GREEN YOUR APPLICATION WITH MCI HIGH Q CAPACITORS!

You can reduce power consumption of all your equipment that uses capacitors in AC applications simply by choosing MCI High Q capacitors. Mathematically, Power used by capacitors in AC applications is directly proportional to the capacitors' dissipation factor; the higher the DF the higher the power consumption. Hence, by changing from a conventional NP0 cap with a DF of .001 (Q = 1000) to an MCI High Q NP0 with a DF of .0001 (Q = 10,000) you will reduce the power dissipated through that device by a factor of 10, yielding a power saving of 90 %. Similarly, if you switch from a typical X7R or BX cap with DF of .01 (Q = 100) you will reduce power by a factor of 100 amounting to a saving of 99 %! Furthermore, the power reduction means a reduction in heat generated which will make your equipment run cooler, prolonging life of all components in it and lowering the load on or possibly eliminating the need for cooling fans and/or heat sinks which can reduce the weight of the equipment. This is particularly important in aircraft, aerospace and hand held applications. Another important advantage of MCI Hi Q capacitors in many applications is their consistently lower Equivalent Series Resistance (ESR) than others of the same value at the same operating conditions. Typical values are shown in the following table.

TABLE SHOWING TYPICAL POWER AND SERIES RESISTANCE SAVINGS USING MCI HIGH Q CAPACITORS

DIELECTRIC	W	F	Cap	DF	Q	ESR	P	Power Saving, Watts
	VAC	MHz	Pf			Ohms	Watts	Hi Q vs traditional NP0
BX, X7R	50	1	100	0.01	100	15.9236	0.015700	
Traditional NP0	50	1	100	0.001	1000	1.5924	0.001570	
High Q NP0	**50**	**1**	**100**	**0.0001**	**10000**	**0.1592**	**0.000157**	**0.015543**
BX, X7R	50	10	100	0.01	100	1.5924	0.157000	
Traditional NP0	50	10	100	0.001	1000	0.1592	0.015700	
High Q NP0	**50**	**10**	**100**	**0.0001**	**10000**	**0.0159**	**0.001570**	**0.155430**
BX, X7R	50	1000	100	0.01	100	0.0159	15.700000	
Traditional NP0	50	1000	100	0.001	1000	0.0016	1.570000	
High Q NP0	**50**	**1000**	**100**	**0.0001**	**10000**	**0.0002**	**0.157000**	**15.5430**
BX, X7R	100	1	100	0.01	100	15.9236	0.062800	
Traditional NP0	100	1	100	0.001	1000	1.5924	0.006280	
High Q NP0	**100**	**1**	**100**	**0.0001**	**10000**	**0.1592**	**0.000628**	**0.062172**
BX, X7R	100	10	100	0.01	100	1.5924	0.628000	
Traditional NP0	100	10	100	0.001	1000	0.1592	0.062800	
High Q NP0	**100**	**10**	**100**	**0.0001**	**10000**	**0.0159**	**0.006280**	**0.621720**
BX, X7R	100	1000	100	0.01	100	0.0159	62.8000	
Traditional NP0	100	1000	100	0.001	1000	0.0016	6.2800	
High Q NP0	**100**	**1000**	**100**	**0.0001**	**10000**	**0.0002**	**0.6280**	**62.1720**
BX, X7R	500	1	100	0.01	100	15.9236	1.5700	
Traditional NP0	500	1	100	0.001	1000	1.5924	0.1570	
High Q NP0	**500**	**1**	**100**	**0.0001**	**10000**	**0.1592**	**0.0157**	**1.554300**
BX, X7R	500	10	100	0.01	100	1.5924	15.7000	
Traditional NP0	500	10	100	0.001	1000	0.1592	1.5700	
High Q NP0	**500**	**10**	**100**	**0.0001**	**10000**	**0.0159**	**0.1570**	**15.5430**
BX, X7R	500	1000	100	0.01	100	0.0159	1570.00	
Traditional NP0	500	1000	100	0.001	1000	0.0016	157.00	
High Q NP0	**500**	**1000**	**100**	**0.0001**	**10000**	**0.0002**	**15.7000**	**1554.3000**