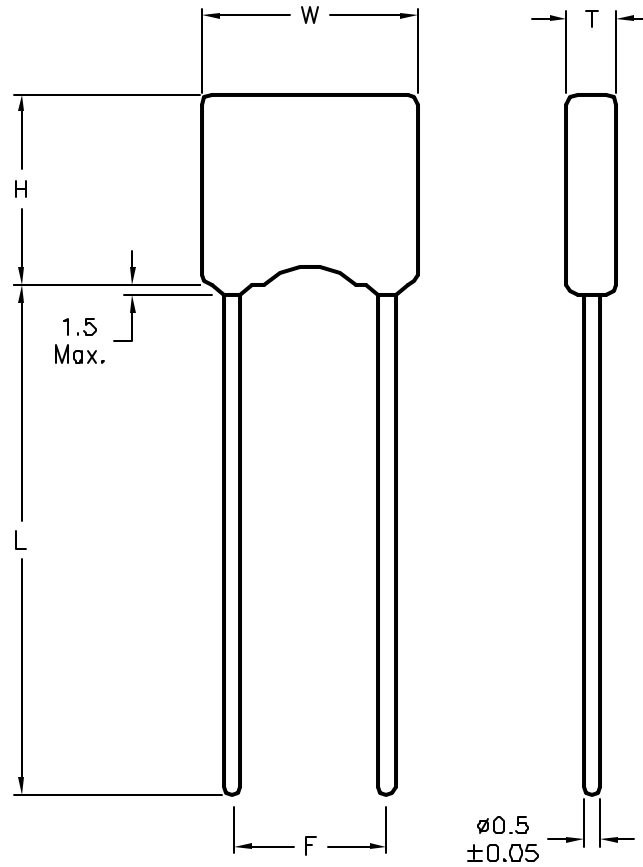


DCP #	REV	DESCRIPTION	DRAWN	DATE	CHECKD	DATE	APPRVD	DATE
1893	A	RELEASED	EO	8/25/08	JN	04/16/08	JN	04/16/08


 RoHS  
Compliant


Size	Dimensions				
	W	T	H	F	L
MCR15	3.0 - 3.8	1.8 - 2.8	2.6 - 3.8	2.5±0.25	5.0±0.5
MCR20	5.0	3.0/3.8	5.0	2.5±0.25	5.0±0.5
MCR30	7.6	3.8	7.6	5.0±0.5	5.0±0.5

SPC-F004.DWG

TOLERANCES: UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE FOR REFERENCE PURPOSES ONLY.	DRAWN BY:	DATE:	DRAWING TITLE:			
	EKLAS ODISH	8/25/08	Multilayer Ceramic Capacitors, Radial Leaded Type			
	CHECKED BY:	DATE:	SIZE	DWG. NO.	ELECTRONIC FILE	REV
	Jason Nash	04/16/08	A	TA-799	TA-799.DWG	A
APPROVED BY:	DATE:	SCALE: NTS		U.O.M.: Millimeters	SHEET: 1 OF 3	
Jason Nash	04/16/08					

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Multicomp P/N	Working Voltage (WVDC)	Capacitance	Dielectric	Tolerance (%)
MCR15N101J1HL2L-RH	50	100 pF	NPO	5
MCR15N121J1HL2L-RH	50	120 pF	NPO	5
MCR15N221J1HL2L-RH	50	220 pF	NPO	5
MCR20N102J1HL5L-RH	50	1000 pF	NPO	5
MCR20N122J1HL5L-RH	50	1200 pF	NPO	5
MCR15W472K1HL2L-RH	50	4700 pF	X7R	10
MCR15W103K1HL2L-RH	50	0.01 mF	X7R	10
MCR15Z103M1HL2L-RH	50	0.01 mF	Z5U	20
MCR15Z223M1HL2L-RH	50	0.022 mF	Z5U	20
MCR20W473K1HL5L-RH	50	0.047 mF	X7R	10
MCR15Z473M1HL2L-RH	50	0.047 mF	Z5U	20
MCR20W104K1HL5L-RH	50	0.1 mF	X7R	10
MCR15Z104M1HL2L-RH	50	0.1 mF	Z5U	20
MCR30W224K1HL5L-RH	50	0.22 mF	X7R	10
MCR30W334K1HL5L-RH	50	0.33 mF	X7R	10
MCR30W474K1HL5L-RH	50	0.47 mF	X7R	10
MCR30W105K1HL5L-RH	50	1 mF	X7R	10
MCR30Z105M1HL5L-RH	50	1 mF	Z5U	20
MCR15N101J2AL2L-RH	100	100 pF	NPO	5
MCR15N120J2AL2L-RH	100	12 pF	NPO	5
MCR15N220J2AL2L-RH	100	22 pF	NPO	5
MCR15N270J2AL2L-RH	100	27 pF	NPO	5
MCR15N330J2AL2L-RH	100	33 pF	NPO	5
MCR15N470J2AL2L-RH	100	47 pF	NPO	5
MCR20N102J2AL5L-RH	100	1000 pF	NPO	5
MCR15W102K2AL2L-RH	100	1000 pF	X7R	10
MCR15W103K2AL2L-RH	100	0.01 mF	X7R	10
MCR30N123J2AL5L-RH	100	0.012 mF	NPO	5
MCR15W333K2AL2L-RH	100	0.033 mF	X7R	10
MCR15W473K2AL2L-RH	100	0.047 mF	X7R	10
MCR30W104K2AL2L-RH	100	0.1 mF	X7R	10

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SIZE DWG. NO.

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TA-799

ELECTRONIC FILE

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REV

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DWG. NO. SPC-F004 \* Effective: 7/8/02 \* DCP No: 1398

SCALE: NTS

U.O.M.: Millimeters

SHEET: 2 OF 3

Item	NPO COG	X7R	Z5U	Y5V
Dielectric Type	Stable Class I Dielectric	Stable Class II Dielectric		
Electrical Properties	With negligible dependence of electrical properties on temperature, voltage, frequency and time.	With predictable change of properties with temperature, voltage, frequency and time, this dielectric is ferroelectric and offers higher capacitance ranges than class I	With higher dielectric constant and greater variation of properties with temperature and test conditions, very high capacitance per unit volume and suited for bypass and coupling application as well as filtering, transient suppression blocking, and charge storage application.	
Application	Used in circuit requiring stable performance, such as temperature compensation circuits and smite circuits.	Used as blocking, coupling, By-passing frequency and discriminating elements.	Suited for By-passing and coupling application such as store power and memory circuit.	
Operating Temperature	-55°C ~ +125°C	-55°C ~ +125°C	+10°C ~ +85°C	-30°C ~ +85°C
Temperature Coefficient	0±30 ppm/°C	±15%	+22% ~ -56%	+22% ~ -82%

#### Inspection Norm

Item	NPO COG	X7R	Z5U	Y5V
Capacitance (C)	Test Frequency: =1000pF=1MHz >1000pF=1KHz	Test Frequency: 1KHz	Test Frequency: 1KHz	Test Frequency: 1KHz
	Test Voltage: 1±0.2 Vrms	Test Voltage: 1±0.2 Vrms	Test Voltage: 0.5±0.1 Vrms	Test Voltage: 1±0.2 Vrms
	In the tolerance: C=±0.25pF D=±0.50pF J=±5pF	In the tolerance: J=±5pF K=±10pF M=±20pF	In the tolerance: M=±20% Z=+80% / -20%	In the tolerance: M=±20% Z=+80% / -20%
Dissipation Factor (DF)	Test Frequency: =1000pF=1MHz >1000pF=1KHz	Test Frequency: 1KHz	Test Frequency: 1KHz	Test Frequency: 1KHz
	Test Voltage: 1±0.2 Vrms	Test Voltage: 1±0.2 Vrms	Test Voltage: 0.5±0.1 Vrms	Test Voltage: 1±0.2 Vrms
	<0.1%	100V, 50V is <2.5% 25V, 16V is <3.5%	<4.0%	100V, 50V is <5.0% 25V, 16V is <7.0%
Insulation Resistance $I_R$	Test Voltage: Rated Voltage			
	Whichever is less: =100GΩ or =1000MΩ x μF		Whichever is less: =10GΩ or =100MΩ x μF	
Voltage (TV)	2.5 x Rated Voltage			

#### Reliability

Item	Test Methods	Test Specifications																				
Solderability	The lead wire of a capacitor shall be dipped into a rosin and then into molten solder of 235±5°C for 5 seconds, in both cases the depth of dipping is up to about 2.5 to 3.0 mm from the root of lead wires.	Lead wire shall be soldered with uniformly coated on the Axial or Radial direction over 75% of the circumferential direction																				
Resistance to Soldering heat	The lead wire shall be immersed into melted solder of 265±5°C, up to about 2.5 to 3.0 mm from the main body and the specified items shall be measured after leaving for 24±2 hours.	1- Appearance: No marked defect 2- Capacitance change (?C/C): <table border="1"> <thead> <tr> <th></th> <th>NPO COG</th> <th>X7R</th> <th>Z5U</th> <th>Y5V</th> </tr> </thead> <tbody> <tr> <td>(?C/C)</td> <td>=±0.5%, or ±0.5pF</td> <td>=±7.5%</td> <td>=±20%</td> <td>=±20%</td> </tr> </tbody> </table>		NPO COG	X7R	Z5U	Y5V	(?C/C)	=±0.5%, or ±0.5pF	=±7.5%	=±20%	=±20%										
	NPO COG	X7R	Z5U	Y5V																		
(?C/C)	=±0.5%, or ±0.5pF	=±7.5%	=±20%	=±20%																		
Life Test	Condition	NPO X7R Z5U Y5V																				
	Temperature	+125°C +85°C																				
	Time	1000 Hours																				
	Voltage	1.5 x (Rated Voltage Applied)																				
	Recovery Time	24±2 Hours																				
		1- Appearance: No marked defect 2- Change Value: <table border="1"> <thead> <tr> <th></th> <th>NPO COG</th> <th>X7R</th> <th>Z5U</th> <th>Y5V</th> </tr> </thead> <tbody> <tr> <td>(?C/C)</td> <td>=±2%, or ±2pF</td> <td>=±10%</td> <td>=±20%</td> <td>=±30%</td> </tr> <tr> <td>DF</td> <td colspan="4">=±1.5 x Initial requirement</td> </tr> <tr> <td>IR</td> <td colspan="4">=±0.25 x Initial requirement</td> </tr> </tbody> </table>		NPO COG	X7R	Z5U	Y5V	(?C/C)	=±2%, or ±2pF	=±10%	=±20%	=±30%	DF	=±1.5 x Initial requirement				IR	=±0.25 x Initial requirement			
	NPO COG	X7R	Z5U	Y5V																		
(?C/C)	=±2%, or ±2pF	=±10%	=±20%	=±30%																		
DF	=±1.5 x Initial requirement																					
IR	=±0.25 x Initial requirement																					
Strength of Lead	Fix the body of capacitor, apply a tensile weight gradually to each lead.	Pull: Axial: >3kg Radial: >1kg																				

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DWG. NO. SPC-F004 \* Effective: 7/8/02 \* DCP No: 1398

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