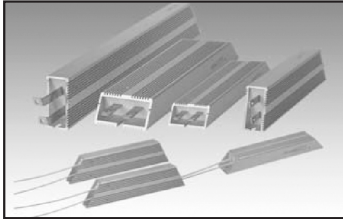


Metal Clad Wire Wound Resistors



The IRV(V=Vertical) & IRH(H=Horizontal) models are our standard wire wound, metal-clad resistors. The ULV and ULH models are UL approved versions of the IRV and IRH. These models have an extruded aluminum housing providing strong and rugged protection. Options include flying leads or tab terminals, inductive or non-inductive windings. The most common applications for these models are: Motor drives, braking and snubber applications, charging for electric vehicles and power sources for industrial equipment.

GENERAL SPECIFICATIONS

Model	Rated Power		Resistance Range[Ω]				Resistance Tolerance
	On Heatsink	In Free Air	Inductive		Non-Inductive		
			Tab Terminals	Flying Leads	Tab Terminals	Flying Leads	
IRV / IRH 60	60W	50W	0.1 ~ 400		0.1 ~ 180		IRV / IRH / ULV / ULH D [±0.5%] F [±1.0%] G [±2.0%] J [±5.0%] K [±10%]
ULV / ULH 60			0.1 ~ 375	0.1 ~ 400	0.1 ~ 180		
IRV / IRH 80	80W	64W	0.1 ~ 910		0.1 ~ 110		
ULV / ULH 80			0.1 ~ 281	0.1 ~ 910	0.1 ~ 110		
IRV / IRH 100	100W	80W	0.1 ~ 1.1K		0.1 ~ 240		
ULV / ULH 100			0.1 ~ 225	0.1 ~ 1.1K	0.1 ~ 225	0.1 ~ 240	
IRV / IRH 120	120W	96W	0.1 ~ 1.3K		0.1 ~ 300		
ULV / ULH 120			0.1 ~ 187	0.1 ~ 1.3K	0.1 ~ 187	0.1 ~ 300	
IRV / IRH 150	150W	120W	0.1 ~ 1.6K		0.1 ~ 390		
ULV / ULH 150			0.1 ~ 150	0.1 ~ 1.6K	0.1 ~ 150	0.1 ~ 390	
IRV / IRH 200	200W	140W	0.1 ~ 2.2K		0.1 ~ 1K		
ULV / ULH 200			0.1 ~ 450	0.1 ~ 2.2K	0.1 ~ 450	0.1 ~ 1K	
IRV / IRH 300	300W	210W	0.1 ~ 2.7K		0.1 ~ 1.5K		
ULV / ULH 300			0.1 ~ 300	0.1 ~ 2.7K	0.1 ~ 300	0.1 ~ 1.5K	
IRV / IRH 400	400W	240W	0.1 ~ 4.3K		0.1 ~ 2.2K		
ULV / ULH 400			0.1 ~ 225	0.1 ~ 4.3K	0.1 ~ 225	0.1 ~ 2.2K	
IRV / IRH 500	500W	300W	0.1 ~ 6.8K		0.1 ~ 3K		
ULV / ULH 500			0.1 ~ 180	0.1 ~ 6.8K	0.1 ~ 180	0.1 ~ 3K	

Also available in extended ohmic ranges of 1mΩ to 750kΩ

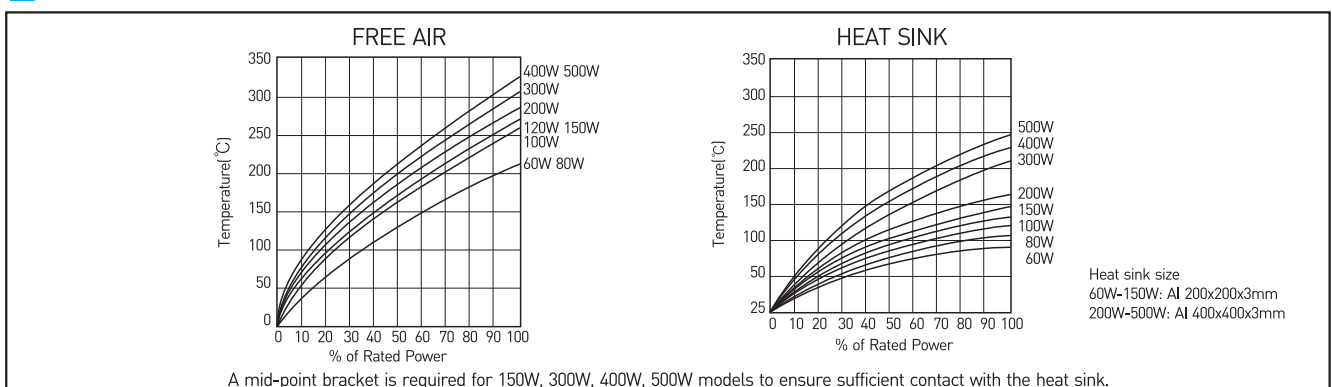
CHARACTERISTICS

Values in [] mean change in Ω after test

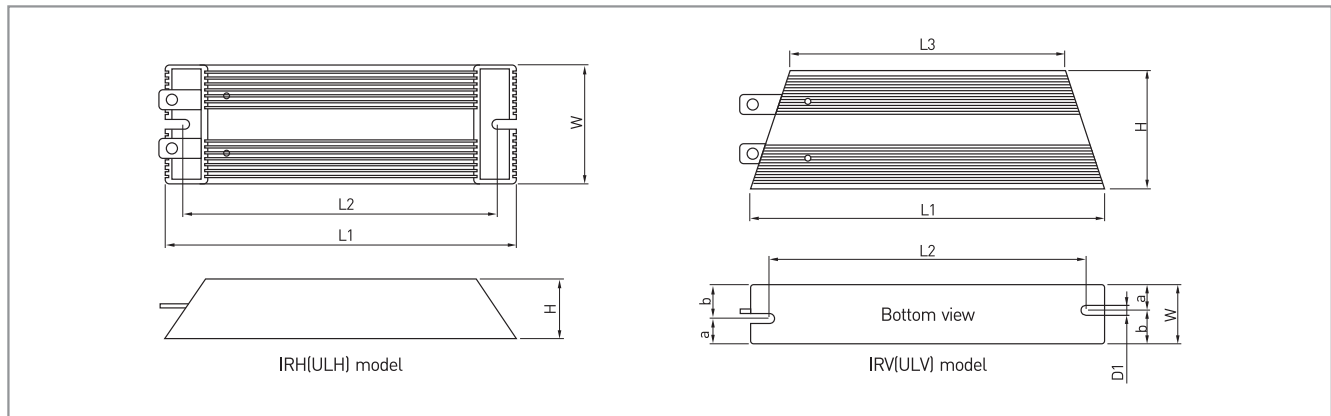
Temperature Range			-55°C ~ +200°C
Insulation Resistance			20MΩ minimum
Dielectric Withstanding Voltage	IRV / IRH ULV / ULH	Available options: AC1500V, 3500V, 4500V, 5400V for 1min.; Max. leakage current: 2mA 500V for 1min. not more than 50V, [1000V + (Voltage ratingx2) for 1min. : 50V ~ 600V [2000V + (Voltage ratingx2.25) for 1min. : 601V ~ 1500V	
Temperature Coefficient			±260ppm/°C maximum
Short Time Overload	±[2%+0.05Ω]	60W: 5×Power rating 5seconds, 80-500W: 10×Power rating 5 seconds	
Moisture Resistance	±[3%+0.05Ω]	40°C, 95% RH, DC100V case to terminal, 500 hours	
Thermal Shock	±[2%+0.05Ω]	Power rating 30 minutes, -25°C, 15 minutes	
Vibration	±[1%+0.05Ω]	10Hz-55Hz-10Hz (1 minute), 2 hours each direction	
Moisture Load Life	±[3%+0.05Ω]	40°C, 95% RH, 0.1×Power rating 1.5 hours on, 30 minutes off, 500 hours	
Load Life	±[5%+0.05Ω]	Power rating 1.5 hours on, 30 minutes off, 500 hours	

*Note: ULV / ULH dielectric strength options of AC 1500V, 3500V, 4500V, 5400V are also available.
Optional dielectric strength must be higher than standard (calculated by formula)

SURFACE TEMPERATURE INCREASE VERSUS POWER LOAD



DIMENSIONS [mm]



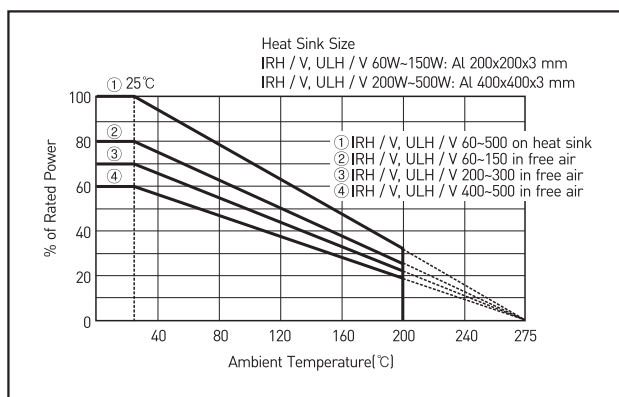
Model	Dimensions(mm)									Weight(g)	
	L1±2	L2±2	L3±2	W±0.5	H±0.5	D1±0.3	a±0.5	b±0.5	IRH / ULH	IRV / ULV	
IRH / V 60	100	87	60	41(H) 22(V)	22(H) 41(V)	4.3	10	12	110	113	
IRH / V 80	150	137	110	41(H) 22(V)	22(H) 41(V)	4.3	10	12	195	189	
IRH / V 100	165	152	125	41(H) 22(V)	22(H) 41(V)	4.3	10	12	216	215	
IRH / V 120	182	169	142	41(H) 22(V)	22(H) 41(V)	4.3	10	12	245	241	
IRH / V 150	210	197	170	41(H) 22(V)	22(H) 41(V)	4.3	10	12	283	290	
IRH / V 200	165	146	125	60(H) 30(V)	30(H) 60(V)	5.3	13	17	485	447	
IRH / V 300	215	196	175	60(H) 30(V)	30(H) 60(V)	5.3	13	17	600	600	
IRH / V 400	265	246	225	60(H) 30(V)	30(H) 60(V)	5.3	13	17	770	780	
IRH / V 500	335	316	295	60(H) 30(V)	30(H) 60(V)	5.3	13	17	990	980	

FLYING LEADS

Model	2mm ²	1.25mm ²	UL3512 AWG10	UL3512 AWG14
IRH / V 60 ~ 150	0.1Ω ~ 0.99Ω	1Ω~	×	×
IRH / V 200 ~ 500	0.38Ω ~	×	0.1Ω ~ 0.37Ω	×
ULH / V 60 ~ 120	×	×	×	0.1Ω ~
ULH / V 150	×	×	×	0.11Ω ~
ULH / V 200	×	×	0.1Ω ~ 0.15Ω	0.16Ω ~
ULH / V 300	×	×	0.1Ω ~ 0.22Ω	0.23Ω ~
ULH / V 400	×	×	0.1Ω ~ 0.30Ω	0.31Ω ~
ULH / V 500	×	×	0.1Ω ~ 0.37Ω	0.38Ω ~

*Option: Other options of flying leads are also available. Please ask RARA for more info. on this

DERATING CURVES



ORDERING PROCEDURE EXAMPLE

IRH120 **N** **5Ω** **J** **FL XXXX**
 ↓ ↓ ↓ ↓ ↓
Model # **For non-inductive** **Resistance** **Tolerance** **Flying leads (mm) option**

Thermostat options are available for these models: Internal and discreet connection. Please ask RARA for more info on this.