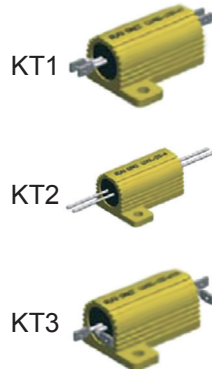


Resistors

Power Resistor

MAL - series

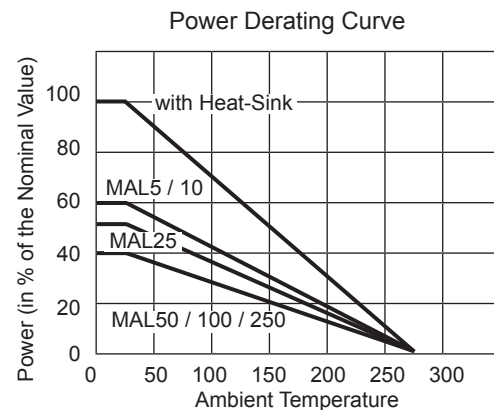


- Power Rating 5 - 250 Watt (with Heat-Sink)
- Any Resistance from 0,02Ω - 250kΩ
- Standard Tolerances from 0,02%
- Standard TCR ±20ppm/K
- Aluminium Housing
- Low Inductive Windings (Option)
- 4-Terminal (Kelvin) Connectors (Option)

Specification	MAL5	MAL10	MAL25	MAL50	MAL100	MAL250
Resistance Range	0,02Ω - 20kΩ	0,02Ω - 45kΩ	0,02Ω - 90kΩ	0,02Ω - 250kΩ	0,02Ω - 100kΩ	0,02Ω - 82kΩ
Power (free to air)	4Watt	7Watt	12,5Watt	20Watt	40Watt	100Watt
Power (with Heat-Sink)	5Watt	10Watt	25Watt	50Watt	100Watt	250Watt
Withstanding Voltage (max.)	160VAC	265VAC	550VAC	1250VAC	1900VAC	2200VAC
Tolerances	0,02%; 0,05%; 0,1%; 0,25%; 0,5%; 1%					
Temperature Coefficient	±20ppm/K (R ≥ 10Ω) ±50ppm/K (1Ω ≥ R < 10Ω) ±90ppm/K (0,1Ω ≥ R < 1Ω), ±120ppm/K (R < 0,1Ω)					
Operating Temperature Range	-55 °C - 250 °C					
Insulation Resistance	10GOhm					

Mechanical Data

Housing / Body	Aluminium
Resistance Element	Wire, Special Alloy
Carrier	Ceramics
Terminals MAL 5 - 50	Copper - Tin Plated
Terminals MAL 100 / 250	Screw Thread



Parameter

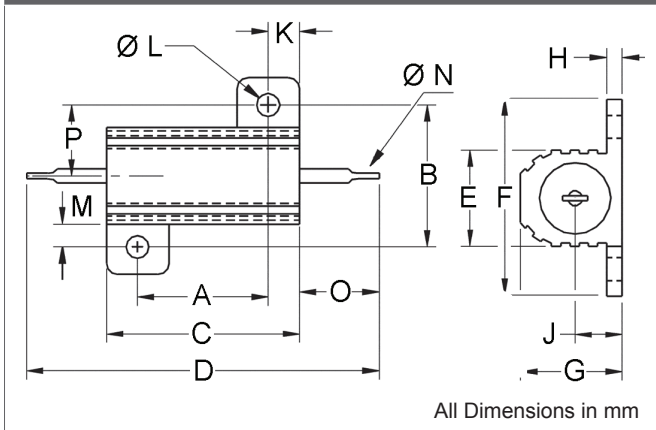
Parameter	ΔR
Dielectric	±0,2% + 0,05Ω
Stability	±1% + 0,05Ω
Shelf Life	±0,2% + 0,05Ω
Humidity	±0,2% + 0,05Ω
Thermal Shock	±0,2% + 0,05Ω
5X Overload (5s)	±0,2% + 0,05Ω
Shock	±0,1% + 0,05Ω
Vibration	±0,1% + 0,05Ω

Resistors

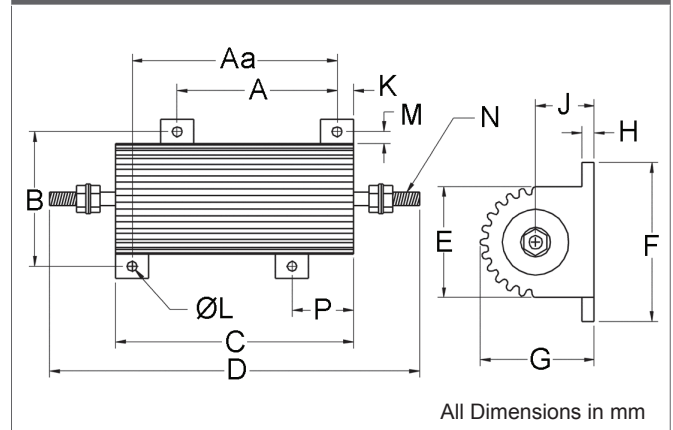
Power Resistor

MAL - series

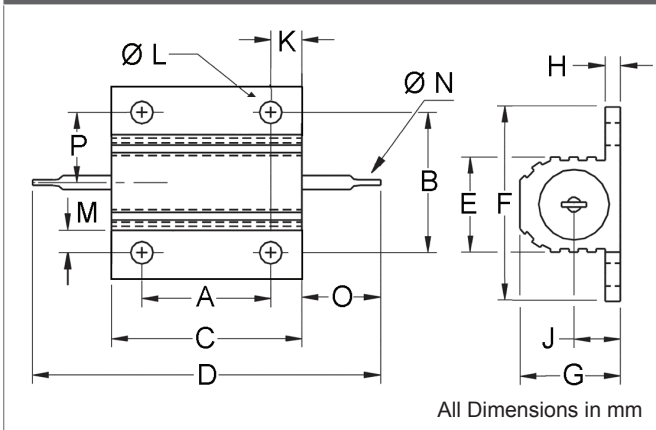
Technical Drawing MAL5/10/25/50



Technical Drawing MAL250



Technical Drawing MAL100



Type	A	Aa	B	C	D	E	F	G	H	J	K	L	M	N	O	P
(Tolerance)	±0,15	-	±0,15	±0,8	±4,0	±0,5	±0,5	±0,5	±0,4	±0,4	±0,3	±0,15	±0,5	±0,5	±1,6	±0,8
MAL 5	11,3	-	12,4	15,2	28,8	8,5	16,4	8,1	1,7	3,6	2,0	2,4	2,0	1,3	6,8	6,2
MAL 10	14,3	-	15,9	19,1	34,9	10,9	20,3	10,2	1,9	4,8	2,4	2,4	2,6	2,2	7,9	7,9
MAL 25	18,3	-	19,8	27,0	49,2	13,5	27,4	14,2	2,2	6,6	4,4	3,2	3,2	2,2	11,1	9,9
MAL 50	39,7	-	21,4	50	72,2	15,6	29,0	15,6	2,2	7,6	5,0	3,2	3,2	2,2	11,1	10,7
MAL 100	35,0	-	37,0	65,2	87,6	27,2	47,6	24,0	3,7	11,8	15,5	4,4	5,1	-	11,2	18,5
MAL 250	76,2	98,2	63,5	114,0	179,0	54,0	77,0	55,5	5,5	25,2	7,8	4,8	4,8	1/4-20	-	29,8

Resistors

Power Resistor

MAL - series

Examples for Heat-Sink Dimensions

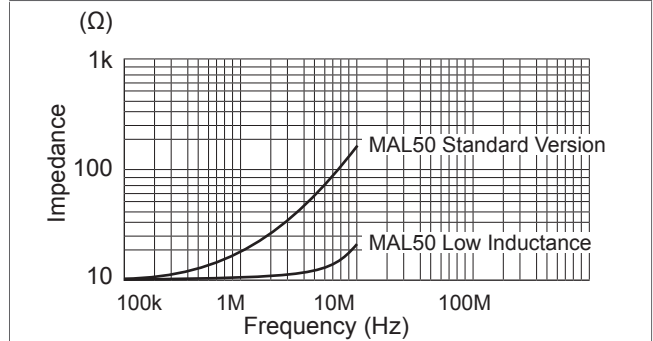
Aluminium	Area (cm ²)	Thickness (mm)
MAL5	150	1
MAL10	150	1
MAL25	200	1
MAL50	930	2

Other values on request

Mounting Notes:

For the mounting of the resistor a special thermal grease has to be used.

Frequency Characteristics



Options

Low Inductive Version

„N“

4 - Terminal (Kelvin) Version

„KT1, KT2, KT3“

Ordering Information

Typ	Tolerance	Temperature Coefficient	Resistance Value	Low-Inductance	4 - Term.
MAL25	W1%	TK50	10k000	N	K
	0,02%; 0,05%; 0,1%; 0,25%; 0,5%; 1%	±20ppm/K (R ≥ 10Ω) ±50ppm/K (1Ω ≥ R < 10Ω) ±90ppm/K (0,1Ω ≥ R < 1Ω), ±120ppm/K (R < 0,1Ω)	(0,05Ω - 250kΩ)	N	KT1