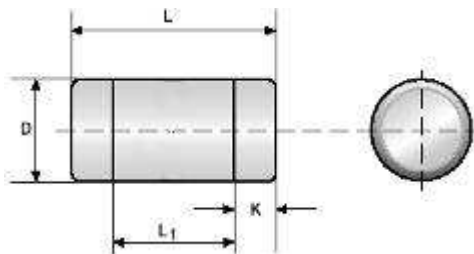


- Features:
- Thin Film Technology for precision and stability
 - Excellent power to size ratio
 - Exhibits good pulse power characteristics
 - RoHS compliant / lead-free



Electrical Specifications									
Type / Code	Package Size	Power Rating (Watts) @ 70°C	Maximum Working Voltage(1)	Maximum Overload Voltage	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance			
						0.1%	0.5%	1%	5%
MLF14	0204	0.25W	200V	400V	±10 ppm/°C	49.9 - 20K	49.9 - 20K	49.9 - 20K	49.9 - 20K
					±15 ppm/°C	49.9 - 300K	49.9 - 300K	49.9 - 300K	49.9 - 300K
					±25 ppm/°C	10 - 1M	10 - 1M	10 - 1M	10 - 4.7M
MLF12	0207	0.5W	300V	500V	±10 ppm/°C	49.9 - 20K	49.9 - 20K	49.9 - 20K	49.9 - 20K
					±15 ppm/°C	49.9 - 300K	49.9 - 300K	49.9 - 300K	49.9 - 300K
					±25 ppm/°C	10 - 1M	10 - 1M	10 - 4.7M	10 - 4.7M
MLFM1	0207	1W	350V	700V	±15 ppm/°C	49.9 - 100K	49.9 - 100K	49.9 - 100K	49.9 - 100K
					±25 ppm/°C	10 - 1M	10 - 1M	10 - 1M	10 - 1M
					±50/100 ppm/°C	10 - 1M	1 - 1M	1 - 10M	1 - 10M

(1) Lesser of √PR or maximum working voltage

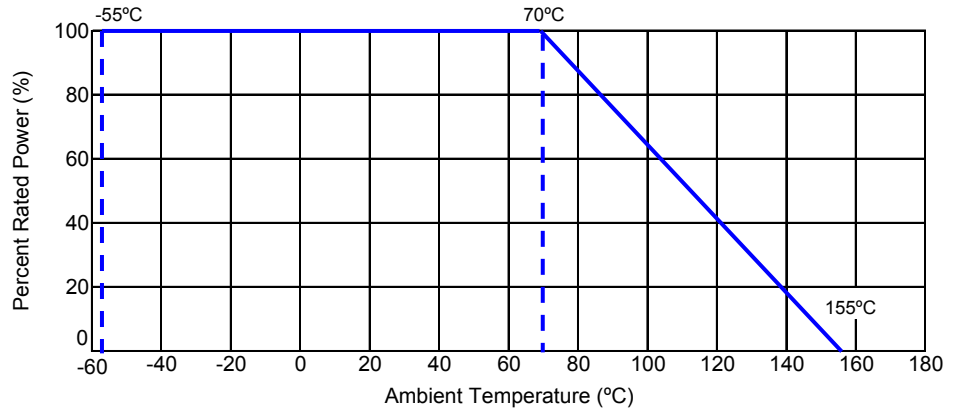


Mechanical Specifications					
Type / Code	L Body Length	D Body Diameter	L1 Inner Body	K Termination	Unit
MLF14	0.138 ± 0.008	0.055 ± 0.006	0.09	0.020 ± 0.004	inches
	3.50 ± 0.2	1.40 ± 0.15	2.3	0.50 ± 0.1	mm
MLF12 MLFM1	0.232 ± 0.008	0.087 ± 0.008	0.185	0.020 ± 0.004	inches
	5.90 ± 0.2	2.20 ± 0.2	4.7	0.50 ± 0.1	mm

Performance Characteristics	
Test	Specification
Load Life	±2%
Load Life in Moisture	±2%
Resistance to Soldering Heat	±0.5%
Solderability	Min 95% coverage
Short Time Overload	±0.5%
Insulation Resistance	1GΩ minimum

Operating Temperature Range: -55°C to +155°C

Power Derating Curve:



How to Order

1	2	3	4	5	6	7	8	9	10	11	12
M	L	F	1	2	D	T	E	4	K	7	5

Product Series		Size	Power	Tolerance			Packaging				TCR		Resistance Value	
Type	Description	Code	Wattage	Code	Tol	Value	Code	Description	Size	Quantity	Code	ppm		
MLF	Standard	14	0.25W	B	0.1%	E96, E24	T	7" Reel	14	3,000	T	10	Four characters with the multiplier used as the decimal holder. 10 ohm = 10R0 100 ohm = 100R 1 Kohm = 1K00 560 Kohm = 560K	
MLFM	Mini	12	0.5W	D	0.5%		E24		Paper Tape	12, 1	2,000	S		15
		1	1W	F	1%							E		25
				J	5%							C		50
											D	100		

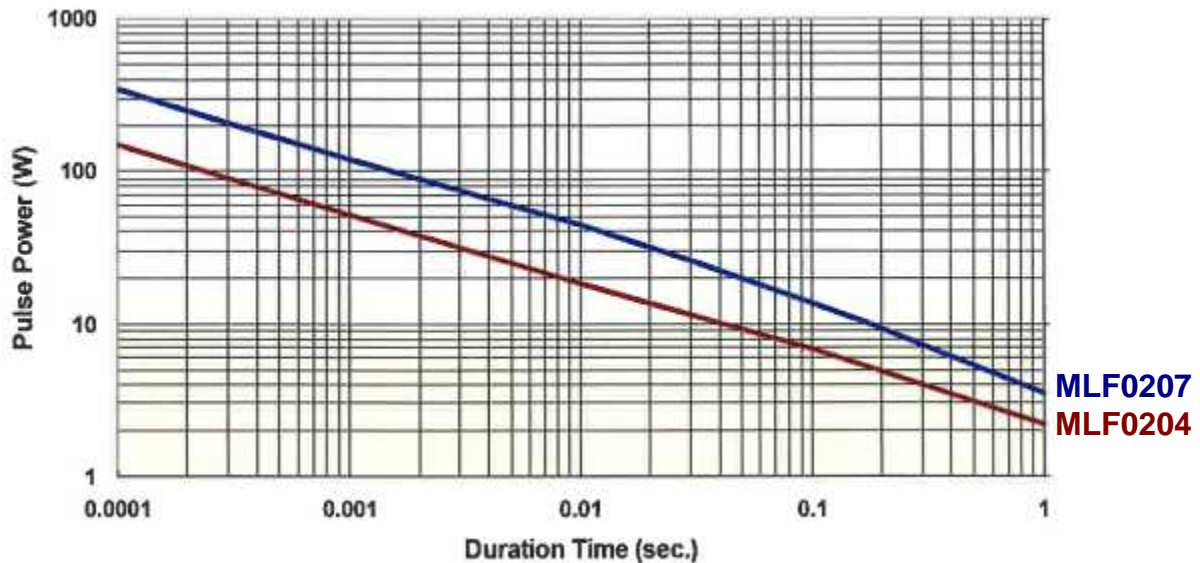
Legacy Part Number (before January 3, 2011):

SEI Type		Code		TCR		Nominal Resistance	Tolerance		Packaging			
MLF		1/2		T9		4.75K	0.5%		R			
Type	Description	Code	Wattage	TCR (ppm)		Tolerance Values		SEI Types		Pkg Qty	Code	Description
MLF	Standard	1/4	0.25W	T1	100	0.1%	E96, E24	MLF0204	3,000	R	7" reel paper tape	
MLFM	Mini	1/2	0.5W	T2	50	0.5%	E96, E24	MLF0207, MLFM0207	2,000			
		1	1W	T9	25	1%	E96, E24					
				TD	15	5%	E24					
				TB	10							

Pulse withstanding capacity

The single impulse graph is the result of 50 impulses of rectangular shape applied at one-minute intervals. The limit of acceptance was a shift in resistance of less than 1% from the initial value. The power applied was subject to the restrictions of the maximum permissible impulse voltage graph shown.

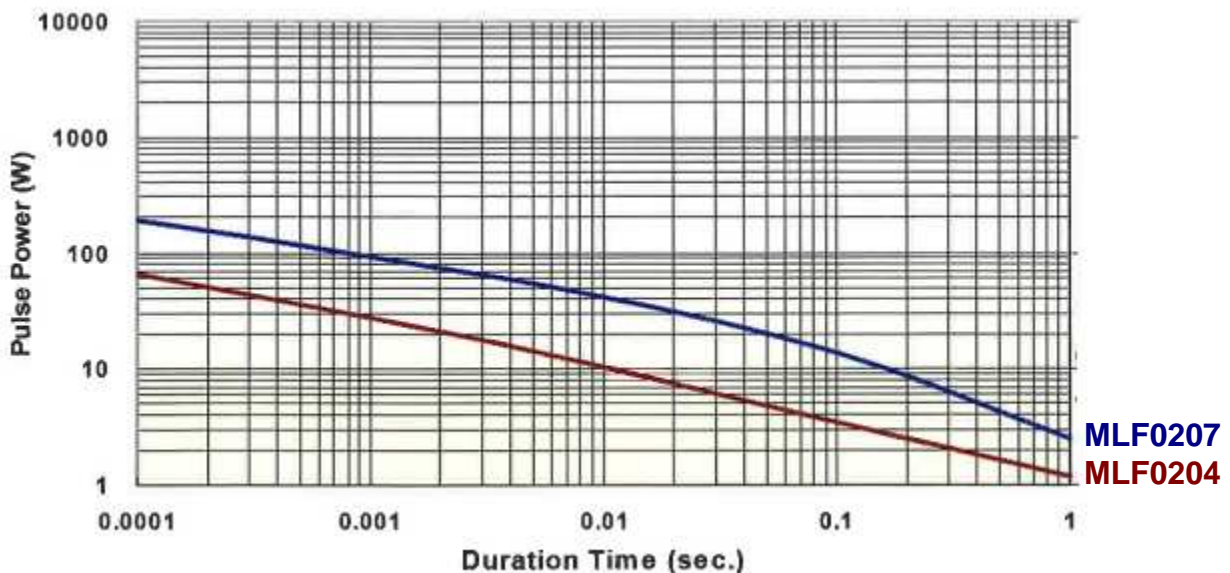
MLF Series Single Pulse (100 Ohm)



Continuous Pulse

The continuous load graph was obtained by applying repetitive rectangular pulses where the pulse period was adjusted so that the average power dissipated in the resistor was equal to its rated power at 70°C. Again the limit of acceptance was a shift in resistance of less than 1% from the initial value.

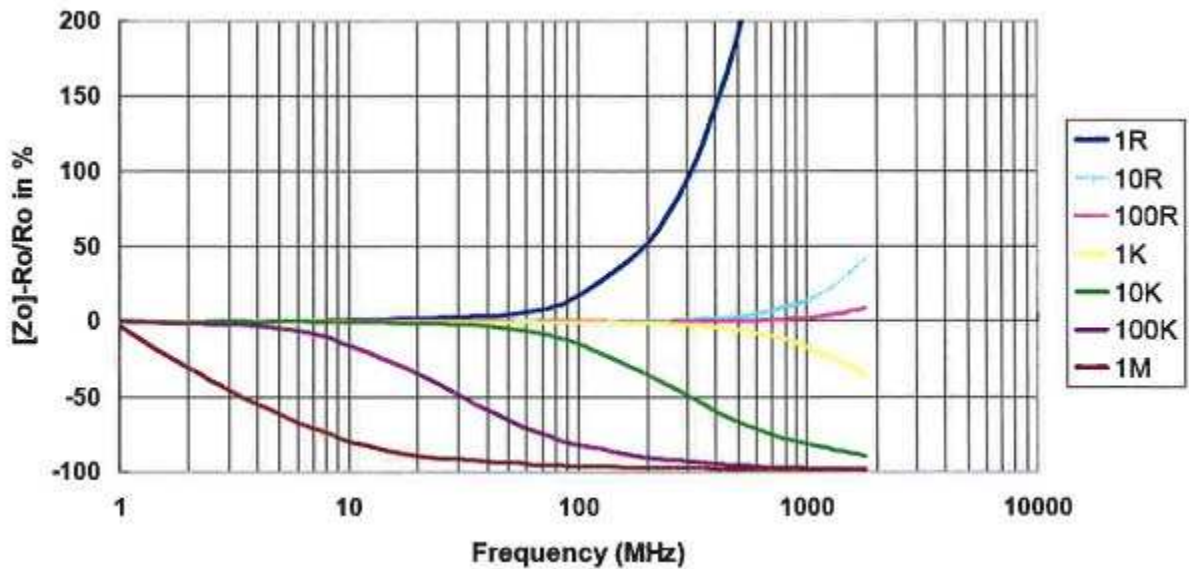
MLF Series Continuous Pulse (100 Ohm)



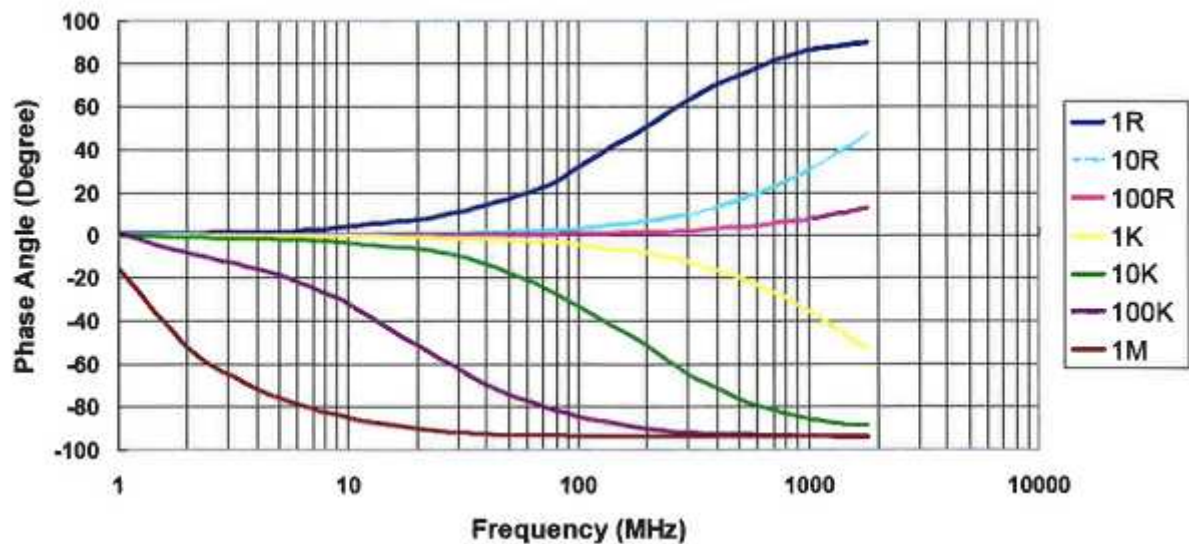
Frequency behavior

Resistors are designed to function according to ohmic laws. This is basically true of resistors for frequencies up to 100 kHz. At higher frequencies, there is an additional contribution to the impedance by an ideal resistor switched in series with a coil and both switched parallel to a capacitor. The values of the capacitance and inductance are mainly determined by the dimensions of the terminations and the conductive path length. The environment surrounding components has a large influence on the behavior of the component on the printed-circuit board.

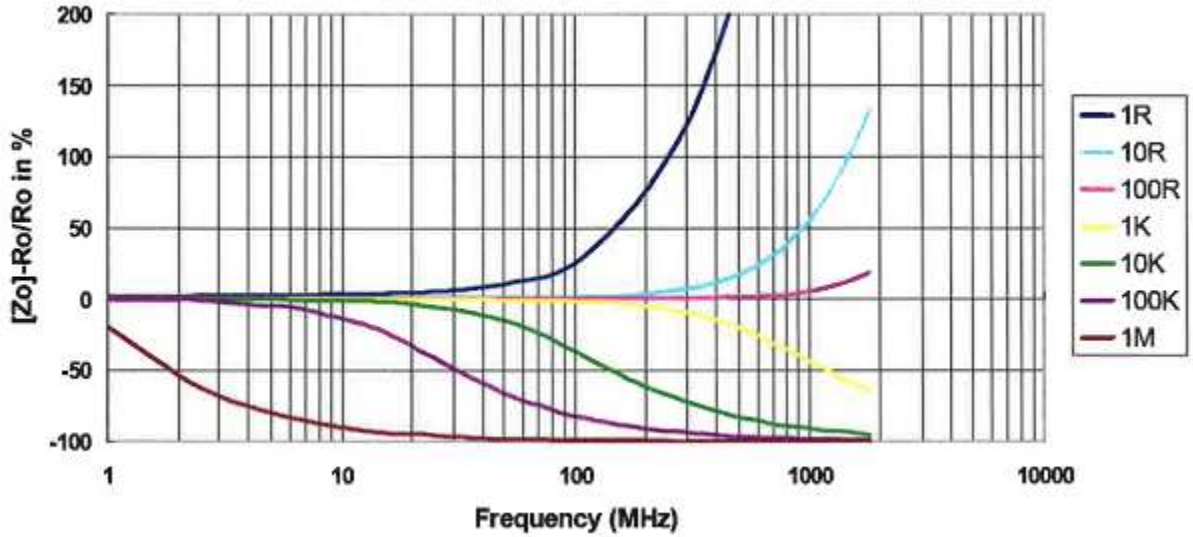
**Frequency versus Impedance
MLF0204**



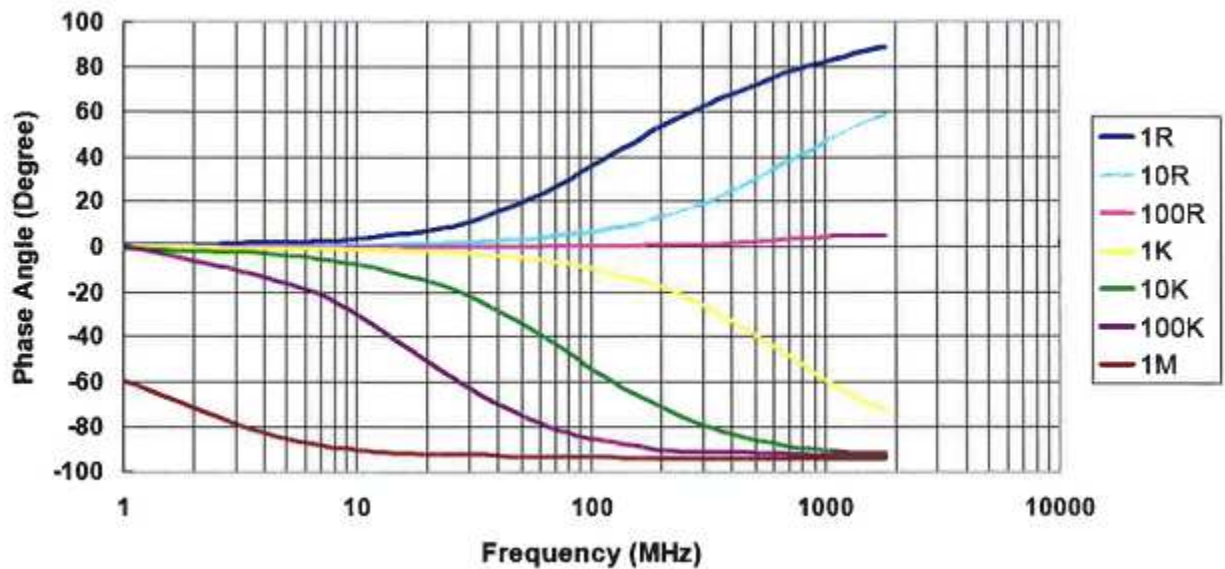
**Frequency versus Phase Angle
MLF0204**



**Frequency versus Impedance
MLF0207**



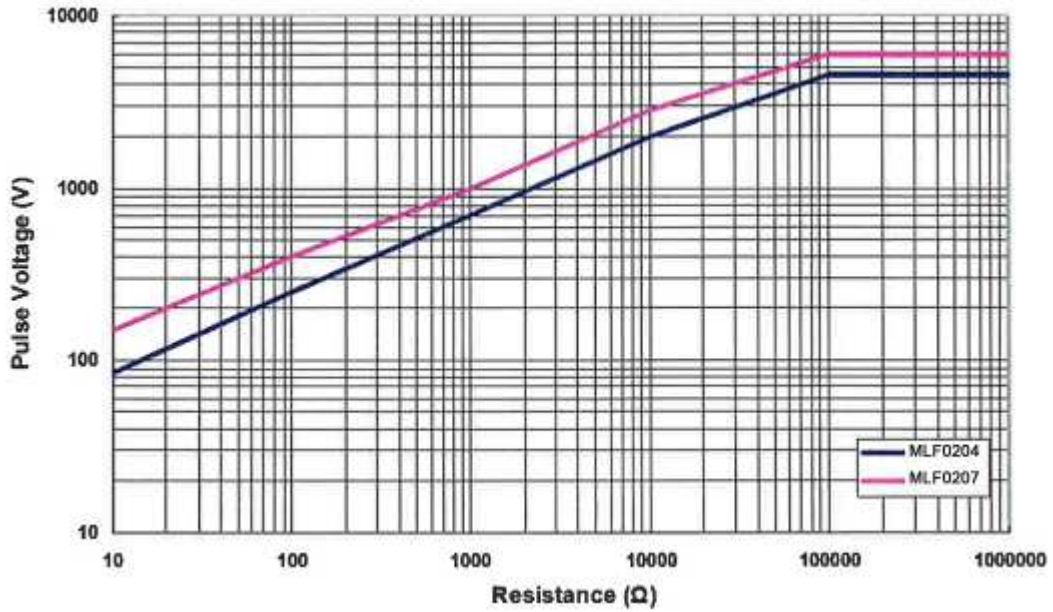
**Frequency versus Phase Angle
MLF0207**



Lightning Surge

Resistors are tested in accordance with IEC 60 115-1 using both 1.2/50us and 10/700us pulse shapes. The limit of acceptance is a shift in resistance of less than 0.5% from the initial value.

1.2/50µs Lightning Surge



10/700µs Lightning Surge

