Technical Data Sheet

Ceramic Powders and Formulations for Passive Components
BME X7R Dielectric Powders

Application

Ferro's BME X7R dielectric powders are designed for use in the manufacture of Class II MLCC devices where X7R type TCC characteristics are required. These products are compatible with nickel (Ni) inner electrodes, copper (Cu) terminations and fire according to the conditions indicated in the table below. All of these products are formulated and processed to be RoHS compliant.
See individual Product Data Sheets for details.

BME X7R Products

Product Code		X7R342N	X7R402N
Dielectric Type		**X7R**	**X7R**
Dielectric Constant	@ 1 kHz	3400	4000
RoHS Compliant?		Yes	Yes
PbO Content	%	0	0
Dissipation Factor (DF)	%	1.7 at 7 µm	1.2 at 27 µm
RC Product at 25°C, 50V and 1kHz	ΩF	≥ 4100	≥ 18,000
RC Product at 125°C, 50V and 1kHz	ΩF	≥ 800	≥ 300
Breakdown Strength	V/µm	≥ 90	≥ 50
Particle Size D50	µm	0.60	0.80
Surface Area	m^2/g	3.6	4.3
Powder Density[1]	g/cc	5.9	5.9
Peak Firing Temperature	°C	1305	1285
pO_2 During Sintering	ppm	$10^{-8.5}$	$10^{-9.0}$
Time at Peak Temperature	Hours	2	2
Electrode Metal Composition	%	100 Ni	100 Ni
Ferro Termination Ink Product[2]		TM50-083	TM50-083
Comments		Designed for MLCC applications having fired layers ≥ 3 µm.	Designed for HV and range extension apps; Max K ~25 µm (250V); X7R TCC ≥ 15 µm.

1 Helium Pycnometer.
2 Product shown is for platable applications.

EU RoHS Directive 2011/65/EU

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