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Sub: Frequency – Temperature Characteristics

RE: **Aluminum Electrolytic Capacitors**

Type: Liquid electrolyte construction

2200uF / 10VDC / 12.5X14 case size

Page 2 – **NACEW** series, Standard Type with Extended Temperature
ESR over frequency (100Hz ~ 1MHz) at temperatures from -55°C ~ +105°C

Page 3 – **NACZ** series, Low ESR Type
ESR over frequency (100Hz ~ 1MHz) at temperatures from -55°C ~ +105°C

Page 4 - **NACK** series, Low ESR Type
ESR over frequency (100Hz ~ 1MHz) at temperatures from -55°C ~ +105°C

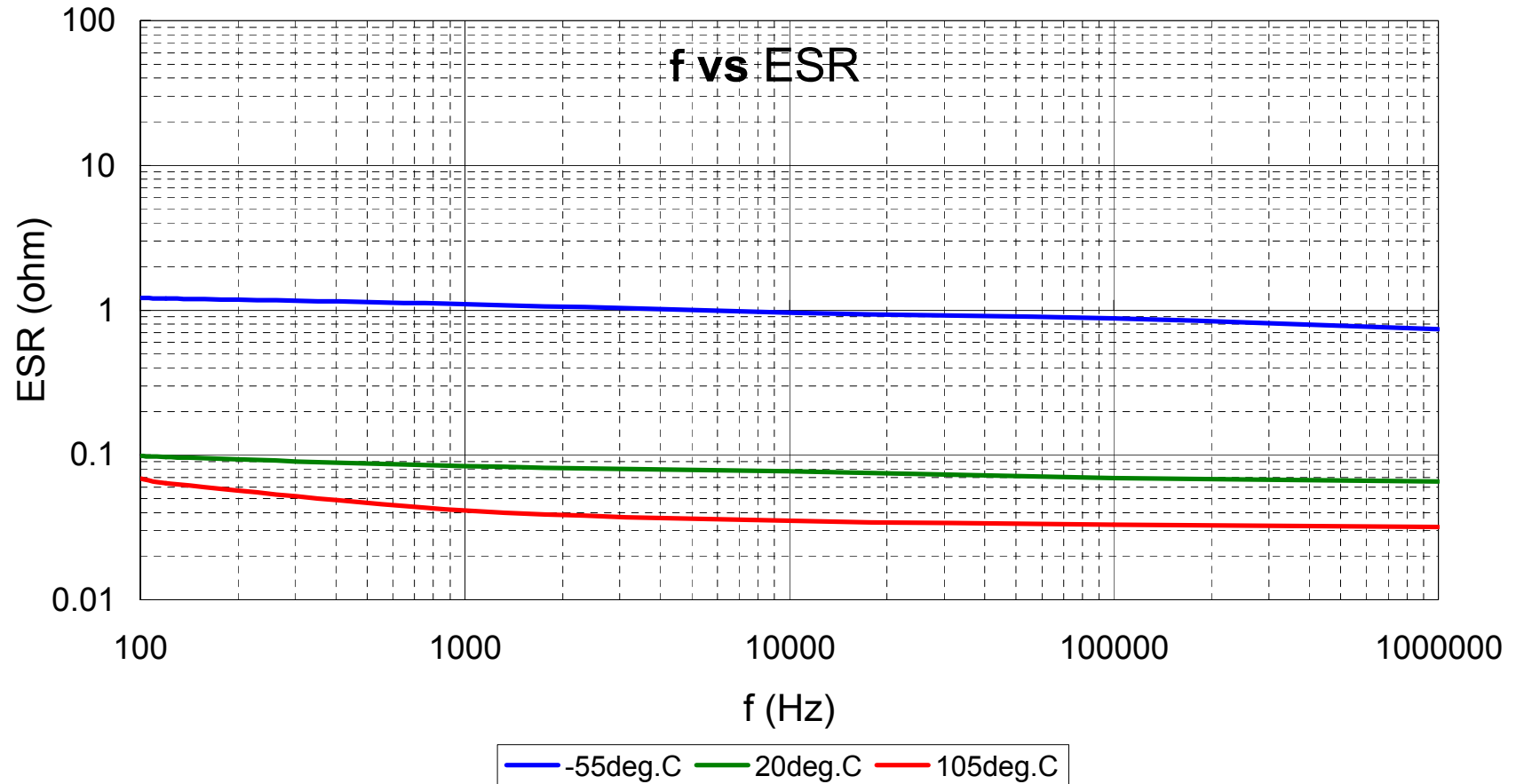
ESR Comparison: 2200uF / 10VDC / 12.5X14 case size

Series	ESR @ -55°C		ESR @ +20°C		ESR @ +105°C	
	1KHz	100KHz	1KHz	100KHz	1KHz	100KHz
NACEW	1.10	0.87	0.084	0.069	0.041	0.033
NACZ	0.42	0.31	0.050	0.040	0.037	0.025
NACK	0.90	0.68	0.058	0.048	0.038	0.029

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Frequency Characteristics

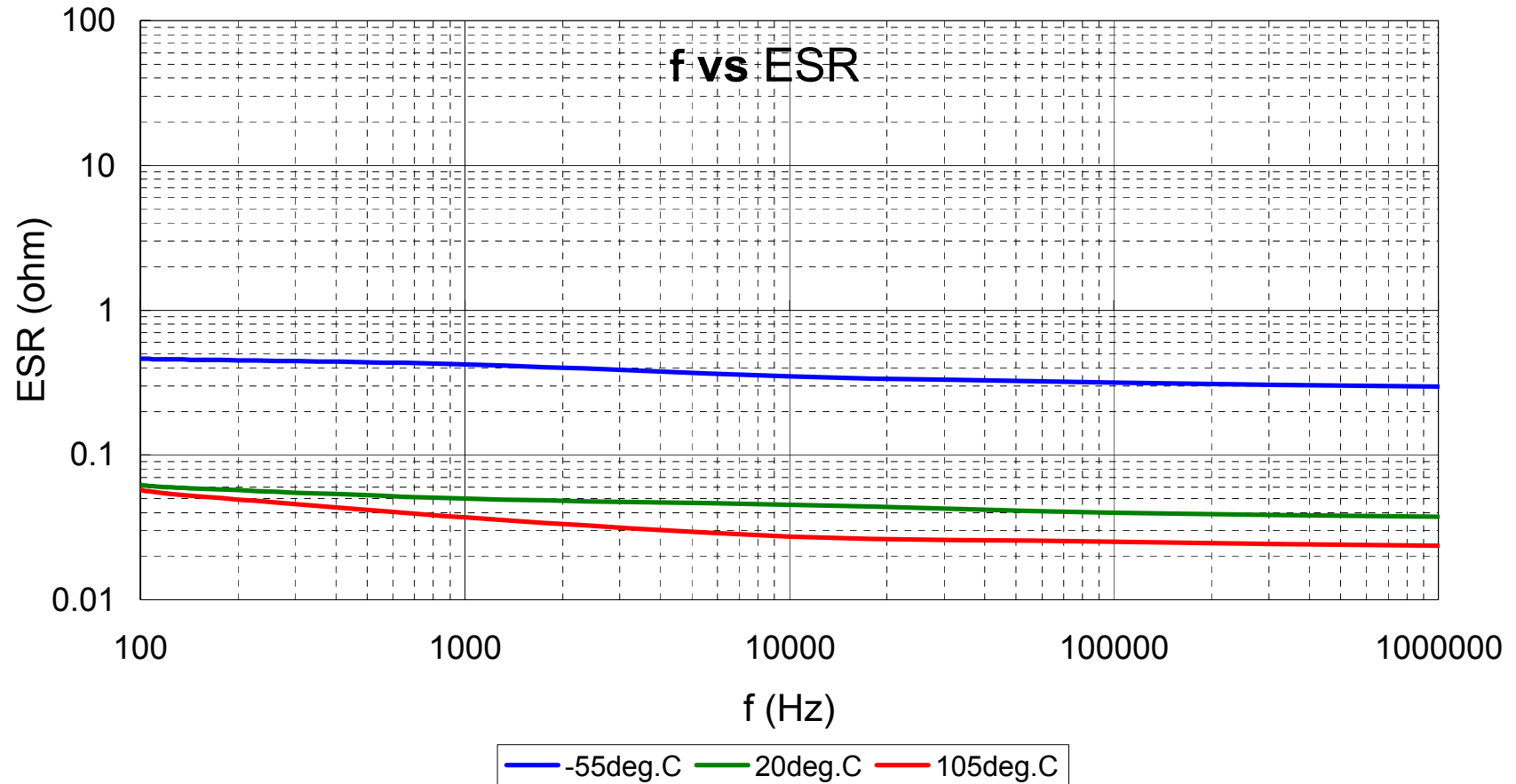
NACEW222M10V12.5X14TR13F (actual value)



f (Hz)	100	120	1k	10k	100k	1M
-55deg.C ESR (ohm)	1.215	1.205	1.102	0.960	0.875	0.737
20deg.C ESR (ohm)	0.099	0.096	0.084	0.077	0.069	0.066
105deg.C ESR (ohm)	0.069	0.064	0.041	0.035	0.033	0.032

Frequency Characteristics

NACZ222M10V12.5X14TRF (actual value)



f (Hz)	100	120	1k	10k	100k	1M
-55deg.C ESR (ohm)	0.462	0.458	0.423	0.348	0.316	0.297
20deg.C ESR (ohm)	0.062	0.060	0.050	0.045	0.040	0.038
105deg.C ESR (ohm)	0.057	0.054	0.037	0.027	0.025	0.024

ESR - Temperature Characteristics

PN: NACK222M10V12.5X14 (2200uF / 10VDC / 12.5mm diameter)

