F to ASMD125F & AHS160)	A ₀	5.6	± 0.23
Embossed cavity length (inside) (ASMD150F to ASMD250F)	A ₀	6.9	± 0.23
Embossed cavity width (inside) (AHS080)	B ₀	5.6	± 0.23
Embossed cavity width (inside) (ASMD030F to ASMD125F)	B ₀	8.1	± 0.15
Embossed cavity width (inside) (ASMD150F to ASMD250F)	B ₀	9.6	± 0.15
Embossed cavity length (outside)	B ₁ max.	12.1	—
Sprocket hole diameter	D ₀	1.5	+ 0.1, -0
Abscissa to embossed cavity center	F	7.5	± 0.10
Sprocket hole location	E ₁	1.75	± 0.10
Sprocket hole location (across embossed cavity)	E ₂ min.	14.25	—
Carrier tape thickness	T max.	0.6	—
Cover tape thickness	T ₁ max.	0.1	—
AHS080	K ₀	1.8	± 0.15
ASMD100F, ASMD125F	K ₀	3.2	± 0.15
ASMD150F to 250F	K ₀	3.4	± 0.15
Embossed cavity depth (inside)	K ₀	—	± 0.15
Leader min.	—	400	—
Trailer min.	—	160	—
Reel diameter	A max.	330	—
Core diameter	N min.	50	—
Reel width measured at inside hub	W ₁	16.4	+ 2.0, -0
Reel width measured at outside hub	W ₂ max.	22.4	—

Figure A16 EIA Referenced Taped Component Dimensions for AHS and ASMD Devices

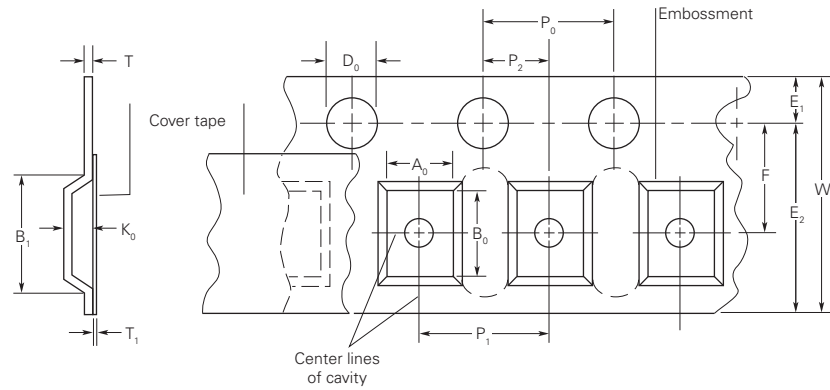
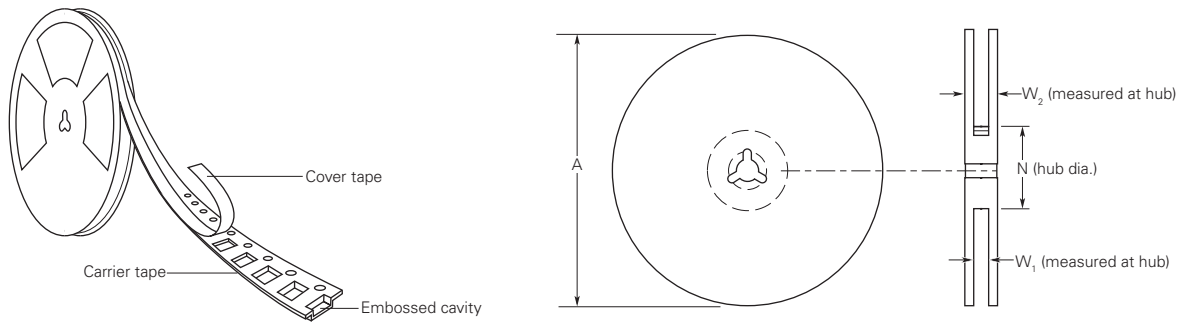
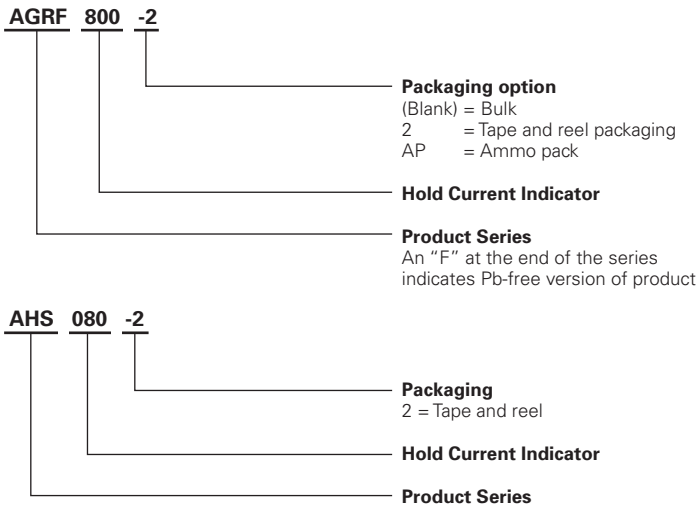


Figure A17 EIA Referenced Reel Dimensions for AHS and ASMD Devices



Part Numbering System for Automotive Devices



Warning :

- Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame.
- The devices are intended for protection against occasional overcurrent or overtemperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated.
- Contamination of the PPTC material with certain silicon based oils or some aggressive solvents can adversely impact the performance of the devices.
- Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.
- Operation in circuit with a large inductance can generate a circuit voltage ($L di/dt$) above the rated voltage of the PolySwitch resettable device.