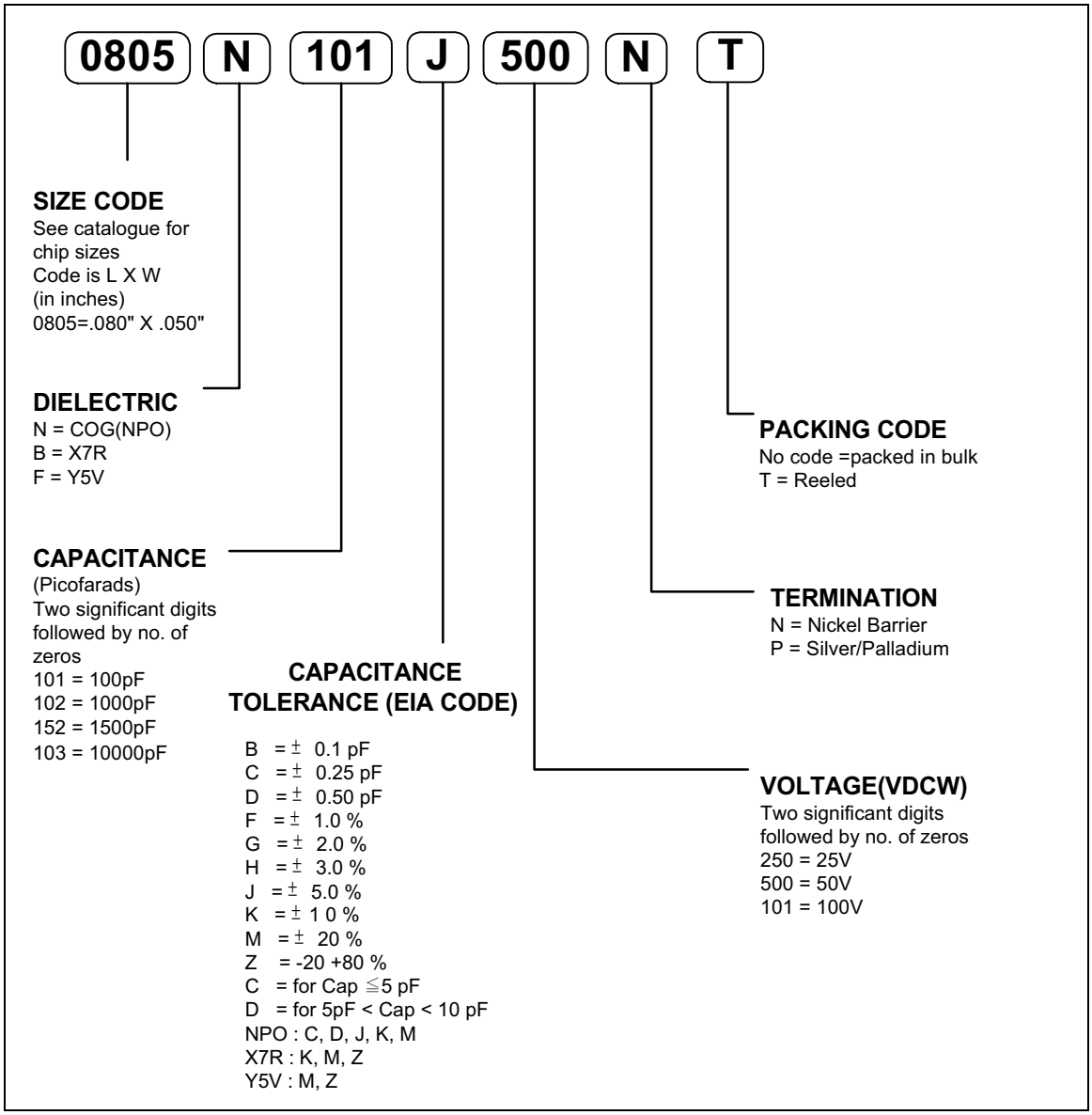
MLCCs (MULTI-LAYER CHIP CAPACITORS)

TABLE OF CONTENTS

CLASSIFICATION OF DIELECTRIC

NPO (COG)	■ Ultra stable class I dielectric ■ Negligible dependence of electrical properties on temperature, voltage, frequency and time ■ Often used in circuits requiring stable performance
X7R	■ Stable class II dielectric ■ Higher capacitance than class I ■ Often used in blocking, by-passing and frequency discriminating elements
Y5V	■ General purpose class dielectric ■ Very high capacitance units ■ Greater variation of properties with temperature and test conditions

HOW TO ORDER



* For values below 10 pF, use "R" in place of decimal point, e.g., 4.7pF=4R7

CAPACITANCE, THICKNESS AND PACKAGING

Size		NPO	X7R	Y5V	TAPING*	THICKNESS (mm)
0603	Capacitance	1R0-102	181-104	103-105	Paper, 4Kp/Reel	A=0.65 +0.05/-0.15 B=0.85 +0.05/-0.15 C=1.00 +0.05/-0.15 D=1.20 +0.15/-0.15 S=0.80 +0.10/-0.10
	Thickness	S	S	S		
0805	Capacitance	1R0-331	102-683	103-154	A:Paper,4Kp/Reel B:Paper,4Kp/Reel C: Plastic 3Kp/Reel D: Plastic 3Kp/Reel	
	Thickness	A	B	A		
	Capacitance	391-152	823-104	224-105		
	Thickness	B	C	B		
	Capacitance		224-334			
	Thickness		D			
	Capacitance			105-475		
	Thickness			D		
1206	Capacitance	1R5-272	102-104	103-684	A:Paper,4Kp/Reel B:Paper,4Kp/Reel C: Plastic 3Kp/Reel D: Plastic 3Kp/Reel	
	Thickness	B	B	B		
	Capacitance	332	154~224	105		
	Thickness	C	C	C		
	Capacitance		105	335-106		
	Thickness		D	D		
1210	Capacitance	220-562	103-184	104-155	Plastic, 3Kp/Reel	
	Thickness	C	C	C		
	Capacitance		224	106		
	Thickness		D	D		
1812	Capacitance	102-103	103-474	104-225	Plastic, 1Kp/Reel	
	Thickness	D	D	D		

* Reel Size : 7 inches standard, 13 inches available

VOLTAGE

Size/Voltage		NPO	X7R	Y5V
0603	10V	1R0 - 102	181 -104	103 -105
	16V	1R0 - 102	181 -104	103 -474
	25V	1R0 - 102	181 - 823	103 - 104
	50V	1R0 - 102	181 - 393	103 - 473
0805	10V	1R0 - 152	102 - 334	103 - 475
	16V	1R0 -152	102 - 334	103 -335
	25V	1R0 - 152	102 - 104	103 - 474
	50V	1R0 - 152	102 - 104	103 - 224
	100V	1R0 - 152	102 - 472	103 - 104
	200V	1R0 - 152	102 - 222	
	500V	1R0 - 152		
	1000V	1R0 - 101		
	2000V	1R0 - 470		
1206	10V	1R5 - 332	102 - 105	103 - 106
	16V	1R5 - 332	102 - 105	103 - 475
	25V	1R5 - 332	102 - 224	103 - 225
	50V	1R5 - 332	102 - 224	103 - 474
	100V	1R5 - 332	102 - 154	103 - 224
	200V	1R5 - 332	102 - 103	103 - 104
	500V	1R5 - 332	102 - 472	
	1000V	1R5 - 102		
	2000V	1R5 - 221		
1210	16V	220 - 562	103 - 224	104 - 106
	25V	220 - 562	103 - 224	104 - 105
	50V	220 - 562	103 - 224	104 - 474
	100V	220 - 562	103.- 154	
	200V	220 - 562	103 - 473	
	500V	220 - 472	103 - 223	
	1000V	220 - 152		
	2000V	220 - 221		
1812	16V	102 - 103	103 - 474	104 - 225
	25V	102 - 103	103 - 474	104 - 105
	50V	102 - 103	103 - 474	104 - 155
	100V	680 - 103	103 - 274	104 - 474
	200V	680 - 103	103 - 154	104 - 474
	500V	680 - 103	103 - 223	
	1000V	680 - 332		
	2000V	680 - 331		

CAPACITANCE & TOLERANCE	NPO	X7R	Y5V
1R0 = 1.0 pF 100 = 10 pF 101 = 100 pF 102 = 1000 pF= 1nF 103 = 10 nF 104 = 100 nF 105 = 1000 nF =1μF 106 =10000 nF =10μF	1R0 - 103	181 - 105	103- 106
C: ±0.25pF (Cap<5pF) D: ±0.5pF (5pF<Cap<10pF) J: ±5% K: ±10% M: ±20% Z: -20% ~ +80%	C, D, J, K	K, M	M, Z

DIMENSIONS

inch (mm)

Symbol	0603	0805	1206	1210	1812
Length	.063±.004 (1.60±0.10)	.080±.006 (2.00±0.15)	.125±.006 (3.20±0.15)	.125±.012 (3.20±0.30)	.180±.015 (4.50±0.40)
Width	.030±.004 (0.80±0.10)	.050±.006 (1.25±0.15)	.063±.006 (1.60±0.15)	.100±.008 (2.50±0.20)	.125±.012 (3.20±0.30)
MB	.015±.006 (0.40±0.15)	.020±.008 (0.50±0.20)	.025±.008 (0.60±0.20)	.030±.010 (0.75±0.25)	.030±.010 (0.75±0.25)