



Base Metal X7R Formulations

Description: Ferro's extensive line of dielectric formulations for ceramic capacitors includes products compatible with precious metal and base metal electrode systems. Base metal dielectrics are targeted for use in

X7R capacitor applications with Ni electrode/Cu termination metal systems. These environmentally friendly dielectrics have excellent sintered density and are compatible with both solvent and water-based binders.

Property	X7R312N	EV342N
Dielectric Type (TCC)	X7R	X7R
Dielectric Constant	3100	3100
RxC Product (ΩF) @25°C	4000	1500
Particle Size Distribution (μm)		
D90	1.1	1.9
D50	0.7	1.2
D10	0.3	0.7
Surface Area (m^2/g)	4.7	3.4
Dissipation Factor (%) @ Fired Layer Thickness (μm)	<2 @ 10	<3.3 @ 12
Target Firing Temperature (°C)	1300 for 2 h	1320 for 2 h
Target Firing Atmosphere (atm)	$1 \times 10^{-8.5}$	1×10^{-10}
Ni Electrode Ink	EL51-102	EL51-102
Cu Termination Ink	TM50-083	TM50-083

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