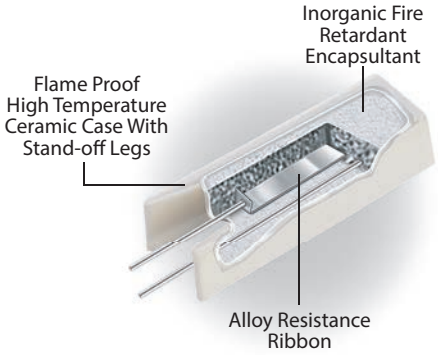


CURRENT SENSE / LOW OHM
CERAMIC ENCASED TYPE

HMVL

SERIES

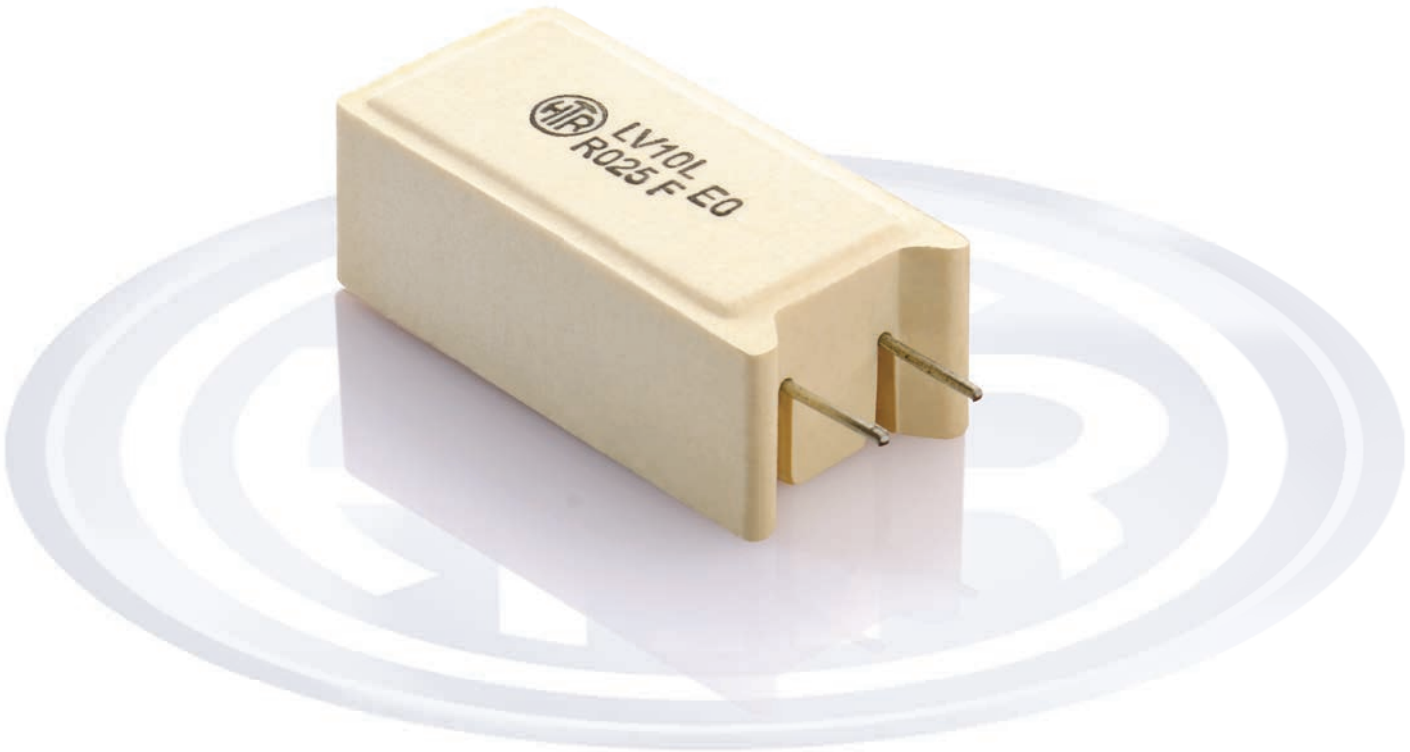
SPACE SAVER

Slim Type Vertical Mounting

- Especially designed for crowded PCB's
- Ceramic stand-offs.
- Any resistance value possible within resistance range given.
- 2.5W to 15W
- R004 to R20

AEC-Q200 Qualified

Pb-free * RoHS COMPLIANT

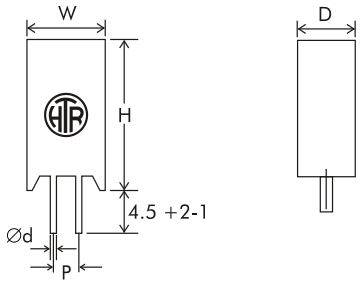


e : info@htr-india.com

CURRENT SENSE /
LOW OHM
CERAMIC
ENCASED TYPE

HMVL

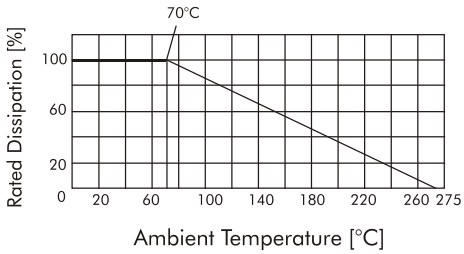
PHYSICAL CONFIGURATION



HTR TYPE	POWER RATING at 70°C	DIMENSIONS (mm)					RESISTANCE RANGE		TYPICAL WEIGHT PER PC (gms)
		W ±1	H ±1.5	D ±1	ϕ d ±0.05	P ±1	min	max	
M2L	2.5W	11.0	20.5	7.0	0.8	5.0	R004	R063	3.5
M4L	4W	12.0	25.0	7.0	0.8	5.0	R004	R10	4.5
LV5L	5W	13.0	25.5	9.0	0.8/1.0	5.0	R004	R10	6.0
M7L	7W	12.5	38.0	9.0	0.8/1.0	5.0	R005	R15	7.0
LV7L	7W	13±1.5	38.5	9.0	0.8/1.0	5.0	R005	R15	12.5
LV10L	10W	16.0	35.0	12.0	0.8/1.0	7.5	R005	R15	14.5
LV10AL	10W	13.0	50.0	9.0	0.8/1.0	5.0	R005	R20	12.5
LV15L	15W	20±1.5	38	13.0	1.0	7.5	R005	R15	30

- LV5L / M7L / LV7L / LV10L / LV15L and LV10AL are also available with 1mmØ terminations which contributes to lowering the TCR of the resistor.
- The resistance values must be checked using 4½ digit micro-ohm meter with four wire system and insulated clips.

DERATING CURVE



ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS / DATA

PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
Power Rating (Rated Ambient Temperature)	Full Power dissipation at 70°C and linearly derated to zero at +275°C (Refer Derating Curve above)
Resistance Tolerances Available	±10% (K); ±5% (J); ±3%(H); ±2%(G); ±1%(F); ±0.5%(D)
Operating Temperature Range	-55°C to +275°C with suitable derating as per derating curve.
Voltage Rating / Limiting Voltage / Max. Working Voltage	$V=\sqrt{PxR}$
Voltage Proof / Dielectric Withstanding Voltage (based on 1000V rms for 60secs)	ΔR ± [1% + R05] - Average. No flashover or mechanical damage
Insulation Resistance [MIL STD 202F - Test Method 302]	>1000M (Min)
Short Time Overload (5 x Rated power upto 2 watts and 10 x Rated power 3 watts and above for 5 secs)	ΔR ± [1% + R0005] - Average ΔR ± [2% + R0005] - For resistance values near maximum range.
Temperature Co-efficient of Resistance [Measured from -55°C to +125°C referenced to +25°C]	±60 to 400 ppm/°C (Depending on resistance value)
Thermal Shock [-65°C to +125°C, 5 cycles, 15 mins at each extreme temperature]	ΔR ± [1.5% + R0005] - Average
Mechanical Shock (Specified Pulse) [MIL STD 202F - Test Method 213B condition 'C']	ΔR ± [0.75% + R0005] - Typical
Moisture Resistance [MIL STD 202F - Test Method 106E with step 7b eliminated]	ΔR ± [1.25% + R0005] - Average
Damp Heat (Steady State) / Humidity (40°C at 95% R.H for 250 hours)	ΔR ± [1.5% + R0005] - Typical
Endurance - Load Life (70°C with limiting voltage - 1.5 hours on / 0.5 hours off)	ΔR ± [2.5% + R0005] - Average - 2000 hours duration ΔR ± [≤ 2.0% + R0005] - Typical - 1000 hours duration
Solvent Resistance [IPA for 60 secs ±10 secs]	No effect on case filling / marking

CURRENT SENSE / LOW OHM CERAMIC ENCASED TYPE

HMVL

MECHANICAL SPECIFICATIONS

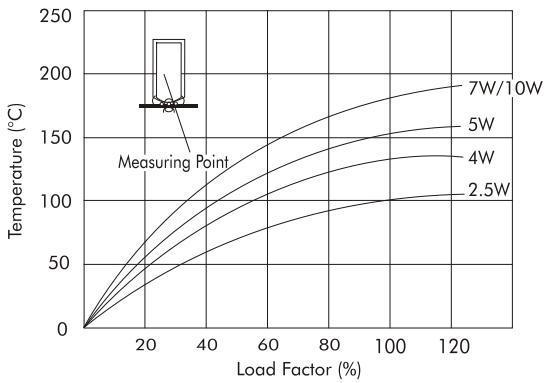
PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
Pull Test / Robustness of Terminations [Direct load 2 to 4.5 Kgs depending on size for 15 secs]	No effect
Resistance to Soldering Heat (260°C - 270°C for 4 secs)	ΔR ± [0.1% + R0005] - Typical
Solderability [MIL STD 202F - Test Method 208F]	Must meet the requirements laid down (95% satisfactory coverage)
Marking	As per IEC Pub. 60062

TEMPERATURE RISE (AT FULL POWER)

(Ambient temperature 32°C)

•Temperature rise at solder joint on PCB would be substantially lower. (Consult factory for details)

Temperature Rise Chart



TYPICAL APPLICATIONS

These resistors find wide application in inverters and power supplies.
The HMVL series offers a practical solution to current sensing applications where PCB space is at a premium and low inductance is required - SMPS and linear power supplies.

For the effective utilization of these resistors, please refer "Application / Design notes for current sense resistors".

Note : The ceramic cases used may be steatite ceramic, corderite ceramic or high alumina ceramic. Thus, the ceramic cases may be off-white or variations of brown / grey, colours which are inherent to these ceramic material.

ORDERING INFORMATION

Series	Type	Packing	Resistance Value	Tolerance
HMVL	M7L/M7L*	Bulk M7L/M7L*	R068	J

1. For RoHS version - M-7L *
2. For 1mm terminations - M-7L (1)