Hi-Q® High RF Power MLC Surface Mount Capacitors

For 600V to 7200V Applications

PRODUCT OFFERING

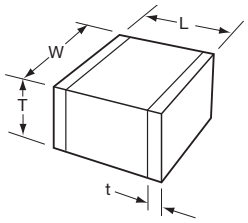
Hi-Q®, high RF power, surface mount MLC capacitors from AVX Corporation are characterized with ultra-low ESR and dissipation factor at high frequencies. They are designed to handle high power and high voltage levels for applications in RF power amplifiers, inductive heating, high magnetic field environments (MRI coils), medical and industrial electronics.

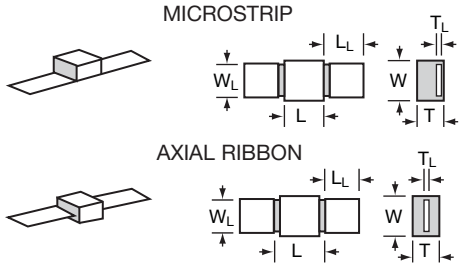
HOW TO ORDER

HQCC	A	A	271	J	A	T	1A
AVX Style HQCC HQCE HQLC HQLE	**Voltage** 300V = 9 500V = 7 1000V = A 1500V = S 2500V = W 3600V = J 5000V = K 7200V = M	**Temperature Coefficient** C0G = A P90 = M	**Capacitance Code** (2 significant digits + no. of zeros) Examples: 4.7 pF = 4R7 10 pF = 100 100 pF = 101 1,000 pF = 102	**Capacitance Tolerance** B = 0.1pf (<8.2pF) C = ±0.25pF (<8.2pF) D = ±0.50pF (<8.2pF) F = ±1% (≥10pF) G = ±2% J = ±5% K = ±10% M = ±20%	**Test Level** A = Standard	**Termination*** T = Plated Ni and Sn (RoHS Compliant) J = 5% Min Pb 7 = Plated Ni and Au A = Axial Ribbon M = Microstrip H = Cu/Sn (Non-Magnetic) **RoHS compliant	**Packaging** 1A = 7" Reel* 6 = Waffle Pack *HQCC & HQCE only

DIMENSIONS

millimeters (inches)





STYLE	HQCC	HQCE
(L) Length	5.84 +0.51 -0.25 (0.230 +0.020 -0.010)	9.65 +0.38 -0.25 (0.380 +0.015 -0.010)
(W) Width	6.35 ± 0.38 (0.250 ± 0.015)	9.65 ± 0.25 (0.380 ± 0.010)
(T) Thickness Max.	3.68 (0.145) max. for capacitance values ≤ 680pF	4.32 (0.170) max.
	4.19 (0.165) max. for capacitance values > 680pF	
(Y) Overlap	1.20 ± (0.040) max.	1.02 ± (0.040) max.

STYLE	HQLC	HQLE
(L) Length	6.22 ± 0.64 (0.245 ± 0.025)	9.65 +0.89 -0.25 (0.380 +0.035 -0.010)
(W) Width	6.35 ± 0.38 (0.250 ±0.015)	9.65 ± 0.25 (0.380 ± 0.010)
(T) Thickness Max.	3.68 (0.145) max. for capacitance values ≤ 680pF	4.32 (0.170) max.
	4.19 (0.165) max. for capacitance values ≤ 680pF	
(Y) Overlap	N/A	N/A
(L_L) Lead Length	12.7 min. (0.500)	19.05 (0.750)
(W_L) Lead Width	6.10 ± 0.127 (0.240 ± 0.005)	8.89 ± 0.25 (0.350 ±0.010)
(T_L) Lead Thickness	0.102 ±0.025 (0.004 ± 0.001)	0.25 ± 0.13 (0.010 ±0.005)
Lead Material	High Purity Silver Leads Leads are attached with High Temperature Solder	High Purity Silver Leads Leads are attached with High Temperature Solder

Not RoHS Compliant

LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

For RoHS compliant products, please select correct termination style.

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AVX RF

DIELECTRIC PERFORMANCE CHARACTERISTICS

Capacitance Range	1.0pF to 2,700pF (25°C, 1.0 ±0.2 Vrms at 1kHz, for ≤ 1000 pF use 1MHz)
Capacitance Tolerances	±0.10pF, ±0.25pF, ±0.50pF, ±1%, ±2%, ±5%, ±10%, ±20%
Dissipation Factor 25°C	0.1% Max (+25°C, 1.0 ±0.2 Vrms at 1kHz, for ≤ 1000 pF use 1MHz)
Operating Temperature Range	-55°C to +125°C
Temperature Characteristic	C0G: 0 ± 30 ppm/°C (-55°C to +125°C), P90: 90 ± 30 ppm/°C (-55°C to +125°C)
Insulation Resistance	100K MΩ min. @ +25°C and 500VDC 10K MΩ min. @ +125°C and 500VDC
Dielectric Strength	250% of WVDC for capacitors rated at 500 volts DC or less for 5 seconds. 150% of WVDC for capacitors rated at 1250 volts DC or less for 5 seconds. 120% of WVDC for capacitors rated above 1250 volts DC or less for 5 seconds.

HQCC CAPACITANCE VALUES (A DIELECTRIC)

Cap Code	Cap (pF)	Tol.	Rated WVDC
1R0	1.0	B, C, D	2500
1R2	1.2		
1R5	1.5		
1R8	1.8		
2R2	2.2		
2R7	2.7		
3R3	3.3		
3R9	3.9		
4R7	4.7		
5R6	5.6		
6R8	6.8		
8R2	8.2	F, G, J K, M	2500
100	10		
120	12		
150	15		
180	18		
220	22		
270	27		
330	33		
390	39		
470	47		
560	56		
680	68	F, G, J K, M	2500
820	82		
101	100		
121	120		
151	150		
181	180		
221	220		
271	270		
331	330		1500
391	390		
471	470	F, G, J K, M	1500
561	560		1000
681	680		
821	820		
102	1000		
122	1200		
152	1500		500
182	1800		
222	2200		300
272	2700		

HQCC CAPACITANCE VALUES (M DIELECTRIC)

Cap Code	Cap (pF)	Tol.	Rated WVDC
1R0	1.0	B, C, D	2500
1R1	1.1		
1R2	1.2		
1R3	1.3		
1R4	1.4		
1R5	1.5		
1R6	1.6		
1R7	1.7		
1R8	1.8		
1R9	1.9		
2R0	2.0		
2R1	2.1		
2R2	2.2		
2R4	2.4		
2R5	2.7		
3R0	3.0		
3R3	3.3		
3R6	3.6		
3R9	3.9		
4R3	4.3		
4R7	4.7		
5R1	5.1	F, G, J K, M	2500
5R6	5.6		
6R2	6.2		
6R8	6.8		
7R5	7.5		
8R2	8.2		
9R1	9.1		
100	10		
110	11		
120	12		
130	13		
150	15		
160	16		
180	18		
200	20		
220	22		
240	24		
270	27		
300	30		
330	33		
360	36		
390	39	F, G, J K, M	2500
430	43		
470	47		
510	51		
560	56		
620	62		
680	68		
750	75		
820	82		
910	91		
101	100		
111	110		
121	120		
131	130		
151	150		
161	160		
181	180		
201	200		
221	220		
241	240		
271	270		
301	300	F, G, J K, M	1500
331	330		
361	360		
391	390		
431	430		
471	470		
511	510		1000
561	560		
621	260		
681	680		
751	750		
821	820		
911	910		
102	1000		
112	1100		
122	1200		
152	1500		500
182	1800		
222	2220		300
242	2400		
272	2700		

HQCE CAPACITANCE VALUES (A DIELECTRIC)

Cap Code	Cap (pF)	Tol.	Rated WVDC	
			Standard	Extended
1R0	1.0	C, D	3600	7200
1R2	1.2			
1R5	1.5			
1R8	1.8			
2R2	2.2			
2R7	2.7			
3R3	3.3			
3R9	3.9			
4R7	4.7			
5R6	5.6			
6R8	6.8			
8R2	8.2			
100	10	G, J, K, M		
120	12			
150	15	G, J, K, M	3600	7200
180	18			
220	22			
270	27			
330	33			
390	39			
470	47			
560	56			
680	68			
820	82			
101	100			
121	120			5000
151	150			
181	180			
221	220	G, J, K, M	3600	NA
271	270			
331	330			
391	390			
471	470		2500	
561	560			
681	680			
821	820		1000	
102	1000			
122	1200			
152	1500			
182	1800			
222	2200			

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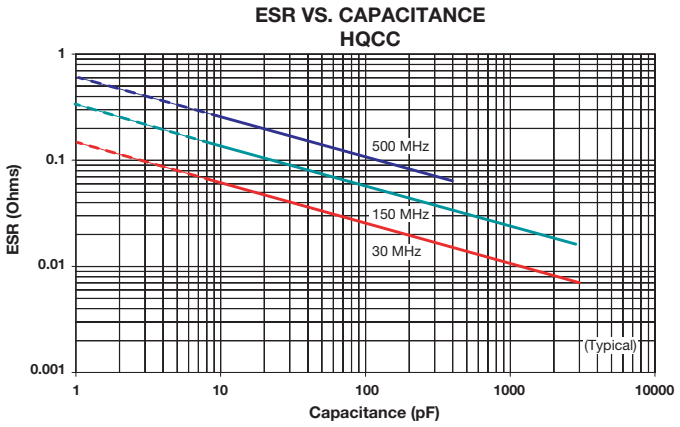
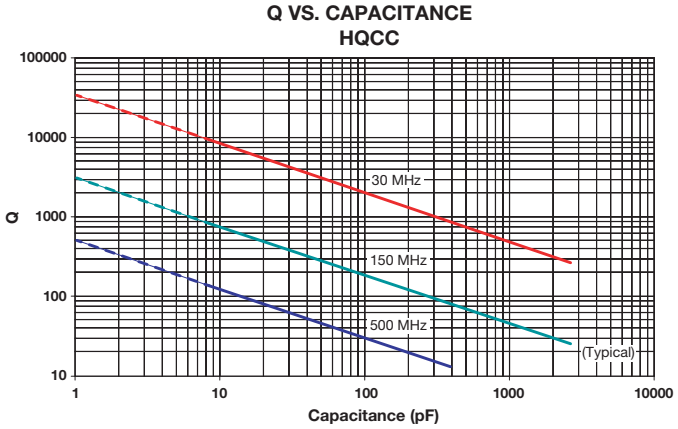
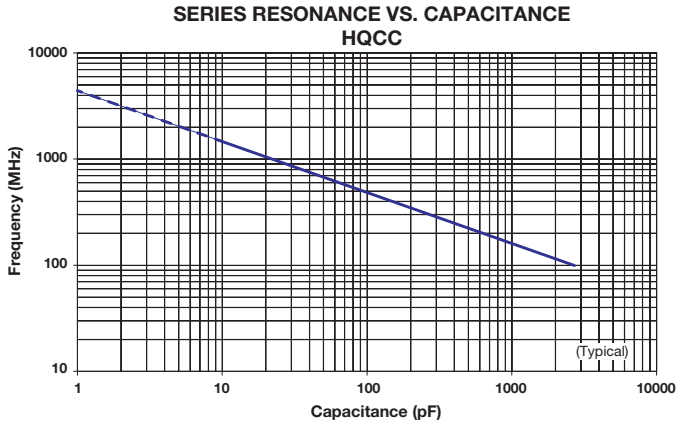
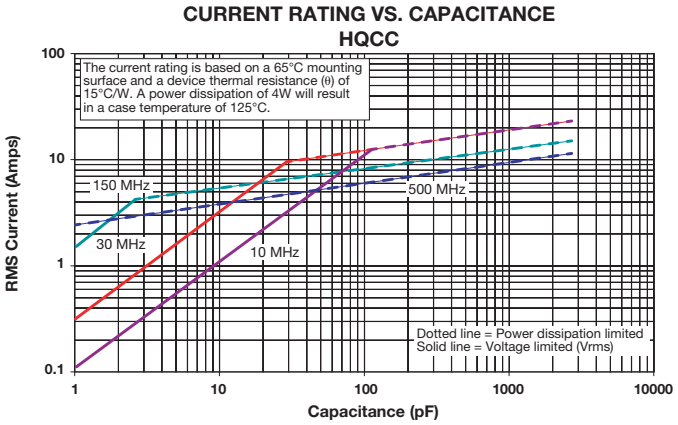
HQCC PERFORMANCE CHARACTERISTICS (A DIELECTRIC)

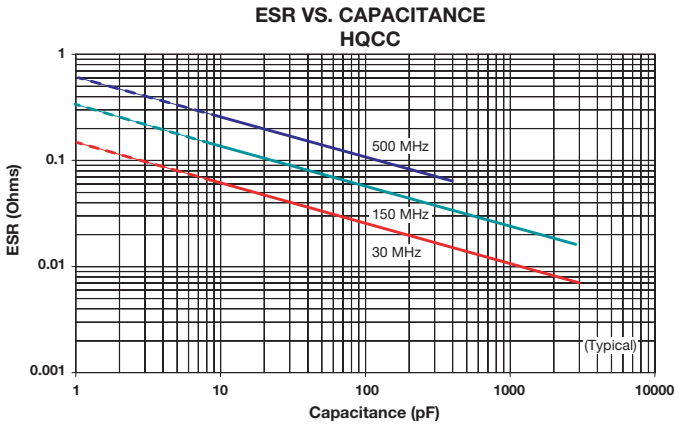


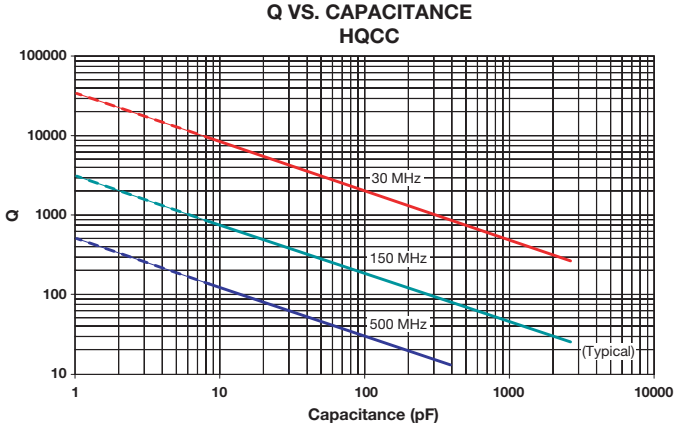






HQCC PERFORMANCE CHARACTERISTICS (M DIELECTRIC)





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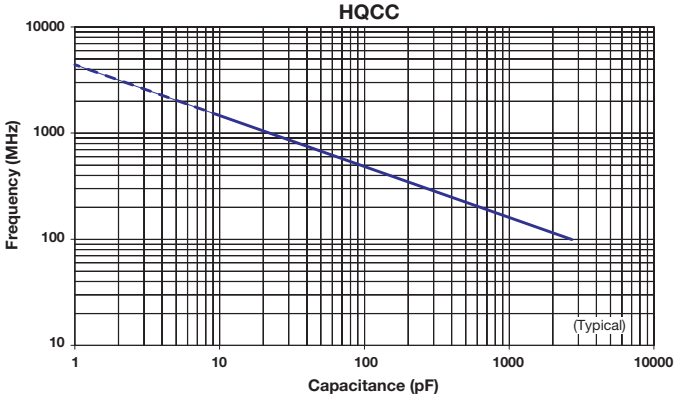
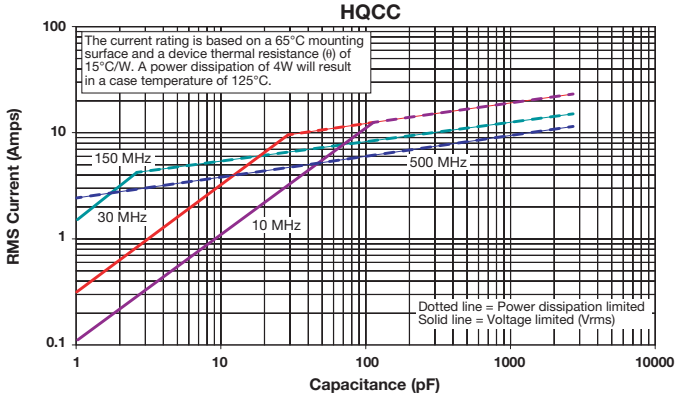
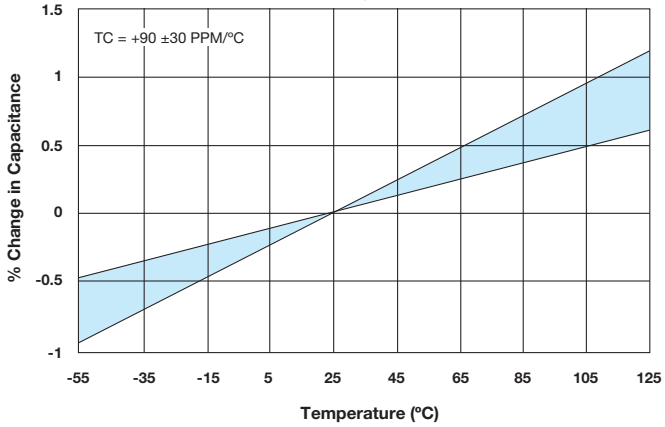
SERIES RESONANCE VS. CAPACITANCE
HQCC



CURRENT RATING VS. CAPACITANCE
HQCC



CAPACITANCE CHANGE VS. TEMPERTURE
HQCC



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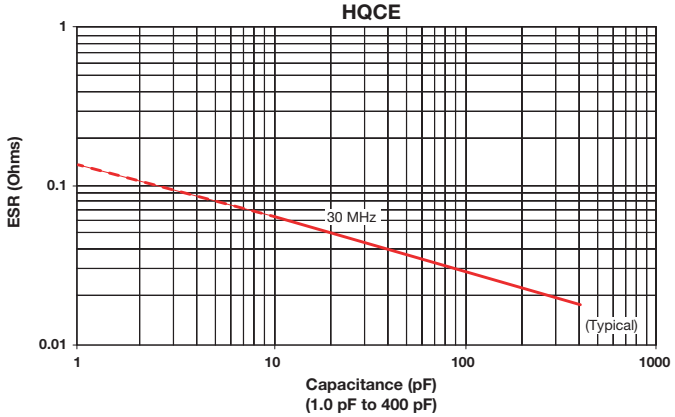
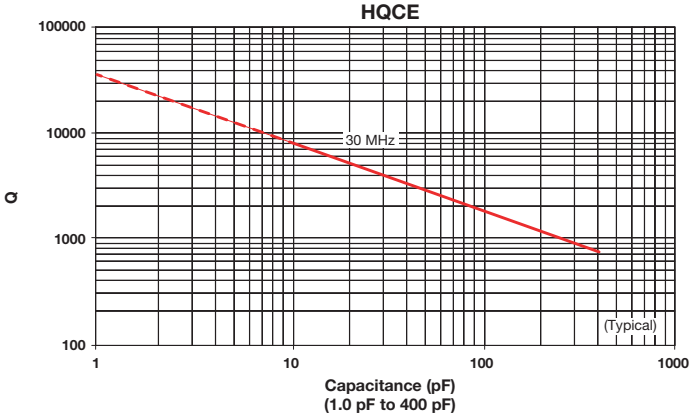
HQCE PERFORMANCE CHARACTERISTICS

ESR VS. CAPACITANCE
HQCE



Q VS. CAPACITANCE
HQCE



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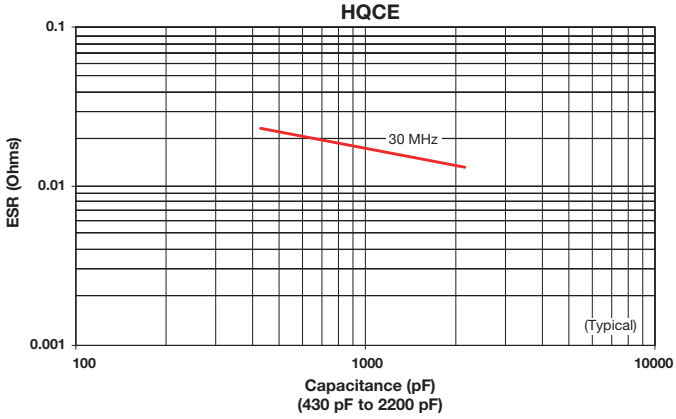
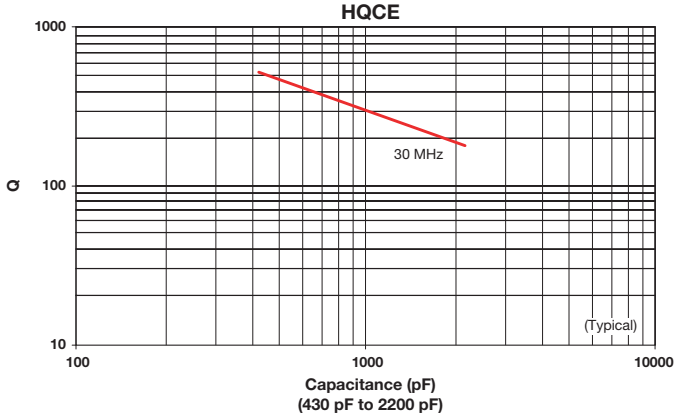
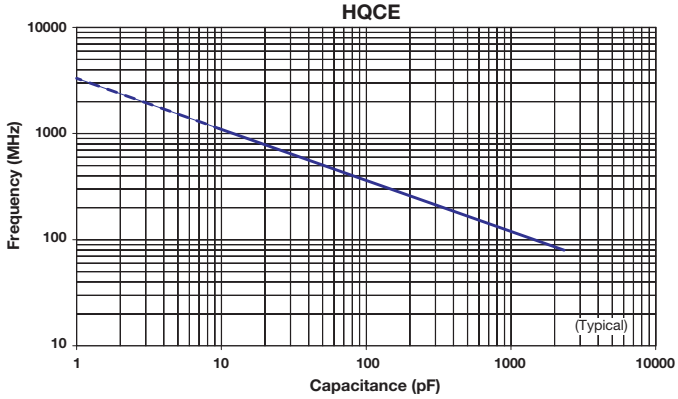
ESR VS. CAPACITANCE HQCE



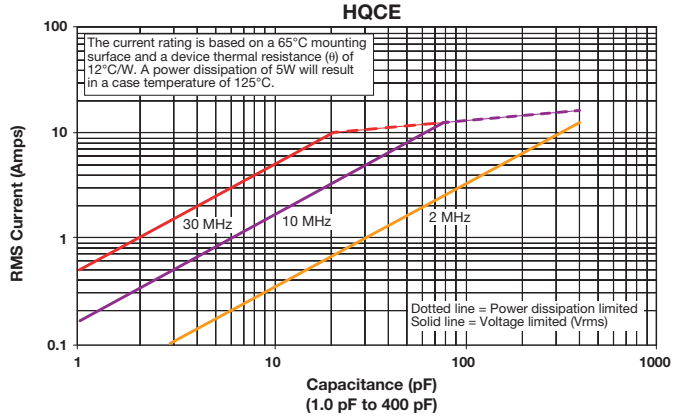
Q VS. CAPACITANCE HQCE



SERIES RESONANCE VS. CAPACITANCE HQCE



CURRENT RATING VS. CAPACITANCE HQCE



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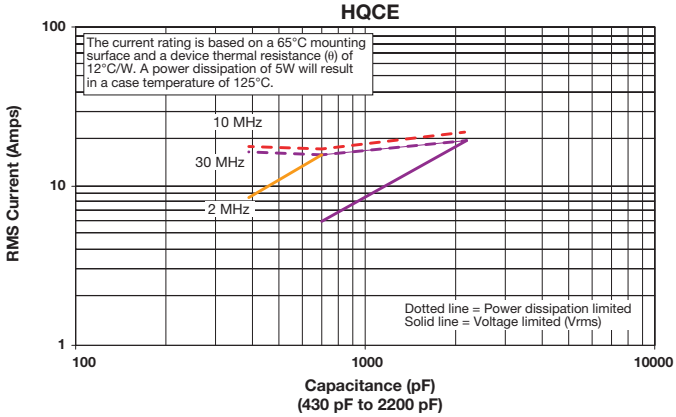

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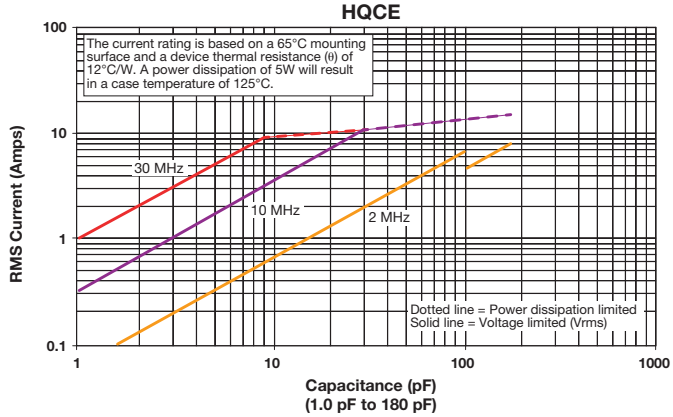

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