

Safety Recognized Ceramic Capacitor



MCH/MCY Series

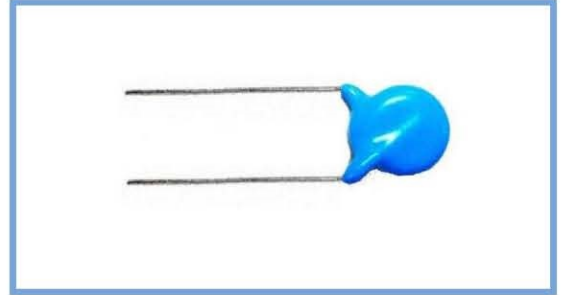
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FEATURES

- Antenna coupling and line bypass capacitor
- Across-the-line capacitor
- Recognized by UL (UL1414-1998), VDE (DIN EN60384-14)
- Temperature characteristic: SL, Y5P, Y5U, Y5V
- Rated capacitance : 2pF~10nF
- Capacitance tolerance : $\pm 0.25\text{pF}$, $\pm 0.5\text{pF}$, $\pm 5\%$, $\pm 10\%$, $\pm 20\%$
- Passive flammability category: C
- Operating temperature range: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- Automatic insertion can be, and save costs

UL E197475

VDE: MCH 40040309, MCY 40040720



PART NUMBER SYSTEM

MCH 11 E 472 M L Z B 3

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Code	MCH	MCY
	X1/Y1	X1/Y2

Nominal Body Diameter

Temperature Characteristic

Code	S	B	E	F
	SL	Y5P	Y5U	Y5V

Capacitance (unit: pF)

First 2 digits are significant 3rd digit is multiplier.
"R" indicates decimal for values below 10pF

Capacitance Tolerance

Code	C	D	J	K	M
Value	$\pm 0.25\text{pF}$	$\pm 0.5\text{pF}$	$\pm 5\%$	$\pm 10\%$	$\pm 20\%$

Rated Voltage : see "rated voltage table"

Packing Style

Code	B	T
Type	Bulk	Taping

Lead Space

Code	0	5	6	7
Pitch(mm)	10.0 ± 1.5	5.0 ± 1.5	6.35 ± 1.5	7.5 ± 1.5
	9	F		
	9.5 ± 1.5	15.0 ± 1.5		

Lead Style

Code	L	S	Y	K
Type	straight long	straight short	Y kink	inside kink

RATED VOLTAGE

Code	MCH		MCY	
	X1	Y1	X1	Y2
5	760V_{ac}	500V_{ac}	--	--
4	440V_{ac}	400V_{ac}	440V_{ac}	300V_{ac}
3	400V_{ac}	300V_{ac}	400V_{ac}	300V_{ac}
Blank	400V_{ac}	250V_{ac}	400V_{ac}	250V_{ac}



SPECIFICATIONS

Item	Standard			Note
Temperature characteristics	Dielectric	Capacitance Deviation		Test temperature range : $-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
	SL	$+350 \sim +1000\text{ppm}/^{\circ}\text{C}$		
	Y5P	less then $\pm 10\%$		
	Y5U	less then $+22\%/-55\%$		
Dissipation Factor (%)	Y5V	less then $+22\%/-82\%$		Test temperature : 20°C Test condition : SL - $1.0 \pm 0.1\text{MHz}$, 1.0V_{rms} Y5P, Y5U, Y5V - $1.0 \pm 0.1\text{kHz}$, 1.0V_{rms}
	Dielectric	Value		
	Y5P, Y5U	D.F. $\leq 2.5\%$		
	Y5V	D.F. $\leq 5.0\%$		
Insulation Resistance (I.R.)	SL	$Q \geq 400+20\text{C}$ (C < 30pF) $Q \geq 1,000$ (C $\geq 30\text{pF}$)		Applied voltage : $500 \pm 50\text{V}_{\text{dc}}$, Duration: $60 \pm 5.0\text{sec}$.
	10,000M Ω , min.			
Dielectric Strength	Test voltage	MCH	MCY	
	Between leads	AC $4,000\text{V}_{\text{rms}}$	AC $2,600\text{V}_{\text{rms}}$	
	Body insulation			
Climatic Category	40/125/21			

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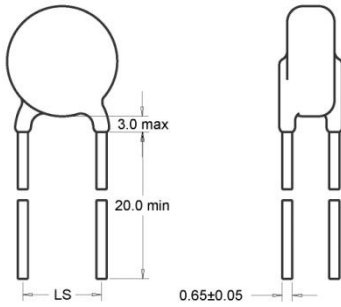


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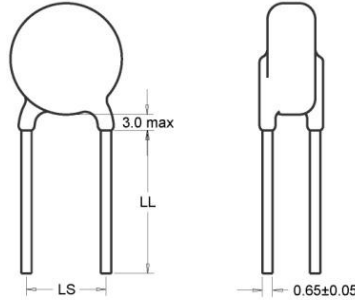
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LEAD STYLE

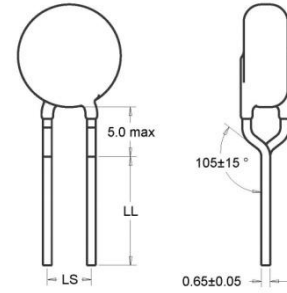
Straight long lead
MCx xx x xxx xLxxx



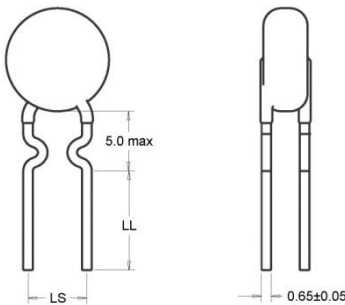
Straight short lead
MCx xx x xxx xSxxx



Y kink lead
MCx xx x xxx xYxxx



Inside kink lead
MCx xx x xxx xKxxx



Note -
Dimension : mm
For bulk packing -
LL is 3.5±1.0mm,
4.0±1.0mm, 5.0±1.0mm, 6.0±1.0mm, 7.0±1.0mm,
8.0±1.0mm are available for customer requirement

STANDARD LIST AND DIMENSIONS

Type	Temperature Characteristic	Part no.	Capacitance (pF)	Tolerance	Diameter	Thickness
MCH (Y1)	SL	MCH08S2R0□□□□	2	C:±0.25pF D:±0.5pF	8max	8max
		MCH08S3R0□□□□	3		8max	
		MCH08S5R0□□□□	5		8max	
		MCH08S6R0□□□□	6		8max	
		MCH08S8R0□□□□	8		8max	
		MCH08S100□□□□	10	J:±5% K:±10%	8max	
		MCH09S150□□□□	15		9max	
		MCH09S220□□□□	22		9max	
		MCH09S330□□□□	33		9max	
		MCH11S470□□□□	47		11max	
		MCH11S680□□□□	68		11max	
	Y5P	MCH08B101□□□□	100	K:±10% M:±20%	8max	
		MCH09B151□□□□	150		9max	
		MCH10B221□□□□	220		10max	
		MCH10B331□□□□	330		10max	
		MCH11B391□□□□	390		11max	
		MCH11B471□□□□	470		11max	
		MCH12B561□□□□	560		12max	
		MCH12B681□□□□	680		12max	
		MCH13B821□□□□	820		13max	
		MCH13B102□□□□	1000		13max	
		Y5U	MCH08E471□□□□		470	
	MCH08E561□□□□		560	8max		
	MCH09E681□□□□		680	9max		
	MCH10E821□□□□		820	10max		
	MCH10E102□□□□		1000	10max		
	MCH11E152□□□□		1500	11max		
	MCH12E202□□□□		2000	12max		
	MCH12E222□□□□		2200	12max		
	MCH13E272□□□□		2700	13max		
	MCH13E302□□□□		3000	13max		
	MCH14E332□□□□		3300	14max		
	MCH15E392□□□□	3900	15max			
MCH17E472□□□□	4700	17max				

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STANDARD LIST AND DIMENSIONS (Continue)

Type	Temperature Characteristic	Part no.	Capacitance (pF)	Tolerance	Diameter	Thickness		
MCH (Y1)	Y5U	MCH19E562□□□□	5600	M:±20%	19max	8max		
		MCH22E682□□□□	6800		22max			
		MCH24E822□□□□	8200		24max			
		MCH25E103□□□□	10000		25max			
	Y5V	MCH09F102□□□□	1000	M:±20%	9max			
		MCH11F152□□□□	1500		11max			
		MCH12F222□□□□	2200		12max			
		MCH13F332□□□□	3300		13max			
		MCH13F392□□□□	3900		13max			
		MCH14F472□□□□	4700		14max			
		MCH16F562□□□□	5600		16max			
		MCH19F682□□□□	6800		19max			
		MCH21F822□□□□	8200		21max			
		MCH24F103□□□□	10000		24max			
MCY (Y2)	Y5P	MCY07B101□□□□	100	K:±10% M:±20%	7max	7max		
		MCY07B151□□□□	150		7max			
		MCY08B221□□□□	220		8max			
		MCY09B331□□□□	330		9max			
		MCY09B391□□□□	390		9max			
		MCY09B471□□□□	470		9max			
		MCY10B561□□□□	560		10max			
		MCY11B681□□□□	680		11max			
		MCY12B821□□□□	820		12max			
		MCY14B102□□□□	1000		14max			
		Y5U	MCY06E471□□□□		470		M:±20%	6.5max
			MCY07E561□□□□		560			7.5max
			MCY07E561□□□□		680			7.5max
			MCY08E821□□□□		820			8max
	MCY08E102□□□□		1000	8max				
	MCY09E152□□□□		1500	9max				
	MCY09E182□□□□		1800	9max				
	MCY11E202□□□□		2000	11max				
	MCY12E222□□□□		2200	12max				
	MCY13E272□□□□		2700	13max				
	MCY15E302□□□□		3000	15max				
	MCY15E332□□□□		3300	15max				
	MCY16E392□□□□		3900	16max				
	MCY17E472□□□□		4700	17max				
	MCY18E562□□□□		5600	18max				
	MCY19E682□□□□		6800	19max				
	MCY22E822□□□□		8200	22max				
	MCY24E103□□□□		10000	24max				
	Y5V	MCY09F102□□□□	1000	M:±20%	9max			
		MCY11F152□□□□	1500		11max			
		MCY12F222□□□□	2200		12max			
		MCY13F332□□□□	3300		13max			
		MCY15F392□□□□	3900		15max			
		MCY16F472□□□□	4700		16max			
		MCY17F562□□□□	5600		17max			
		MCY18F682□□□□	6800		18max			
		MCY21F822□□□□	8200		21max			
		MCY23F103□□□□	10000		23max			

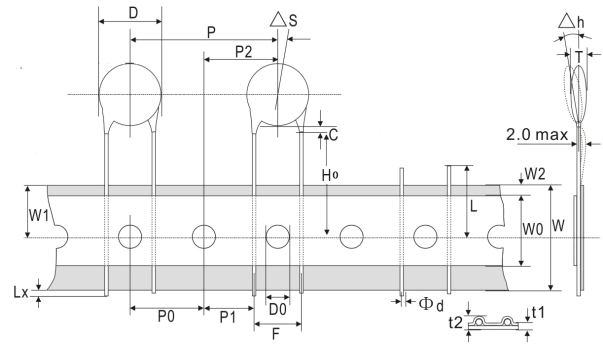
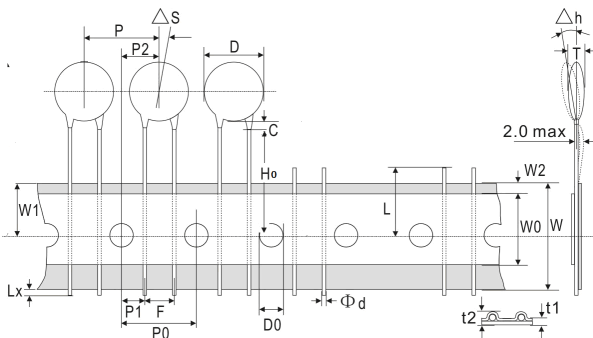
TAPING SPECIFICATIONS

unit : mm

Description	Code	TYPE 1 (P=12.7)			TYPE 2 (P=25.4)	
		F=5.0	F=6.35	F=7.5	F=7.5	F=10.0
Body diameter	D	-	-	< 9.0mm	≥ 9.0mm	-
Body thickness	T	-	-	-	-	-
Lead diameter	∅d	0.65±1.0			0.65±1.0	
Pitch of sprocket hole	P0	12.7±0.3			12.7±0.3	
Pitch of component	P	12.7±1.0			25.4±1.0	
Lead length from hole center lead	P1	3.85±0.7	3.175±0.7	2.6±0.7	8.95±1.0	7.7±1.0
Lead length from hole center lead to component center	P2	6.35±1.3			12.7±1.5	
Lead spacing	F	5.0±1.0	6.35±1.0	7.5±1.0	7.5±1.0	10.0±1.0
Deviation along tape, left or right	ΔS	0.0±1.0			0.0±1.0	
Deviation across tape	Δh	0.0±2.0			0.0±2.0	
Carrier tape width	W	18.0±1.0			18.0±1.0	
Hold down tape width	W0	5.0, min.			9.0, min.	
Position of sprocket hole	W1	9.0±0.5			9.0±0.5	
Hold down tape position	W2	3.0, max.			3.0, max.	
Lead-wire clinch height	H0	19.0±0.75			19.0±0.75	
Length of snapped lead	L	11.0, max.			11.0, max.	
Diameter of sprocket hole	D0	4.0±0.2			4.0±0.2	
Total tape thickness	t1	0.7±0.2			0.7±0.2	
Total thickness, tape and lead wire	t2	1.5, max.			1.7, max.	
Length of snapped lead	Lx	1.0, max.			1.0, max.	
Coating on lead	C	3.0, max.			3.0, max.	
Height of kink	A	5.0, max			5.0, max	

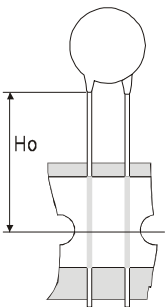
TYPE 1: F=5.0,6.35,7.5mm, P=12.7mm

TYPE 2 : F=7.5,10.0mm, P=25.4mm

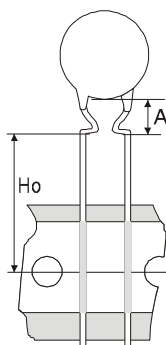


Lead Variation :

Straight lead



Inside kink



Vertical kink

