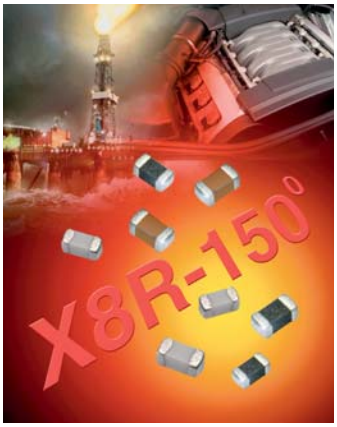
X8R Dielectric

General Specifications



AVX have developed a range of multilayer ceramic capacitors designed for use in applications up to 150ºC. These capacitors are manufactured with an X8R dielectric material which has a capacitance variation of ±15% between -55ºC and +150ºC.

The need for X8R performance has been driven by customer requirements for parts that operate at elevated temperatures. They provide a highly reliable capacitor with low loss and stable capacitance over temperature.

They are ideal for automotive under the hood sensors, measure while drilling and log while drilling. Typical applications include wire line logging tools such as gamma ray receivers, acoustic transceivers and micro-resistivity tools. They can also be used as bulk capacitors for high temperature camera modules.

X8R capacitors are available as standard and Automotive AEC-Q200 qualified parts. Optional termination systems, tin, FLEXITERM™ and conductive epoxy for hybrid applications are available. Providing this series with our FLEXITERM™ termination system provides further advantage to customers by way of enhanced resistance to both, temperature cycling and mechanical damage.

PART NUMBER (see page 2 for complete part number explanation)

0805	5	F	104	K	4	T	2	A
Size 0603 0805 1206	**Voltage** 25V = 3 50V = 5	**Dielectric** X8R = F	**Capacitance Code (In pF)** 2 Sig. Digits + Number of Zeros e.g. 10µF = 106	**Capacitance Tolerance** J = ± 5% K = ±10% M = ± 20%	**Failure Rate** 4 = Automotive A = Not Applicable	**Terminations** T = Plated Ni and Sn Z = FLEXITERM™ U = Conductive Epoxy for Hybrid apps	**Packaging** 2 = 7" Reel 4 = 13" Reel	**Special Code** A = Std. Product

NOTE: Contact factory for availability of Termination and Tolerance Options for Specific Part Numbers.

SIZE		0603		0805		1206	
	WVDC	25V	50V	25V	50V	25V	50V
271	Cap 270	G	G				
331	(pF) 330	G	G	J	J		
471	470	G	G	J	J		
681	680	G	G	J	J		
102	1000	G	G	J	J	J	J
152	1500	G	G	J	J	J	J
182	1800	G	G	J	J	J	J
222	2200	G	G	J	J	J	J
272	2700	G	G	J	J	J	J
332	3300	G	G	J	J	J	J
392	3900	G	G	J	J	J	J
472	4700	G	G	J	J	J	J
562	5600	G	G	J	J	J	J
682	6800	G	G	J	J	J	J
822	8200	G	G	J	J	J	J
103	Cap 0.01	G	G	J	J	J	J
123	(µF) 0.012	G	G	J	J	J	J
153	0.015	G	G	J	J	J	J
183	0.018	G	G	J	J	J	J
223	0.022	G	G	J	J	J	J
273	0.027	G	G	J	J	J	J
333	0.033	G	G	J	J	J	J
393	0.039	G	G	J	J	J	J
473	0.047	G	G	J	J	J	J
563	0.056	G		N	N	M	M
683	0.068	G		N	N	M	M
823	0.082	G		N	N	M	M
104	0.1	G		N	N	M	M
124	0.12	G		N	N	M	M
154	0.15			N	N	M	M
184	0.18			N		M	M
224	0.22			N		M	M
274	0.27			N		M	M
334	0.33			N		M	M
394	0.39			N		M	
474	0.47			N		M	
684	0.68					M	
824	0.82						
105	1						
	WVDC	25V	50V	25V	50V	25V	50V
SIZE		0603		0805		1206	

Letter	A	C	E	G	J	K	M	N	P	Q	X	Y	Z
Max. Thickness	0.33 (0.013)	0.56 (0.022)	0.71 (0.028)	0.86 (0.034)	0.94 (0.037)	1.02 (0.040)	1.27 (0.050)	1.40 (0.055)	1.52 (0.060)	1.78 (0.070)	2.29 (0.090)	2.54 (0.100)	2.79 (0.110)
	PAPER					EMBOSSED							

= AEC-Q200 Qualified

= Under development (Contact factory for advanced samples)

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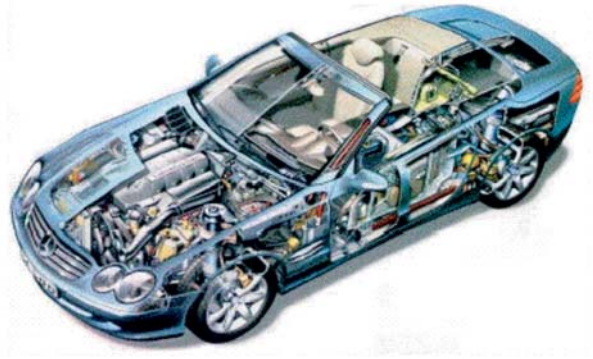
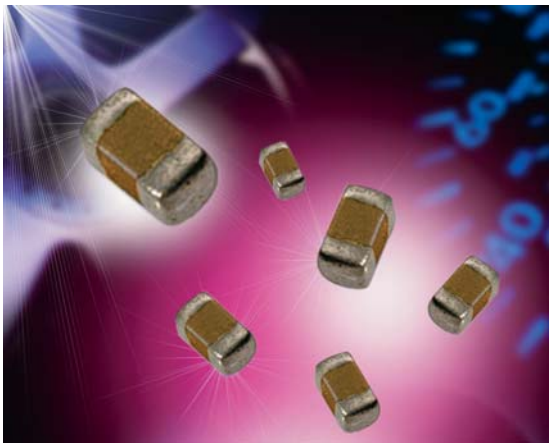
General Specifications

APPLICATIONS FOR X8R CAPACITORS

- All market sectors with a 150°C requirement
- Automotive on engine applications
- Oil exploration applications
- Hybrid automotive applications
  - Battery control
  - Inverter / converter circuits
  - Motor control applications
  - Water pump
- Hybrid commercial applications
  - Emergency circuits
  - Sensors
  - Temperature regulation





ADVANTAGES OF X8R MLC CAPACITORS

- Capacitance variation of ±15% between –55°C and +150°C
- Qualified to the highest automotive AEC-Q200 standards
- Excellent reliability compared to other capacitor technologies
- RoHS compliant
- Low ESR / ESL compared to other technologies
- Tin solder finish
- FLEXITERM™ available
- Hybrid available
- 50V range available

ENGINEERING TOOLS FOR HIGH VOLTAGE MLC CAPACITORS

- Samples
- Technical Articles
- Application Engineering
- Application Support