

Description

The ASIM 60R Series is designed to provide overcurrent protection to 60Vdc maximum voltage

Features

- RoHS compliant, Lead-Free and HalogenFree*
- Resettable feature
- Ideal for a broad range of general electronics using a low voltage power supply



Applications

- Load protection on wide range of low voltage power supplies
- Computers
- Computers peripherals
- General electronics

Performance Specification

Model	I_{hold}	I_{trip}	V_{max}	I_{max}	Maximum Time To Trip		P_d	Resistance		
					Current	Time		Rimin	Rimax	R1max
	(A)	(A)	(Vdc)	(A)	(A)	(Sec)	(W)	(Ω)	(Ω)	(Ω)
60R005	0.05	0.10	60	40	0.25	5.0	0.30	16.0	26.0	30.0
60R010	0.10	0.20	60	40	0.50	4.0	0.38	2.50	4.50	6.00
60R017	0.17	0.34	60	40	0.85	3.0	0.48	2.00	3.20	4.50
60R020	0.20	0.40	60	40	1.00	2.2	0.41	1.50	2.84	3.80
60R025	0.25	0.50	60	40	1.25	2.5	0.45	1.00	1.95	2.80
60R030	0.30	0.60	60	40	1.50	3.0	0.49	0.76	1.36	1.80
60R040	0.40	0.80	60	40	2.00	3.8	0.56	0.52	0.86	1.10
60R050	0.50	1.00	60	40	2.50	4.0	0.77	0.41	0.77	1.00
60R065	0.65	1.30	60	40	3.25	5.3	0.88	0.27	0.48	0.60
60R075	0.75	1.50	60	40	3.75	6.3	0.92	0.28	0.40	0.63
60R090	0.90	1.80	60	40	4.50	7.2	0.99	0.14	0.31	0.42
60R110	1.10	2.20	60	40	5.50	8.2	1.50	0.14	0.25	0.33
60R135	1.35	2.70	60	40	6.75	9.6	1.70	0.12	0.19	0.26
60R160	1.60	3.20	60	40	8.00	11.4	1.90	0.09	0.14	0.19
60R185	1.85	3.70	60	40	9.25	12.6	2.10	0.08	0.12	0.16
60R250	2.50	5.00	60	40	12.50	15.6	2.50	0.05	0.09	0.13
60R300	3.00	6.00	60	40	15.00	19.8	2.80	0.04	0.06	0.09
60R375	3.75	7.50	60	40	18.75	24.0	3.20	0.03	0.05	0.08
60R400	4.00	8.00	60	40	20.00	20.0	3.20	0.014	0.038	0.06

I_{hold} = Hold Current. Maximum current device will not trip in 25°C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25°C still air.

V_{max} = Maximum operating voltage device can withstand without damage at rated current (I_{max}).

I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max}).

P_d = Power dissipation when device is in the tripped state in 25°C still air environment at rated voltage.

$R_{i min/max}$ = Minimum/Maximum device resistance prior to tripping at 25°C.

R_{1max} = Maximum device resistance is measured one hour post reflow.

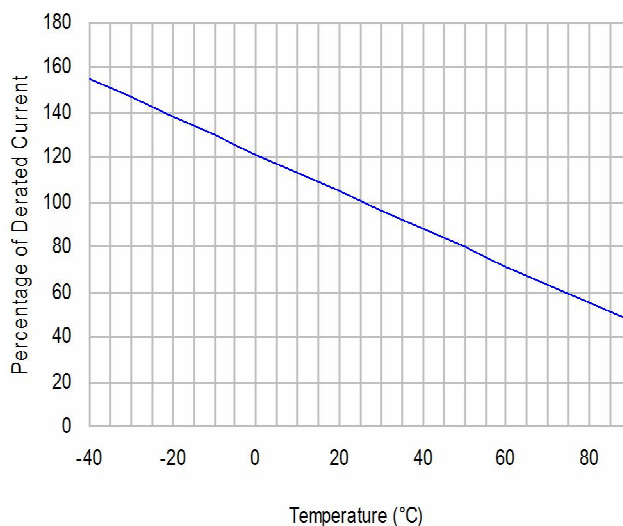
CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

Environmental Specifications

Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs.	±5% typical
Humidity aging	+85°C, 85% R.H. , 168 hours	±5% typical
Thermal shock	+85°C to -40°C, 20 times	±33% typical
Resistance to solvent	MIL-STD-202,Method 215	No change
Vibration	MIL-STD-202,Method 201	No change
Ambient operating conditions : - 40 °C to +85 °C		

Maximum surface temperature of the device in the tripped state is 125 °C

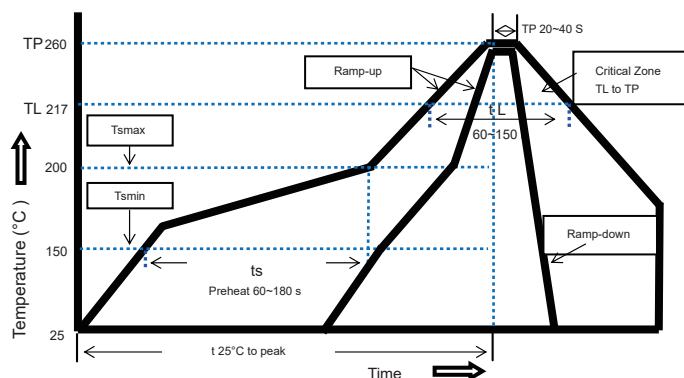
Thermal Derating Curve



I_{hold} Versus Temperature

Model	Maximum ambient operating temperature (T _{mao}) vs. hold current (I _{hold})								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
60R005	0.080	0.070	0.060	0.050	0.040	0.035	0.030	0.025	0.020
60R010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.04
60R017	0.26	0.23	0.20	0.17	0.14	0.12	0.11	0.09	0.07
60R020	0.31	0.27	0.24	0.20	0.16	0.14	0.13	0.11	0.08
60R025	0.39	0.34	0.30	0.25	0.20	0.18	0.16	0.14	0.10
60R030	0.47	0.41	0.36	0.30	0.24	0.22	0.19	0.16	0.12
60R040	0.62	0.54	0.48	0.40	0.32	0.29	0.25	0.22	0.16
60R050	0.78	0.68	0.60	0.50	0.41	0.36	0.32	0.27	0.20
60R065	1.01	0.88	0.77	0.65	0.53	0.47	0.41	0.35	0.26
60R075	1.16	1.02	0.89	0.75	0.61	0.54	0.47	0.41	0.30
60R090	1.40	1.22	1.07	0.90	0.73	0.65	0.57	0.49	0.36
60R110	1.71	1.50	1.31	1.10	0.89	0.79	0.69	0.59	0.44
60R135	2.09	1.84	1.61	1.35	1.09	0.97	0.85	0.73	0.54
60R160	2.48	2.18	1.90	1.60	1.30	1.15	1.01	0.86	0.64
60R185	2.87	2.52	2.20	1.85	1.50	1.33	1.17	1.00	0.74
60R250	3.88	3.40	2.98	2.50	2.03	1.80	1.58	1.35	1.00
60R300	4.65	4.08	3.57	3.00	2.43	2.16	1.89	1.62	1.20
60R375	5.81	5.10	4.46	3.75	3.04	2.70	2.36	2.03	1.50
60R400	6.20	5.44	4.76	4.00	3.24	2.88	2.52	2.16	1.60

Soldering Parameters



Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free

Recommended maximum paste thickness is 0.25mm

Devices can be cleaned using standard industry methods and solvents.

Note 1: All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Profile Feature

Average Ramp-Up Rate
(Ts max to T p)

Preheat

- Temperature Min(Ts min)
- Temperature Max(Ts max)
- Time(Ts min to Ts max)

Time maintained above:

- Temperature(TL)
- Time(tL)

Peak Temperature(Tp)

Ramp-Down Rate

Time 25°C to Peak Temperature

Storage Condition

Pb-Free Assembly

3°C/second max.

150°C

200°C

60~180 seconds

217°C

60~150 seconds

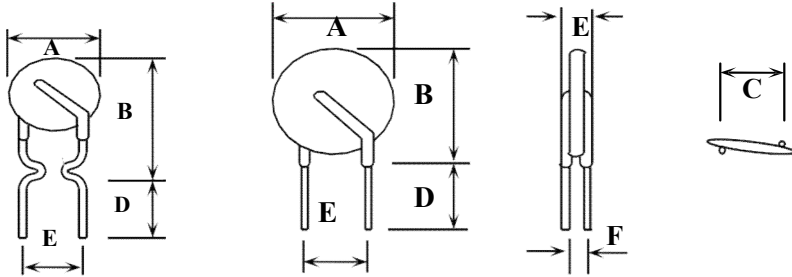
260°C

6°C/second max.

8 minutes max

0°C~35°C, ≤70%RH

Physical Dimensions(mm.)



Graph 1

Graph 2

Model	A	B	C	D	E	Pin		Graph
	Max.	Max.	Typ.	Min.	Max.	Wire diameter	Materials	
60R005	5.7	10.5	3.1	7.6	5.1	0.50	Tin plated copper clad steel wire	Graph 2
60R010	5.7	10.5	3.1	7.6	5.1	0.50		Graph 1
60R017	5.9	11.2	3.1	7.6	5.1	0.50		Graph 1
60R020	5.9	11.2	3.1	7.6	5.1	0.50		Graph 1
60R025	6.1	11.4	3.1	7.6	5.1	0.50		Graph 1
60R030	7.6	13.4	3.1	7.6	5.1	0.50		Graph 1
60R040	7.7	13.6	3.1	7.6	5.1	0.50		Graph 1
60R050	7.9	13.7	3.1	7.6	5.1	0.50		Graph 1
60R065	9.7	14.5	3.1	7.6	5.1	0.60		Graph 1
60R075	10.7	15.5	3.1	7.6	5.1	0.60		Graph 1
60R090	11.7	16.5	3.1	7.6	5.1	0.60		Graph 1
60R110	13.0	16.7	3.1	7.6	5.1	0.80		Graph 2
60R135	15.7	17.6	3.1	7.6	5.1	0.80		Graph 2
60R160	16.7	19.7	3.1	7.6	5.1	0.80		Graph 2
60R185	17.8	22.9	3.1	7.6	5.1	0.80		Graph 2
60R250	21.3	23.5	3.1	7.6	10.2	0.80		Graph 2
60R300	24.9	27.4	3.1	7.6	10.2	0.80		Graph 2
60R375	28.5	32.5	3.1	7.6	10.2	0.80		Graph 2
60R400	21	26	3.1	7.6	10.2	0.80		Graph 2