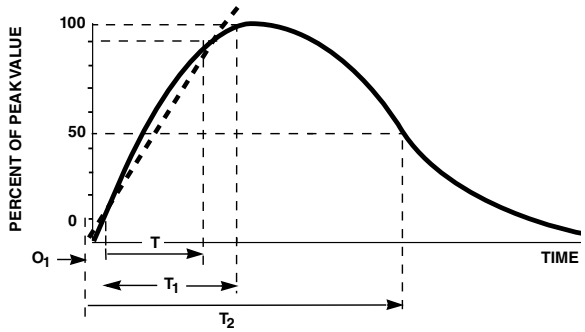
Reliability and Environmental Specifications

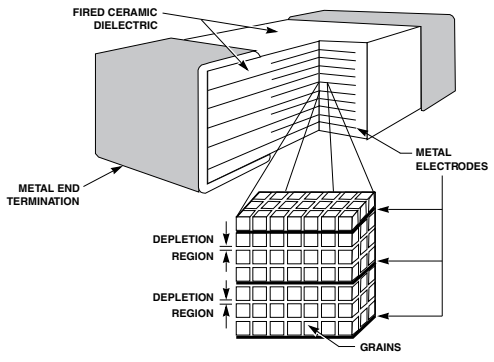
	Judge Criteria	Test Condition
Solderability	> 95% solder coverage	245 +/- °C, 3 +/- 1 sec.
Leaching Resistance	> 95% solder coverage	245 +/- °C, 3 +/- 1 sec.
High Temperature Exposure	Δ Vv / Vv ≤ 10%	1000 hours 85°C, un-powered
Thermal Shock	Δ Vv / Vv ≤ 10%	-45 to +85 °C, 30 min. cycle, 5 cycles
Operating Life	Δ Vv / Vv ≤ 10%	85 °C, DC working voltage 1000 hours
Bias Humidity	Δ Vv / Vv ≤ 10%	40 °C / 85% RH, DC working voltage 1000 hours

Peak Pulse Current Test Waveform for Clamping Voltage



0_1 = Virtual Origin of Wave
T = Time from 10% to 90% of Peak
T_1 = Rise Time = 1.25 x T
T_2 = Decay Time
Example - For an 8/20 μs Current Waveform:
8μs = T_1 = Rise Time
20μs = T_2 = Decay Time

Multilayer Internal Construction

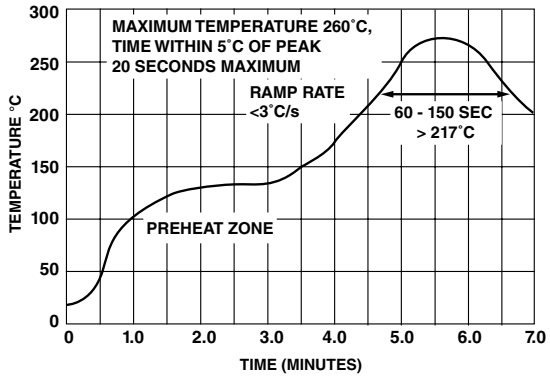


Lead–free (Pb-free) Soldering Recommendations

To avoid the possibility of generating stresses due to thermal shock, a preheat stage in the soldering process is recommended, and the peak temperature of the solder process should be rigidly controlled.

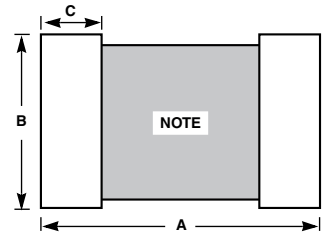
When using a reflow process, care should be taken to ensure that the ML chip is not subjected to a thermal gradient steeper than 4 degrees per second; the ideal gradient being 2 degrees per second. During the soldering process, preheating to within 100 degrees of the solder's peak temperature is essential to minimize thermal shock.

Once the soldering process has been completed, it is still necessary to ensure that any further thermal shocks are avoided. One possible cause of thermal shock is hot printed circuit boards being removed from the solder process and subjected to cleaning solvents at room temperature. The boards must be allowed to cool gradually to less than 50° C before cleaning.



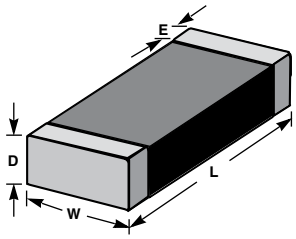
Product Dimensions (mm)

PAD LAYOUT DIMENSIONS



NOTE : Avoid metal runs in this area, parts not recommended for use in applications using Silver (Ag) epoxy paste.

CHIP LAYOUT DIMENSIONS



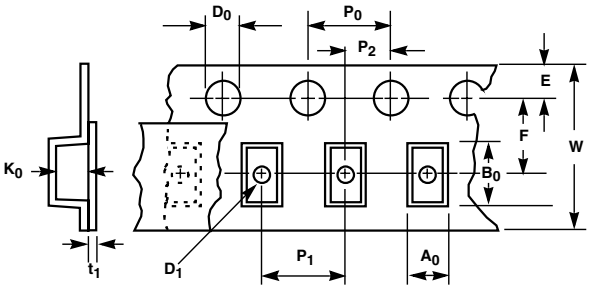
Dimension	0201 Size	
	IN	MM
A	0.055	1.40
B	0.020	0.50
C	0.020	0.50
D (max.)	0.014	0.35
E	0.008 -/+0.004	0.20 -/+0.10
L	0.024 -/+0.002	0.60 -/+0.05
W	0.012 -/+0.002	0.30 -/+0.05

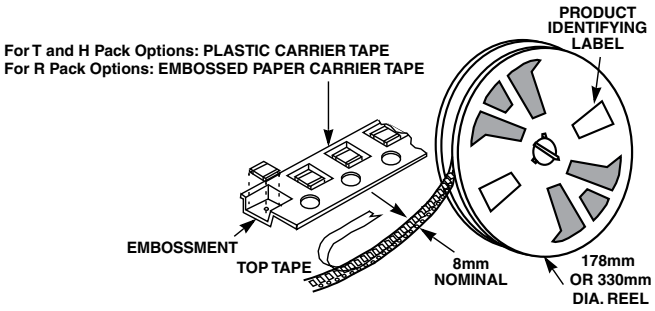
Part Numbering System

V 5.5 MLA 0201 xx N R

- DEVICE FAMILY: Littelfuse TVSS Device
- MAXIMUM DC WORKING VOLTAGE
- MULTILAYER SERIES DESIGNATOR
- DEVICE SIZE: 0201 = .024 inch x .012 inch (0.6 mm x 0.3 mm)
- CAPACITANCE OPTION: 33 = 33pF
- END TERMINATION OPTION: F = Nickel Barrier Option and Lead-Free (Tin outer surface, plated on Nickel underlayer plated on silver base metal)
- PACKING OPTIONS: R = 7in (178mm) Diameter Reel, Paper Carrier Tape 10,000 items per reel

Tape and Reel Specifications





Symbol	Description	Dimensions in Millimeters
		0201
A_0	Width of Cavity	0.36 -/+0.02
B_0	Length of Cavity	0.70 -/+0.02
W	Width of Tape	8.0 -/+0.1
F	Distance Between Drive Hole Centers and Cavity Centers	3.5 -/+0.05
E	Distance Between Drive Hole Centers and Tape Edge	1.75 -/+0.05
P_1	Distance Between Cavity Centers	2.0 -/+0.05
P_2	Axial Drive Distance Between Drive Hole Centers & Cavity Centers	2.0 -/+0.05
P_0	Axial Drive Distance Between Drive Hole Centers	4.0 -/+0.1
D_0	Drive Hole Diameter	1.55 -/+0.05
T_1	Top Tape Thickness	0.42 -/+0.02

NOTE: It is recommended that parts be kept in the sealed bag provided and that parts be used as soon as possible when removed from bags.

Revised: 09/14/17