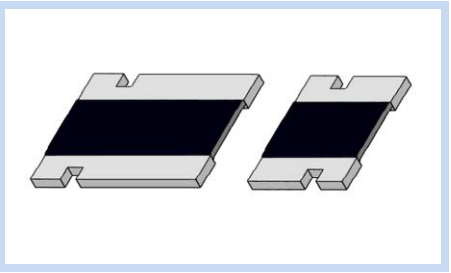
Metal Alloy Chip Resistor
Current Sensing 4 Terminal Type

MLRF series

MERITEK

FEATURE

- Operating Temperature: -55 ~ +170°C
- High Precision Current Sensing and Voltage Division
- Excellent Long Term Stability
- Construction Design Ensures Performance with Low and Stable TCR
- Application: Power Supply, Measuring Instrument, Battery Management



PART NUMBERING SYSTEM

MLRF	1225	S	R002	D
(1)	(2)	(3)	(4)	(5)

RoHS

No	Item	Digit	Description	
(1)	**Meritek Series**	MLRF	Metal Alloy Chip Resistor, Current Sensing 4 Terminal Type	
(2)	**Size Code**	1225	1225: 1.2x2.5mm	L x W (mm) See Dimension Table Below
(3)	**Power Rating**	S	S: 2W	R: 3W
(4)	**Resistance**	R002	R002: 2mΩ	R025: 25mΩ, R100: 100mΩ, 0M75: 0.75mΩ
(5)	**Tolerance**	D	D: ±0.5%	F: ±1%

ELECTRICAL CHARACTERISTICS

Size Code	Power Rating at 70°C (W)	TCR (PPM/°C)	Resistance (mΩ)		Rating Current (A) Max	Overload Current (A) Max	Material
			±0.5(D)	±1.0(F)			
1225	2.0	±50	2	2	31.62	70.01	Iron-Chromium Aluminum
	3.0	±50	2	2	38.73	86.60	Iron-Chromium Aluminum
2512	2.0	±50	3.3	3.3	24.62	55.05	Copper-Manganese
	2.0	±50	6.2,12	6.2, 12	24.62	55.05	Iron-Chromium Aluminum
	3.0	±50	3.3	3.3	30.15	67.42	Copper-Manganese
	3.0	±50	6.2,12	6.2, 12	30.15	67.42	Iron-Chromium Aluminum
3637	3.0	±75	0.3~1	0.3~1	100.00	233.61	Copper-Manganese
	3.0	±50	2~5	2~5	100.00	233.61	Iron-Chromium Aluminum

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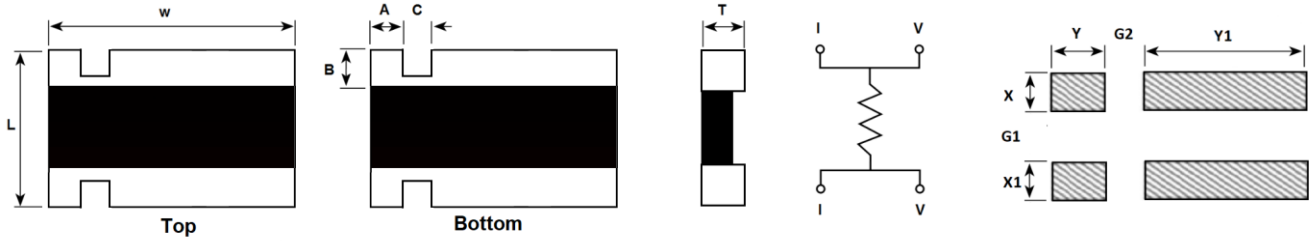
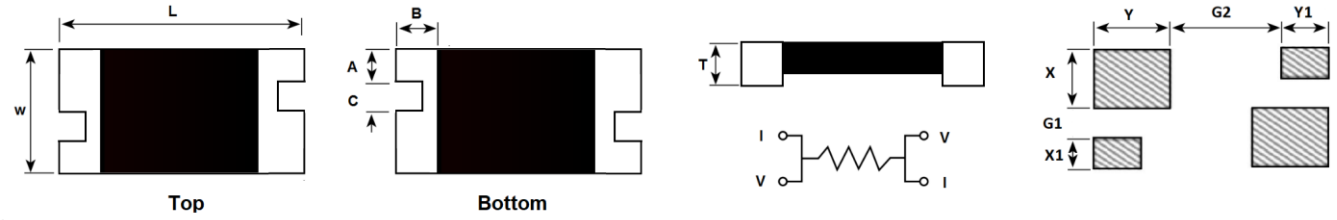
DIMENSIONS – Size 1225/3637



Unit: mm

Size	Power Rating (W)	Resistance (mΩ)	L ±0.254	W ±0.254	T ±0.254	A ±0.254	B ±0.254	C ±0.254	X	X1	Y	Y1	G1	G2
1225	2.0, 3.0	2.0	3.20	6.35	1.02	1.21	0.51	1.21	1.00	1.00	1.70	4.50	1.70	0.80
3637	3.0	0.3~5	9.14	9.40	1.20	1.50	2.31	1.00	2.95	2.95	1.68	7.62	4.50	0.60

DIMENSIONS - Size 2512



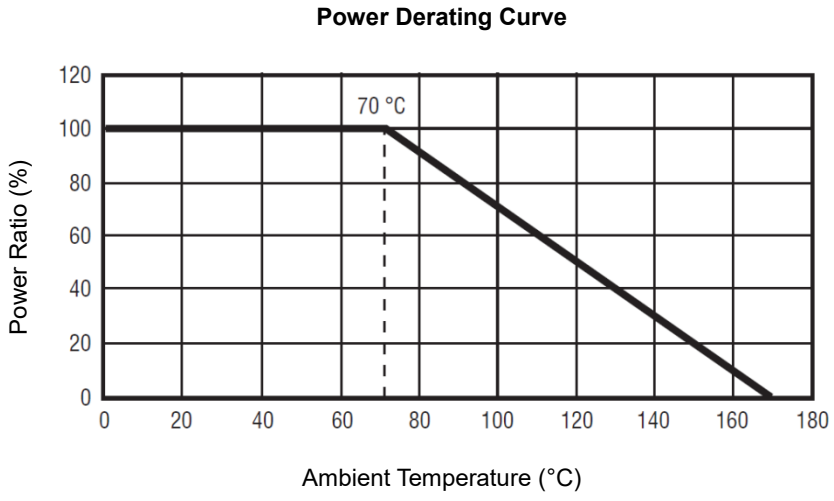
Units: mm

Size	Power Rating (W)	Resistance (mΩ)	L ±0.254	W ±0.254	T ±0.254	A ±0.254	B ±0.254	C ±0.254	X	X1	Y	Y1	G1	G2
2512	2.0	3.3	6.248	3.202	0.88	0.80	2.10	0.80	2.0	1.14	2.6	1.39	0.53	2.17
		6.2					1.20				2.1			3.17
		12					1.20				2.1			3.17
	3.0	3.3	6.248	3.202	0.88	0.80	1.88	0.80	2.0	1.14	2.6	1.39	0.53	2.17
		6.2					1.20				2.1			3.17
		12					1.20				2.1			3.17

RELIABILITY TEST CONDITION AND REQUIREMENT

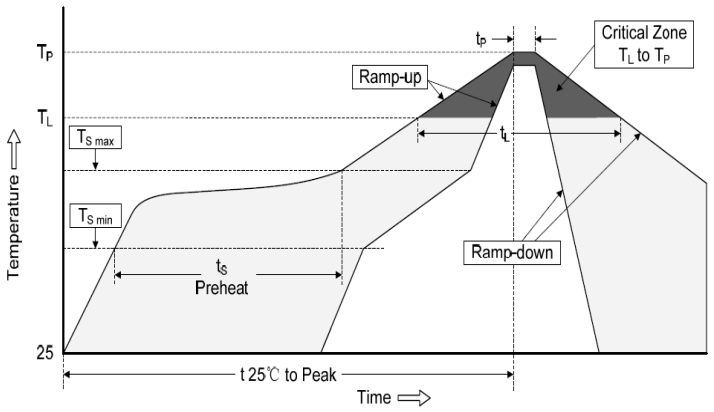
Test	Standard	Condition	Requirement
Temperature Coefficient of Resistance (T.C.R.)	**JIS-C-5201-1 4.8**	$T.C.R.(\frac{ppm}{C}°) = \frac{(R2-R1)}{R1(T2-T1)} \times 10^6$ R1: resistance at room temp. (T1) R2: resistance at 150°C (T2)	As Specified
Short Time Overload	**JIS-C-5201-1 4.13**	5X rated power for 5 seconds	1225: ≤ ±0.5% 2512: ≤ ±1.0% 3637: ≤ ±0.5%
Resistance to Soldering Heat	**JIS-C-5201-1 4.18**	260±5°C for 10±1 seconds	≤ ±0.5%
Solderability	**JIS-C-5201-1 4.17**	245±5°C for 3±0.5 seconds	95% min. coverage
Vibration	**JIS-C5201-1 4.22**	Frequency: 10Hz ~ 55Hz ~10Hz, Amplitude:1.5mm Time:12 hrs, 4 hrs in each 3 perpendicular directions	≤ ±0.5% No damage
Low Temperature Storage	**JIS-C-5201-1 4.23.4**	1,000 hour at -55°C±2°C	≤ ±0.5%
High Temperature Storage	**JIS-C5201-1 4.23.2**	1,000 hour at +170°C±5°C	≤ ±0.5%
Rapid Change of Temperature	**JIS-C-5201-1 4.19**	-55°C ~ +155°C, 1000 cycles	≤ ±0.5%
Moisture Resistance	**MIL-STD 202 Method 106**	10 Cycles of damp heat without power.	≤ ±0.5%
Bias Humidity	**JIS-C-5201-1 4.24**	85±5°C, 80~90% R.H. 10% bias and RCWV for 1000 hrs with 1.5 hrs “ON” and 0.5 hrs “OFF”	≤ ±0.5%
Load Life	**JIS-C-5201-1 4.25**	70±2°C, RCWV for 1000 hrs with 1.5 hrs “ON” and 0.5 hrs “OFF”.	≤ ±1.0%

POWER DERATING CURVE



SOLDERING RECOMMENDATION

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	180°C
	Time (min. to max.) (t_s)	120s Max
Average ramp up rate (T_L) to peak		3°C/s
$T_{s(max)}$ to T_L (Ramp-up rate)		3°C/s
Reflow	Temp. (T_L)	220°C
	Time (min. to max.) (t_L)	60s Max
Peak Temperature (T_P)		260°C
Time within 5°C of T_P (t_p)		10s Max
Ramp-down Rate		6°C/s



PACKING QUANTTITY

Size	Tape Width (mm)	PCS / Reel	
		4mm pitch	8mm pitch
3637	16	1000	--
2512(0.3mΩ)	12	--	2000
2512	12	4000	--
1225	12	4000	--

*Specifications subject to change without notice.