MLCC FOR SWITCHMODE POWER SUPPLY FILTERS
STACKED CHIPS FOR HIGH CAPACITY AND LOW ESR
AVAILABLE WITH J, L AND N STYLE LEADS
NPO OR X7R TEMPERATURE COEFFICIENT
RoHS COMPLIANT

PART NUMBERING

Part Number Example: CSM-050/224JN1825J2WF											
CSM	**-**	**050**	**/**	**224**	**J**	**N**	**1825**	**J**	**2**	**W**	**F**
Type		Rated DC Voltage		Capacitance Code (pF)*	Tolerance Code	TC CODE	CHIP SIZE	LEAD FORM	# OF CHIPS	PACKAGING ***	RoHs Compliant
* Capacitance Code: First two digits represent significant figures, third digit represents multiplier (number of zeros).											

*** PACKAGING CODE: W....WAFFLE PACK
T.....TAPE & REEL
B.....BULK

SPECIFICATIONS

RATED VOLTAGE RANGE	50~1000VDC
OPERATING TEMPERATURE	-55~+125°C
CAPACITANCE RANGE	(CODE N) NPO: .0056uF ~ .40uF
	(CODE X) X7R: .068uF ~ 34uF
TEMPERATURE COEFFICIENT	NPO: ≤± 30ppm/°C -55~ +125°C (EIA CLASS I)
	X7R: ≤ ±15% -55~ +125°C (EIA CLASS II)
CAPACITY TOLERANCE	±1% F, ±2% G, ±5% J, ±10% K & ±20% M (F & G NPO ONLY)
INSULATION RESISTANCE	10G Ω OR 500 meg ohm x F (WHICHEVER IS LESS)
DISSIPATION FACTOR	(NPO Q ≥1000 @ 1KHz) (X7R 2.5% MAX @ 1KHz)
DIELECTRIC WITHSTAND VOLTAGE	≤50VDC RATED : 2.5 X RATED FOR 1 SECOND
	100VDC ~ <500VDC RATED : 2 X RATED FOR 1 SECOND
	500VDC ~ <1000VDC RATED : 1.5 X RATED FOR 1 SECOND
	1000VDC RATED : 1.2 X RATED FOR 1 SECOND
AGING	NPO : 0%, X7R : 2.5% PER DECADE OF TIME

EIA CHIP SIZE	# OF CHIPS	MAX CAPACITANCE µF (NPO)					MAX CAPACITANCE µF (X7R)				
		50V	100V	200/250V	500V	1000V	50V	100V	200/250V	500V	100V
1812	1	0.029	0.018	0.012	0.0082	0.0056	3.3	1.5	0.82	0.15	0.068
	2	0.058	0.036	0.024	0.016	0.011	6.6	3	1.6	0.30	0.13
2220	3	0.062	0.054	0.045	0.039	0.012	4.7	3.3	1.5	0.27	0.082
	4	0.12	0.10	0.09	0.078	0.024	9.4	6.6	3	0.54	0.16
1825	1	0.065	0.056	0.047	0.039	0.012	4.7	3.3	1.5	0.27	0.082
	2	0.13	0.11	0.094	0.078	0.024	9.4	6.6	3	0.54	0.16
	3	0.19	0.16	0.14	0.11	0.036	14	9.9	4.5	0.81	0.24
	4	0.26	0.22	0.18	0.15	0.048	18	13	6	1	0.32
	5	0.32	0.28	0.23	0.19	0.060	23	16	7.5	1.3	0.41
2225	1	0.081	0.065	0.056	0.047	0.015	6.8	4.7	2.2	0.39	0.10
	2	0.16	0.13	0.11	0.094	0.030	13	9.4	4.4	0.78	0.20
	3	0.24	0.19	0.16	0.14	0.045	20	14	6.6	1.1	0.30
	4	0.32	0.26	0.22	0.18	0.060	27	18	8.8	1.5	0.40
	5	0.40	0.32	0.28	0.23	0.075	34	23	11	1.9	0.50

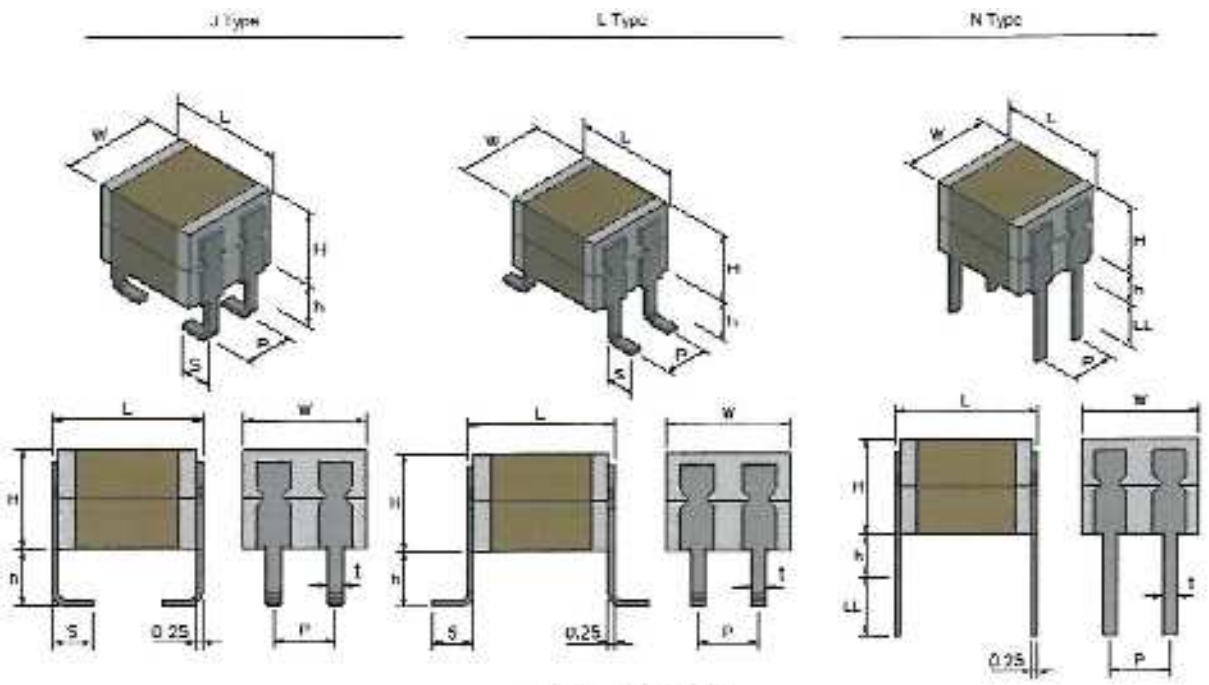
OTHER NON-STANDARD RATING AND STACK COMBINATIONS AVAILABLE, PLEASE CHECK WITH A SALES REPRESENTATIVE

OUTLINE DRAWING

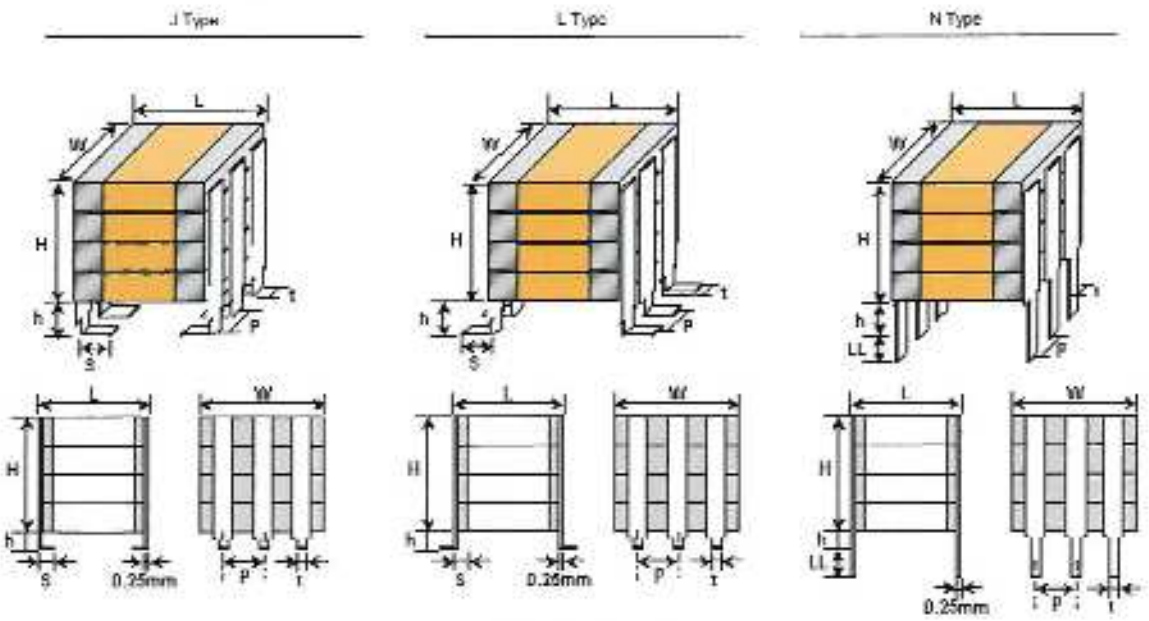
EIA SIZE	1812		1825				
# OF CHIPS	1	2	1	2	3	4	5
L	5.35 ±0.50 (.21 ±.020)	5.35 ±0.50 (.21 ±.020)	5.35 ±0.50 (.21 ±.020)	5.35 ±0.50 (.21 ±.020)	5.35 ±0.50 (.21 ±.020)	5.35 ±0.50 (.21 ±.020)	5.35 ±0.50 (.21 ±.020)
W (max)	3.60 (.142)	3.60 (.142)	6.85 (.270)	6.85 (.270)	6.85 (.270)	6.85 (.270)	6.85 (.270)
H (max)	2.54 (.100)	5.08 (.200)	2.54 (.100)	5.08 (.200)	7.62 (.300)	10.16 (.400)	12.70 (.500)
S	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)
h Typical *	1.78 (.070)	1.78 (.070)	1.78 (.070)	1.78 (.070	1.78 (.070	1.78 (.070	1.78 (.070
P	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)
LL (min)***	2.54 (.100)	2.54 (.100)	2.54 (.100)	2.54 (.100)	2.54 (.100)	2.54 (.100)	2.54 (.100)
T	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)
# LEADS PER SIDE	2	2	3	3	3	3	3

EIA SIZE	2220		2225				
# OF CHIPS	1	2	1	2	3	4	5
L	6.50 MAX (.256 MAX)	6.50 MAX (.256 MAX)	6.35 ±0.50 (.250 ±.020)	6.35 ±0.50 (.250 ±.020)	6.35 ±0.50 (.250 ±.020)	6.35 ±0.50 (.250 ±.020)	6.35 ±0.50 (.250 ±.020)
W (max)	5.50 (.217)	5.50 (.217)	6.85 (.270)	6.85 (.270)	6.85 (.270)	6.85 (.270)	6.85 (.270)
H (max)	2.10 (.083)	4.20 (.165)	2.54 (.100)	5.08 (.200)	7.62 (.300)	10.16 (.400)	12.70 (.500)
S	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)	1.65 ±0.50 (.065 ±.020)
h Typical *	1.30 MAX (.051MAX)	1.30 MAX (.051 MAX)	1.78 (.070)	1.78 (.070	1.78 (.070	1.78 (.070	1.78 (.070
P	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)	2.54±0.25 (.100±.010)
LL (min)***	2.54 (.100)	2.54 (.100)	2.54 (.100)	2.54 (.100)	2.54 (.100)	2.54 (.100)	2.54 (.100)
T	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)	0.50±0.05 (.020±.002)
# LEADS PER SIDE	2	2	3	3	3	3	3

** "h" CAN VARY DEPENDENT UPON LEAD STYLE
*** "LL" Applies ONLY TO LEAD STYLE N
* LOWER PROFILE VERSIONS AVAILABLE



1812 and 2220



1825 and 2225