

Data Sheet

Customer:

Product: Power Chip Inductor — MLPF-G Series

Size: 141208 / 160808 / 201208 / 201608 / 201610 / 252010 / 252012 / 322512

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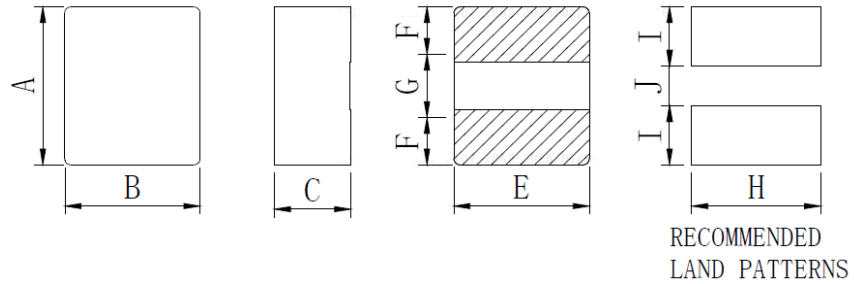
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Power Chip Inductor
Power Chip Inductor



■ Dimensions

Type	A (mm)	B (mm)	C (mm) max	E (mm) typ	F (mm) typ	G (mm) typ	H (mm) typ	I (mm) typ	J (mm) typ
MLPF141208-G	1.4±0.2	1.2±0.2	0.80	1.20	0.50	0.45	1.30	0.60	0.40
MLPF160808-G	1.6±0.2	0.8±0.2	0.80	0.80	0.55	0.50	0.90	0.65	0.40
MLPF201208-G	2.0±0.2	1.2±0.2	0.80	1.20	0.65	0.60	1.40	0.80	0.50
MLPF201608-G	2.0±0.2	1.6±0.2	0.80	1.60	0.65	0.60	1.80	0.80	0.50
MLPF201610-G	2.0±0.2	1.6±0.2	1.00	1.60	0.65	0.60	1.80	0.80	0.50
MLPF252008-G	2.5±0.2	2.0±0.2	0.80	2.00	0.90	0.70	2.10	1.00	0.60
MLPF252010-G	2.5±0.2	2.0±0.2	1.00	2.00	0.90	0.70	2.10	1.00	0.60
MLPF252012-G	2.5±0.2	2.0±0.2	1.20	2.00	0.90	0.70	2.10	1.00	0.60
MLPF322512-G	3.2±0.2	2.5±0.2	1.20	2.50	1.15	0.90	2.60	1.30	0.90

■ Part Numbering

MLPF	201610	M	T	1R0	-G
Product Type	Dimensions (AxBxC)	Inductance Tolerance	Packaging Code	Inductance	Special
	141208: 1.4x1.2x0.8 160808: 1.6x0.8x0.8 201208: 2.0x1.2x0.8 201608: 2.0x1.6x0.8 201610: 2.0x1.6x1.0 252008: 2.5x2.0x0.8 252010: 2.5x2.0x1.0 252012: 2.5x2.0x1.2 322512: 3.2x2.5x1.2	M: ±20%	T: Taping Reel	R24: 0.24μH 1R0: 1.0μH 100: 10μH	

■ Electrical Specifications

MLPF141208-G

Part No	Inductance (μH)	Tolerance	Test Condition	RDC (mΩ)		Isat (A)		Irms (A)	
				max.	typ.	max.	typ.	max.	typ.
MLPF141208MTR24-G	0.24	±20%	1MHz, 1V	27	22	5.7	6.0	3.7	4.1
MLPF141208MTR33-G	0.33	±20%	1MHz, 1V	28	23	5.0	5.3	3.5	4.0
MLPF141208MTR47-G	0.47	±20%	1MHz, 1V	35	29	4.2	4.6	3.3	3.8

Power Chip Inductor

■Electrical Specifications

MLPF160808-G

Part No	Inductance (μ H)	Tolerance	Test Condition	RDC (m Ω)		Isat (A)		Irms (A)	
				max.	typ.	max.	typ.	max.	typ.
MLPF160808MTR22-G	0.22	$\pm 20\%$	1MHz, 1V	40	28	5.0	5.5	3.0	3.4
MLPF160808MTR47-G	0.47	$\pm 20\%$	1MHz, 1V	100	80	3.7	4.1	2.3	2.6
MLPF160808MTR56-G	0.56	$\pm 20\%$	1MHz, 1V	110	85	3.5	4.0	1.9	2.2
MLPF160808MTR68-G	0.68	$\pm 20\%$	1MHz, 1V	130	110	3.0	3.3	1.9	2.1
MLPF160808MT1R0-G	1.0	$\pm 20\%$	1MHz, 1V	200	180	2.6	3.0	1.8	2.1

MLPF201208-G

Part No	Inductance (μ H)	Tolerance	Test Condition	RDC (m Ω)		Isat (A)		Irms (A)	
				max.	typ.	max.	typ.	max.	typ.
MLPF201208MTR24-G	0.24	$\pm 20\%$	1MHz, 1V	23	18	6.0	6.5	5.9	6.5
MLPF201208MTR33-G	0.33	$\pm 20\%$	1MHz, 1V	45	33	4.8	5.2	4.0	4.3
MLPF201208MTR47-G	0.47	$\pm 20\%$	1MHz, 1V	50	32	4.6	5.0	3.3	3.5
MLPF201208MTR68-G	0.68	$\pm 20\%$	1MHz, 1V	60	50	3.7	4.2	3.3	3.7
MLPF201208MT1R0-G	1.0	$\pm 20\%$	1MHz, 1V	70	55	3.5	4.0	2.4	3.3
MLPF201208MT1R5-G	1.5	$\pm 20\%$	1MHz, 1V	135	118	2.5	3.0	1.9	2.2
MLPF201208MT2R2-G	2.2	$\pm 20\%$	1MHz, 1V	185	160	2.3	2.6	1.8	2.2

MLPF201608-G

Part No	Inductance (μ H)	Tolerance	Test Condition	RDC (m Ω)		Isat (A)		Irms (A)	
				max.	typ.	max.	typ.	max.	typ.
MLPF201608MTR22-G	0.22	$\pm 20\%$	1MHz, 1V	18	14	5.7	6.2	6.0	6.6
MLPF201608MTR24-G	0.24	$\pm 20\%$	1MHz, 1V	19	14	5.6	6.1	5.9	6.5
MLPF201608MTR33-G	0.33	$\pm 20\%$	1MHz, 1V	24	18	5.4	5.9	4.8	5.5
MLPF201608MTR47-G	0.47	$\pm 20\%$	1MHz, 1V	27	24	5.1	5.6	4.4	4.6
MLPF201608MTR68-G	0.68	$\pm 20\%$	1MHz, 1V	43	38	4.3	4.8	3.5	3.8
MLPF201608MT1R0-G	1.0	$\pm 20\%$	1MHz, 1V	52	45	3.6	4.1	3.3	3.6
MLPF201608MT1R5-G	1.5	$\pm 20\%$	1MHz, 1V	85	72	2.9	3.3	2.8	3.1
MLPF201608MT2R2-G	2.2	$\pm 20\%$	1MHz, 1V	140	123	2.35	2.8	2.0	2.2
MLPF201608MT3R3-G	3.3	$\pm 20\%$	1MHz, 1V	220	200	1.85	1.3	1.5	1.8
MLPF201608MT4R7-G	4.7	$\pm 20\%$	1MHz, 1V	290	245	1.55	1.8	1.4	1.6
MLPF201608MT6R8-G	6.8	$\pm 20\%$	1MHz, 1V	468	390	1.1	1.55	1.0	1.3
MLPF201608MT100-G	10.0	$\pm 20\%$	1MHz, 1V	800	690	1.0	1.35	0.9	1.0

Electrical Specifications

MLPF201610-G

Part No	Inductance (μ H)	Tolerance	Test Condition	RDC (m Ω)		Isat (A)		Irms (A)	
				max.	typ.	max.	typ.	max.	typ.
MLPF201610MTR15-G	0.15	$\pm 20\%$	1MHz, 1V	13	7.8	8.2	8.9	7.1	7.6
MLPF201610MTR22-G	0.22	$\pm 20\%$	1MHz, 1V	18	11	7.5	8.2	6.3	6.9
MLPF201610MTR24-G	0.24	$\pm 20\%$	1MHz, 1V	19	12	7.4	8.0	6.2	6.8
MLPF201610MTR33-G	0.33	$\pm 20\%$	1MHz, 1V	22	17	6.5	7.0	5.3	5.7
MLPF201610MTR47-G	0.47	$\pm 20\%$	1MHz, 1V	25	22	5.5	6.3	5.0	5.5
MLPF201610MTR68-G	0.68	$\pm 20\%$	1MHz, 1V	32	25	4.7	5.2	4.3	4.6
MLPF201610MT1R0-G	1.0	$\pm 20\%$	1MHz, 1V	43	35	4.2	4.6	4.1	4.5
MLPF201610MT1R5-G	1.5	$\pm 20\%$	1MHz, 1V	100	80	2.9	3.2	2.3	2.6
MLPF201610MT2R2-G	2.2	$\pm 20\%$	1MHz, 1V	130	120	2.8	3.0	2.1	2.5
MLPF201610MT3R3-G	3.3	$\pm 20\%$	1MHz, 1V	170	140	2.0	2.3	1.5	1.7
MLPF201610MT4R7-G	4.7	$\pm 20\%$	1MHz, 1V	220	190	1.8	2.0	1.4	1.6
MLPF201610MT6R8-G	6.8	$\pm 20\%$	1MHz, 1V	418	363	1.3	1.7	1.1	1.45
MLPF201610MT100-G	10.0	$\pm 20\%$	1MHz, 1V	580	483	1.1	1.4	0.7	1.0

MLPF252008-G

Part No	Inductance (μ H)	Tolerance	Test Condition	RDC (m Ω)		Isat (A)		Irms (A)	
				max.	typ.	max.	typ.	max.	typ.
MLPF252008MTR22-G	0.22	$\pm 20\%$	1MHz, 1V	19	12	6.7	7.6	6.1	6.8
MLPF252008MTR24-G	0.24	$\pm 20\%$	1MHz, 1V	20	13	6.6	7.5	6.0	6.7
MLPF252008MTR33-G	0.33	$\pm 20\%$	1MHz, 1V	23	17	6.0	6.6	5.6	6.3
MLPF252008MTR47-G	0.47	$\pm 20\%$	1MHz, 1V	27	22	5.6	6.2	5.2	6.0
MLPF252008MTR68-G	0.68	$\pm 20\%$	1MHz, 1V	33	27	4.5	5.2	4.3	5.2
MLPF252008MT1R0-G	1.0	$\pm 20\%$	1MHz, 1V	40	34	4.0	4.5	4.0	4.3
MLPF252008MT1R5-G	1.5	$\pm 20\%$	1MHz, 1V	74	64	3.1	3.6	3.0	3.4
MLPF252008MT2R2-G	2.2	$\pm 20\%$	1MHz, 1V	77	69	2.6	3.0	2.6	3.0
MLPF252008MT3R3-G	3.3	$\pm 20\%$	1MHz, 1V	175	140	2.1	2.5	2.1	2.5
MLPF252008MT4R7-G	4.7	$\pm 20\%$	1MHz, 1V	215	180	1.5	1.9	1.5	2.0
MLPF252008MT6R8-G	6.8	$\pm 20\%$	1MHz, 1V	380	310	1.3	1.7	1.2	1.7
MLPF252008MT100-G	10.0	$\pm 20\%$	1MHz, 1V	570	500	1.2	1.5	0.95	1.1

MLPF252010-G

Part No	Inductance (μ H)	Tolerance	Test Condition	RDC (m Ω)		Isat (A)		Irms (A)	
				max.	typ.	max.	typ.	max.	typ.
MLPF252010MTR22-G	0.22	$\pm 20\%$	1MHz, 1V	17	11	8.0	8.7	6.5	6.9
MLPF252010MTR24-G	0.24	$\pm 20\%$	1MHz, 1V	17.5	12	7.8	8.5	6.4	6.7
MLPF252010MTR33-G	0.33	$\pm 20\%$	1MHz, 1V	19	13	7.2	7.6	6.2	6.5
MLPF252010MTR47-G	0.47	$\pm 20\%$	1MHz, 1V	22	15	6.5	6.9	5.6	6.1
MLPF252010MTR68-G	0.68	$\pm 20\%$	1MHz, 1V	27	23	5.5	5.9	5.0	5.6
MLPF252010MT1R0-G	1.0	$\pm 20\%$	1MHz, 1V	30	25	4.8	5.3	4.1	4.5
MLPF252010MT1R5-G	1.5	$\pm 20\%$	1MHz, 1V	55	45	3.9	4.3	3.0	3.4
MLPF252010MT2R2-G	2.2	$\pm 20\%$	1MHz, 1V	70	62	3.0	3.3	2.1	2.4
MLPF252010MT3R3-G	3.3	$\pm 20\%$	1MHz, 1V	100	86	2.5	2.8	2.1	2.5
MLPF252010MT4R7-G	4.7	$\pm 20\%$	1MHz, 1V	180	160	2.0	2.6	1.6	2.0
MLPF252010MT6R8-G	6.8	$\pm 20\%$	1MHz, 1V	320	270	1.9	2.4	1.4	1.6
MLPF252010MT100-G	10.0	$\pm 20\%$	1MHz, 1V	560	500	1.4	1.55	0.95	1.05

Electrical Specifications

MLPF252012-G

Part No	Inductance (μ H)	Tolerance	Test Condition	RDC (m Ω)		Isat (A)		Irms (A)	
				max.	typ.	max.	typ.	max.	typ.
MLPF252012MTR22-G	0.22	$\pm 20\%$	1MHz, 1V	14	9	9.0	9.6	7.6	8.2
MLPF252012MTR24-G	0.24	$\pm 20\%$	1MHz, 1V	15	10	8.8	9.3	7.5	8.0
MLPF252012MTR33-G	0.33	$\pm 20\%$	1MHz, 1V	17	11	7.8	8.3	6.4	6.8
MLPF252012MTR47-G	0.47	$\pm 20\%$	1MHz, 1V	19	13	7.0	7.5	6.0	6.5
MLPF252012MTR68-G	0.68	$\pm 20\%$	1MHz, 1V	23	17	6.0	6.5	5.5	6.3
MLPF252012MT1R0-G	1.0	$\pm 20\%$	1MHz, 1V	42	35	5.0	5.6	3.6	4.0
MLPF252012MT1R5-G	1.5	$\pm 20\%$	1MHz, 1V	50	44	4.1	4.5	3.2	3.7
MLPF252012MT2R2-G	2.2	$\pm 20\%$	1MHz, 1V	65	55	3.3	3.8	2.7	3.0
MLPF252012MT3R3-G	3.3	$\pm 20\%$	1MHz, 1V	97	80	2.7	3.0	1.8	2.3
MLPF252012MT4R7-G	4.7	$\pm 20\%$	1MHz, 1V	170	150	2.1	2.4	1.5	1.8
MLPF252012MT6R8-G	6.8	$\pm 20\%$	1MHz, 1V	270	245	1.7	2.0	1.4	1.6
MLPF252012MT100-G	10.0	$\pm 20\%$	1MHz, 1V	400	330	1.45	1.6	1.05	1.2

MLP322512-G

Part No	Inductance (μ H)	Tolerance	Test Condition	RDC (m Ω)		Isat (A)		Irms (A)	
				max.	typ.	max.	typ.	max.	typ.
MLPF322512MTR10-G	0.10	$\pm 20\%$	1MHz, 1V	8	6	16.5	18	11	12
MLPF322512MTR22-G	0.22	$\pm 20\%$	1MHz, 1V	10	6.6	11	11.5	8.7	9.2
MLPF322512MTR24-G	0.24	$\pm 20\%$	1MHz, 1V	12	7	10.5	11	8.5	9.0
MLPF322512MTR33-G	0.33	$\pm 20\%$	1MHz, 1V	14	9	9.5	10	8.1	8.4
MLPF322512MTR47-G	0.47	$\pm 20\%$	1MHz, 1V	19	14	8.2	8.6	7.2	7.5
MLPF322512MTR68-G	0.68	$\pm 20\%$	1MHz, 1V	23	18	7.7	8.1	6.8	7.3
MLPF322512MT1R0-G	1.0	$\pm 20\%$	1MHz, 1V	30	26	5.8	6.6	4.8	5.3
MLPF322512MT1R5-G	1.5	$\pm 20\%$	1MHz, 1V	44	37	4.7	5.1	4.3	4.7
MLPF322512MT2R2-G	2.2	$\pm 20\%$	1MHz, 1V	70	58	4.2	4.6	3.0	3.6
MLPF322512MT3R3-G	3.3	$\pm 20\%$	1MHz, 1V	95	75	3.2	3.7	2.5	2.9
MLPF322512MT4R7-G	4.7	$\pm 20\%$	1MHz, 1V	135	115	2.6	2.9	2.0	2.3
MLPF322512MT6R8-G	6.8	$\pm 20\%$	1MHz, 1V	210	177	2.4	2.8	1.9	2.1
MLPF322512MT100-G	10.0	$\pm 20\%$	1MHz, 1V	230	210	1.9	2.3	1.8	2.0

■ Isat: The DC current at which the inductance drops approximate 30% from its value without current, Load current time within 1 s.

■ Irms: The DC current is inductor surface temperature to rise by 40°C.

■ Rated Voltage: DC 20V Max.

■ Operating Temperature range : -40°C to +125°C (Including self-heating)

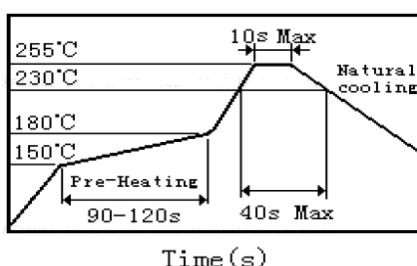
■ Test Equipment:

L: HIOKI IM3536 LCR METER or equivalent

RDC: HIOKI RM3545 RESISTANCE METER or equivalent

Isat & Irms: Wayne Kerr 3260B & 3265B or equivalent

Soldering Profile



Power Chip Inductor

■Environmental Characteristics

Item	Requirement	Test Method														
Insulation Resistance	≥ 100MΩ	100V DC between inductor coil and The middle of the top surface of the body for 60 seconds.														
Solderability	90% or more of electrode area shall be coated by new solder.	Dip pads in flux and dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at (245±5) °C for (5±1) seconds.														
Resistance to Soldering Heat	No visible mechanical damage. Inductance change: within ±10%	Reflow soldering peak temperature (260±5) °C time (15±5)s. Twice cycling, test after being kept at rom temperature for 1 hour.														
Adhesion of terminal electrode	Strong bond between the pad and the core, without dropping.	Inductors shall be soldered to board. And then apply a force perpendicular to the direction of the electrode surface using a metallurgical tool for (10 ± 1)seconds														
		<table><tr><td>Size</td><td>Force(N)</td></tr><tr><td>141208</td><td>5</td></tr><tr><td>160808</td><td>5</td></tr><tr><td>201208</td><td>8</td></tr><tr><td>201608/201610</td><td>10</td></tr><tr><td>252008/252010/252012</td><td>10</td></tr><tr><td>322512</td><td>25</td></tr></table>	Size	Force(N)	141208	5	160808	5	201208	8	201608/201610	10	252008/252010/252012	10	322512	25
		Size	Force(N)													
		141208	5													
		160808	5													
		201208	8													
		201608/201610	10													
		252008/252010/252012	10													
322512	25															
High temperature	No visible mechanical damage. Inductance change: within ±10%	Temperature is (+125±2)℃ and keep (1000±24) hours.														
Low temperature	No visible mechanical damage. Inductance change: within ±10%	Temperature is (-40±2)℃ and keep (1000±24) hours.														
Thermal shock	No visible mechanical damage. Inductance change: within ±10%	The test sample shall be placed at (-40±3)℃ for(30±3) min and convert to (125±2)℃ for (30±3) min, the conversion time is ≤3 minutes. The temperature cycle shall be repeated 1000 cycles. Placed at room temperature for 2 hours, within 48 hours of testing.														
Static Humidity	No visible mechanical damage. Inductance change: within ±10%	Inductors shall be subjected to (90~95)%RH. At (60±2)℃ for (1000±24)h. Placed at room temperature for 2 hours, within 48 hours of testing.														
Life	No visible mechanical damage. Inductance change: within ±10%	Inductors shall be store at (85±2)℃ for (1000±24) hours with Irms applied. Placed at room temperature for 2 hours, within 48 hours of testing. Note: If the surface temperature of the part over 125℃ when the current is loaded, the current need to reduce until the surface temperature of the part less than 125℃.														

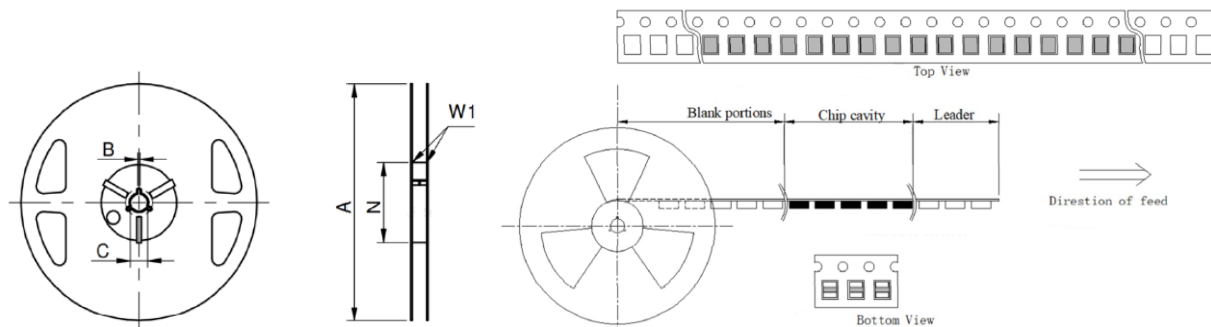
Note: When there are questions concerning, measurement shall be made after 24hrs of recovery under the standard condition.

■Storage Temperature: $-10 \sim 40^{\circ}\text{C}$ (product with taping), $-40 \sim 85^{\circ}\text{C}$ (body); Humidity: $30 \sim 70\%\text{RH}$.

■Shelf life: 1 years Max

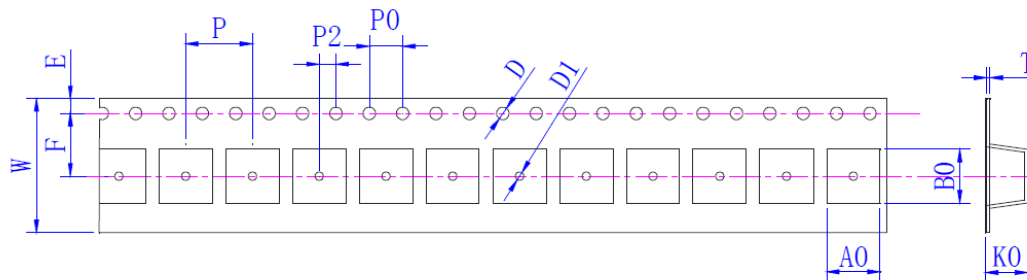
■Packaging

Reel Specifications



Type	A (mm)	B (mm)	C (mm)	N (mm)	W1 (mm)	Quantity (EA)
MLPF141208-G	178±2.0	1.5 min	13.5±1.0	60±0.1	8.4+1.5/-0	3,000
MLPF160808-G	178±2.0	1.5 min	13.5±1.0	60±0.1	8.4+1.5/-0	3,000
MLPF201208-G	178±2.0	1.5 min	13.5±1.0	60±0.1	8.4+1.5/-0	3,000
MLPF201610-G	178±2.0	1.5 min	13.5±1.0	60±0.1	8.4+1.5/-0	3,000
MLPF252008-G	178±2.0	1.5 min	13.5±1.0	60±0.1	8.4+1.5/-0	3,000
MLPF252010-G	178±2.0	1.5 min	13.5±1.0	60±0.1	8.4+1.5/-0	3,000
MLPF252012-G	178±2.0	1.5 min	13.5±1.0	60±0.1	8.4+1.5/-0	3,000
MLPF322512-G	178±2.0	1.5 min	13.5±1.0	60±0.1	8.4+1.5/-0	3,000

Tape Specifications



Type	W (mm)	A0 (mm)	B0 (mm)	D (mm)	D1 (mm)	E (mm)	F (mm)	K0 (mm)	P0 (mm)	P2 (mm)	P (mm)	T (mm)
MLPF141208-G	8.0±0.3	1.5±0.1	1.7±0.1	1.5±0.1	1.0 min	1.75±0.1	3.5±0.1	1.0±0.1	4.0±0.3	2.0±0.3	4.0±0.3	0.23±0.05
MLPF160808-G		1.05±0.1	1.85±0.1					1.0±0.1				0.25±0.05
MLPF201208-G		1.5±0.1	2.3±0.1					1.0±0.1				
MLPF201608-G		1.9±0.1	2.35±0.1					1.0±0.1				
MLPF201610-G		1.9±0.1	2.35±0.1					1.15±0.1				
MLPF252008-G		2.35±0.1	2.8±0.1					1.0±0.1				
MLPF252010-G		2.35±0.1	2.8±0.1					1.15±0.1				
MLPF252012-G		2.35±0.1	2.8±0.1					1.35±0.1				
MLPF322512-G		2.9±0.1	3.5±0.1					1.34±0.1				0.23±0.05

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A1	07-Apr-2025		-Add Shelf life.
Version A2	11-Sep-2025		-Add specifications for MLPF252008-G. -Modify Tape Specifications.