



# Surface Mount Multilayer Ceramic Chip Capacitors for High Temperatures 175 °C / 200 °C



### FEATURES

- Case size 0402, 0505, 0603, 0805, 1111
- High frequency / high temperature 175 °C / 200 °C
- Ultra-stable dielectric material
- Lead (Pb)-free terminations code “X”
- Surface mount, wet build process
- Reliable Noble Metal Electrode (NME) system
- Made with a combination of design, materials and tight process control to achieve very high field reliability
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### APPLICATIONS

- RF and microwave
- Broadband communication
- Satellite communication
- Base stations
- Medical instrumentation and test
- Military devices (radar, communication, etc.)
- Wireless devices

### ADDITIONAL RESOURCES



### ELECTRICAL SPECIFICATIONS

#### Note

- Electrical characteristics at 25 °C unless otherwise specified

**Operating Temperature:** -55 °C to +200 °C

#### Capacitance Range:

- 0402: 0.1 pF to 47 pF
- 0505: 0.1 pF to 330 pF
- 0603: 0.1 pF to 270 pF
- 0805: 0.1 pF to 1000 pF
- 1111: 0.2 pF to 3300 pF

**Voltage Rating:** 25 V<sub>DC</sub> to 500 V<sub>DC</sub>

#### Temperature Coefficient of Capacitance (TCC):

C0G (D): 0 ppm/°C ± 30 ppm/°C from -55 °C to +200 °C

#### Dissipation Factor (DF):

- C0G (D): 0.05 % max. at 1.0 V<sub>RMS</sub> and 1 MHz for values ≤ 1000 pF
- C0G (D): 0.05 % max. at 1.0 V<sub>RMS</sub> and 1 kHz for values > 1000 pF

**Aging Rate:** 0 % maximum per decade

#### Insulation Resistance (IR):

- at +25 °C and rated voltage 100 000 MΩ minimum or 1000 ΩF, whichever is less
- at +200 °C and rated voltage 10 000 MΩ minimum or 100 ΩF, whichever is less

#### Dielectric Strength Test:

- performed per method 103 of EIA-198-2-E.
- Applied test voltages: ≤ 100 V<sub>DC</sub>-rated: min. 250 % of rated voltage

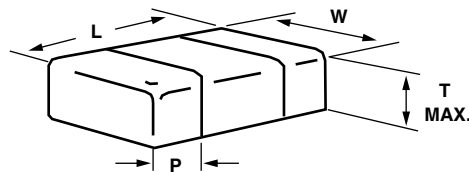
QUICK REFERENCE DATA				
DIELECTRIC	CASE	MAXIMUM VOLTAGE (V)	CAPACITANCE	
			MINIMUM	MAXIMUM
D = HIFREQ	0402	100	0.1 pF	47 pF
	0505	250	0.1 pF	470 pF
	0603	200	0.1 pF	270 pF
	0805	250	0.1 pF	1.0 nF
	1111	500	0.2 pF	3.3 nF

ORDERING INFORMATION								
VJ0805	D	2R2	V	X	A	A	C	HT
CASE CODE	DIELECTRIC	CAPACITANCE NOMINAL CODE	CAPACITANCE TOLERANCE	TERMINATION	DC VOLTAGE RATING (1)	MARKING	PACKAGING	PROCESS CODE
0402 0505 0603 0805 1111	D = HIFREQ	Expressed in picofarads (pF). The first two digits are significant, the third is a multiplier. An "R" indicates a decimal point. Examples: 1R0 = 1.0 pF	V = ± 0.05 pF B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ± 1 % G = ± 2 % J = ± 5 % K = ± 10 % M = ± 20 %  <b>Note:</b> for details see "Selection Chart"	X = Ni barrier 100 % tin plate matte finish	J = 16 V X = 25 V A = 50 V B = 100 V K = 150 V C = 200 V P = 250 V D = 300 V E = 500 V	A = unmarked (2) Q = marked	T = 7" reel / plastic tape C = 7" reel / paper tape J = 7" reel (low quantity) R = 11 1/4 / 13" reel / plastic tape P = 11 1/4 / 13" reel / paper tape	

**Notes**

- (1) DC voltage rating should not be exceeded in application
- (2) Case size 0402 only available with A

**DIMENSIONS** in inches (millimeters)



CASE CODE	STYLE	LENGTH (L)	WIDTH (W)	MAXIMUM THICKNESS (T)	TERMINATIONS PAD (P)	
					MINIMUM	MAXIMUM
0402	VJ0402	0.040 ± 0.004 (1.02 ± 0.10)	0.020 ± 0.004 (0.51 ± 0.10)	0.021 (0.61)	0.004 (0.10)	0.016 (0.41)
0505	VJ0505	0.055 + 0.015 / - 0.010 (1.40 + 0.382 / - 0.254)	0.055 ± 0.015 (1.40 ± 0.38)	0.057 (1.45)	0.004 (0.10)	0.016 (0.41)
0603	VJ0603	0.063 ± 0.006 (1.60 ± 0.15)	0.031 ± 0.005 (0.80 ± 0.12)	0.037 (0.94)	0.010 (0.25)	0.022 (0.55)
0805	VJ0805	0.079 ± 0.008 (2.00 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	0.057 (1.45)	0.010 (0.25)	0.030 (0.76)
1111	VJ1111	0.117 + 0.015 / - 0.010 (2.98 + 0.382 / - 0.254)	0.110 + 0.015 / - 0.020 (2.79 + 0.382 / - 0.509)	0.102 (2.59)	0.012 (0.30)	0.018 (0.46)



SELECTION CHART						
DIELECTRIC (VISHAY CODE)		C0G (D)				TOLERANCE
STYLE		VJ0402				
CASE SIZE		0402				
VOLTAGE (V <sub>DC</sub> )		16	25	50	100	
VOLTAGE CODE		J	X	A	B	
CAP. CODE	CAP.					
0R1	0.1 pF	••	••	••	••	V, B, C, D
0R2	0.2 pF	••	••	••	••	V, B, C, D
0R3	0.3 pF	••	••	••	••	V, B, C, D
0R4	0.4 pF	••	••	••	••	V, B, C, D
0R5	0.5 pF	••	••	••	••	V, B, C, D
0R6	0.6 pF	••	••	••	••	V, B, C, D
0R7	0.7 pF	••	••	••	••	V, B, C, D
0R8	0.8 pF	••	••	••	••	V, B, C, D
0R9	0.9 pF	••	••	••	••	V, B, C, D
1R0	1.0 pF	••	••	••	••	B, C, D
1R1	1.1 pF	••	••	••	••	B, C, D
1R2	1.2 pF	••	••	••	••	B, C, D
1R3	1.3 pF	••	••	••	••	B, C, D
1R4	1.4 pF	••	••	••	••	B, C, D
1R5	1.5 pF	••	••	••	••	B, C, D
1R6	1.6 pF	••	••	••	••	B, C, D
1R7	1.7 pF	••	••	••	••	B, C, D
1R8	1.8 pF	••	••	••	••	B, C, D
1R9	1.9 pF	••	••	••	••	B, C, D
2R0	2.0 pF	••	••	••	••	B, C, D
2R1	2.1 pF	••	••	••	••	B, C, D
2R2	2.2 pF	••	••	••	••	B, C, D
2R4	2.4 pF	••	••	••	••	B, C, D
2R7	2.7 pF	••	••	••	••	B, C, D
3R0	3.0 pF	••	••	••		B, C, D
3R3	3.3 pF	••	••	••		B, C, D
3R6	3.6 pF	••	••	••		B, C, D
3R9	3.9 pF	••	••	••		B, C, D
4R3	4.3 pF	••	••	••		B, C, D
4R7	4.7 pF	••	••	••		B, C, D
5R1	5.1 pF	••	••	••		B, C, D
5R6	5.6 pF	••	••	••		B, C, D
6R2	6.2 pF	••	••	••		B, C, D
6R8	6.8 pF	••	••	••		B, C, D
7R5	7.5 pF	••	••	••		B, C, D
8R2	8.2 pF	••	••	••		B, C, D
9R1	9.1 pF	••	••	••		B, C, D
100	10 pF	••	••	••		F, G, J, K, M
110	11 pF	••	••	••		F, G, J, K, M
120	12 pF	••	••	••		F, G, J, K, M
130	13 pF	••	••	••		F, G, J, K, M
150	15 pF	••	••	••		F, G, J, K, M
180	18 pF	••	••			F, G, J, K, M
200	20 pF	••	••			F, G, J, K, M
220	22 pF	••	••			F, G, J, K, M
240	24 pF	••	••			F, G, J, K, M
270	27 pF	••	••			F, G, J, K, M
300	30 pF	••				F, G, J, K, M
330	33 pF	••				F, G, J, K, M
360	36 pF	••				F, G, J, K, M
390	39 pF	••				F, G, J, K, M
430	43 pF	••				F, G, J, K, M
470	47 pF	••				F, G, J, K, M
510	51 pF					
560	56 pF					
620	62 pF					

Notes

- Paper carrier
- Approved 200 °C range



SELECTION CHART							
DIELECTRIC (VISHAY CODE)		C0G (D)					TOLERANCE
STYLE		VJ0505					
CASE SIZE		0505					
VOLTAGE (V <sub>DC</sub> )		50	100	150	200	250	
VOLTAGE CODE		A	B	K	C	P	
CAP. CODE	CAP.						
0R1	0.1 pF	•	•	•	•	•	V, B, C, D
0R2	0.2 pF	•	•	•	•	•	V, B, C, D
0R3	0.3 pF	•	•	•	•	•	V, B, C, D
0R4	0.4 pF	•	•	•	•	•	V, B, C, D
0R5	0.5 pF	•	•	•	•	•	V, B, C, D
0R6	0.6 pF	•	•	•	•	•	V, B, C, D
0R7	0.7 pF	•	•	•	•	•	V, B, C, D
0R8	0.8 pF	•	•	•	•	•	V, B, C, D
0R9	0.9 pF	•	•	•	•	•	V, B, C, D
1R0	1.0 pF	•	•	•	•	•	V, B, C, D
1R1	1.1 pF	•	•	•	•	•	V, B, C, D
1R2	1.2 pF	•	•	•	•	•	V, B, C, D
1R3	1.3 pF	•	•	•	•	•	V, B, C, D
1R4	1.4 pF	•	•	•	•	•	V, B, C, D
1R5	1.5 pF	•	•	•	•	•	V, B, C, D
1R6	1.6 pF	•	•	•	•	•	V, B, C, D
1R7	1.7 pF	•	•	•	•	•	V, B, C, D
1R8	1.8 pF	•	•	•	•	•	V, B, C, D
1R9	1.9 pF	•	•	•	•	•	V, B, C, D
2R0	2.0 pF	•	•	•	•	•	V, B, C, D
2R1	2.1 pF	•	•	•	•	•	V, B, C, D
2R2	2.2 pF	•	•	•	•	•	V, B, C, D
2R4	2.4 pF	•	•	•	•	•	V, B, C, D
2R7	2.7 pF	•	•	•	•	•	V, B, C, D
3R0	3.0 pF	•	•	•	•	•	V, B, C, D
3R3	3.3 pF	•	•	•	•	•	V, B, C, D
3R6	3.6 pF	•	•	•	•	•	V, B, C, D
3R9	3.9 pF	•	•	•	•	•	V, B, C, D
4R3	4.3 pF	•	•	•	•	•	V, B, C, D
4R7	4.7 pF	•	•	•	•	•	V, B, C, D
5R1	5.1 pF	•	•	•	•	•	V, B, C, D
5R6	5.6 pF	•	•	•	•	•	B, C, D
6R2	6.2 pF	•	•	•	•	•	B, C, D
6R8	6.8 pF	•	•	•	•	•	B, C, D
7R5	7.5 pF	•	•	•	•	•	B, C, D
8R2	8.2 pF	•	•	•	•	•	B, C, D
9R1	9.1 pF	•	•	•	•	•	B, C, D
100	10 pF	•	•	•	•	•	F, G, J, K, M
110	11 pF	•	•	•	•	•	F, G, J, K, M
120	12 pF	•	•	•	•	•	F, G, J, K, M
130	13 pF	•	•	•	•	•	F, G, J, K, M
150	15 pF	•	•	•	•	•	F, G, J, K, M
160	16 pF	•	•	•	•	•	F, G, J, K, M
180	18 pF	•	•	•	•	•	F, G, J, K, M



SELECTION CHART							
DIELECTRIC (VISHAY CODE)		COG (D)					TOLERANCE
STYLE		VJ0505					
CASE SIZE		0505					
VOLTAGE (V <sub>DC</sub> )		50	100	150	200	250	
VOLTAGE CODE		A	B	K	C	P	
CAP. CODE	CAP.						
200	20 pF	•	•	•	•	•	F, G, J, K, M
220	22 pF	•	•	•	•	•	F, G, J, K, M
240	24 pF	•	•	•	•	•	F, G, J, K, M
270	27 pF	•	•	•	•	•	F, G, J, K, M
300	30 pF	•	•	•	•	•	F, G, J, K, M
330	33 pF	•	•	•	•	•	F, G, J, K, M
360	36 pF	•	•	•	•	•	F, G, J, K, M
390	39 pF	•	•	•	•	•	F, G, J, K, M
430	43 pF	•	•	•	•	•	F, G, J, K, M
470	47 pF	•	•	•	•	•	F, G, J, K, M
510	51 pF	•	•	•	•	•	F, G, J, K, M
560	56 pF	•	•	•	•	•	F, G, J, K, M
620	62 pF	•	•	•	•	•	F, G, J, K, M
680	68 pF	•	•	•	•	•	F, G, J, K, M
750	75 pF	•	•	•	•	•	F, G, J, K, M
820	82 pF	•	•	•	•	•	F, G, J, K, M
910	91 pF	•	•	•	•		F, G, J, K, M
101	100 pF	•	•	•	•		F, G, J, K, M
111	110 pF	•	•	•	•		F, G, J, K, M
121	120 pF	•	•	•	•		F, G, J, K, M
131	130 pF	•	•	•	•		F, G, J, K, M
151	150 pF	•	•	•			F, G, J, K, M
161	160 pF	•	•	•			F, G, J, K, M
181	180 pF	•	•	•			F, G, J, K, M
201	200 pF	•	•				F, G, J, K, M
221	220 pF	•	•				F, G, J, K, M
241	240 pF	•	•				F, G, J, K, M
271	270 pF	•	•				F, G, J, K, M
301	300 pF	•					F, G, J, K, M
331	330 pF	•					F, G, J, K, M
361	360 pF	•					F, G, J, K, M
391	390 pF	•					F, G, J, K, M
431	430 pF	•					F, G, J, K, M
471	470 pF	•					F, G, J, K, M

Notes

- Approved 200 °C range
- Approved 175 °C range
- Plastic carrier tape



SELECTION CHART							
DIELECTRIC (VISHAY CODE)		COG (D)					TOLERANCE
STYLE		VJ0603					
CASE SIZE		0603					
VOLTAGE (V <sub>DC</sub> )		16	25	50	100	200	
VOLTAGE CODE		J	X	A	B	C	
CAP. CODE	CAP.						
0R1	0.1 pF	••	••	••	••	••	V, B, C, D
0R2	0.2 pF	••	••	••	••	••	V, B, C, D
0R3	0.3 pF	••	••	••	••	••	V, B, C, D
0R4	0.4 pF	••	••	••	••	••	V, B, C, D
0R5	0.5 pF	••	••	••	••	••	V, B, C, D
0R6	0.6 pF	••	••	••	••	••	V, B, C, D
0R7	0.7 pF	••	••	••	••	••	V, B, C, D
0R8	0.8 pF	••	••	••	••	••	V, B, C, D
0R9	0.9 pF	••	••	••	••	••	V, B, C, D
1R0	1.0 pF	••	••	••	••	••	V, B, C, D
1R1	1.1 pF	••	••	••	••	••	B, C, D
1R2	1.2 pF	••	••	••	••	••	B, C, D
1R3	1.3 pF	••	••	••	••	••	B, C, D
1R4	1.4 pF	••	••	••	••	••	B, C, D
1R5	1.5 pF	••	••	••	••	••	B, C, D
1R6	1.6 pF	••	••	••	••	••	B, C, D
1R7	1.7 pF	••	••	••	••	••	B, C, D
1R8	1.8 pF	••	••	••	••	••	B, C, D
1R9	1.9 pF	••	••	••	••	••	B, C, D
2R0	2.0 pF	••	••	••	••	••	B, C, D
2R1	2.1 pF	••	••	••	••	••	B, C, D
2R2	2.2 pF	••	••	••	••	••	B, C, D
2R4	2.4 pF	••	••	••	••	••	B, C, D
2R7	2.7 pF	••	••	••	••	••	B, C, D
3R0	3.0 pF	••	••	••	••	••	B, C, D
3R3	3.3 pF	••	••	••	••	••	B, C, D
3R6	3.6 pF	••	••	••	••	••	B, C, D
3R9	3.9 pF	••	••	••	••	••	B, C, D
4R3	4.3 pF	••	••	••	••	••	B, C, D
4R7	4.7 pF	••	••	••	••	••	B, C, D
5R1	5.1 pF	••	••	••	••	••	B, C, D
5R6	5.6 pF	••	••	••	••	••	B, C, D
6R2	6.2 pF	••	••	••	••	••	B, C, D
6R8	6.8 pF	••	••	••	••	••	B, C, D
7R5	7.5 pF	••	••	••	••	••	B, C, D
8R2	8.2 pF	••	••	••	••	••	B, C, D
9R1	9.1 pF	••	••	••	••		B, C, D



SELECTION CHART							
DIELECTRIC (VISHAY CODE)		COG (D)					TOLERANCE
STYLE		VJ0603					
CASE SIZE		0603					
VOLTAGE (V <sub>DC</sub> )		16	25	50	100	200	
VOLTAGE CODE		J	X	A	B	C	
CAP. CODE	CAP.						
100	10 pF	••	••	••	••		F, G, J, K, M
110	11 pF	••	••	••	••		F, G, J, K, M
120	12 pF	••	••	••	••		F, G, J, K, M
130	13 pF	••	••	••	••		F, G, J, K, M
150	15 pF	••	••	••	••		F, G, J, K, M
180	18 pF	••	••	••	••		F, G, J, K, M
200	20 pF	••	••	••	••		F, G, J, K, M
220	22 pF	••	••	••	••		F, G, J, K, M
240	24 pF	••	••	••	••		F, G, J, K, M
270	27 pF	••	••	••	••		F, G, J, K, M
300	30 pF	••	••	••	••		F, G, J, K, M
330	33 pF	••	••	••	••		F, G, J, K, M
360	36 pF	••	••	••	••		F, G, J, K, M
390	39 pF	••	••	••	••		F, G, J, K, M
430	43 pF	••	••	••	••		F, G, J, K, M
470	47 pF	••	••	••	••		F, G, J, K, M
510	51 pF	••	••	••			F, G, J, K, M
560	56 pF	••	••	••			F, G, J, K, M
620	62 pF	••	••	••			F, G, J, K, M
680	68 pF	••	••	••			F, G, J, K, M
750	75 pF	••	••	••			F, G, J, K, M
820	82 pF	••	••	••			F, G, J, K, M
910	91 pF	••	••	••			F, G, J, K, M
101	100 pF	••	••	••			F, G, J, K, M
111	110 pF	••	••				F, G, J, K, M
121	120 pF	••	••				F, G, J, K, M
131	130 pF	••	••				F, G, J, K, M
151	150 pF	••	••				F, G, J, K, M
181	180 pF	••					F, G, J, K, M
201	200 pF	••					F, G, J, K, M
221	220 pF	••					F, G, J, K, M
241	240 pF	••					F, G, J, K, M
271	270 pF	••					F, G, J, K, M
301	300 pF						
331	330 pF						

Notes

- Approved 200 °C range
- Paper carrier



SELECTION CHART								
DIELECTRIC (VISHAY CODE)		COG (D)						TOLERANCE
STYLE		VJ0805						
CASE SIZE		0805						
VOLTAGE (V <sub>DC</sub> )		16	25	50	100	200	250	
VOLTAGE CODE		J	X	A	B	C	P	
CAP. CODE	CAP.							
0R1	0.1 pF	•	•	•	•	•	•	V, B, C, D
0R2	0.2 pF	•	•	•	•	•	•	V, B, C, D
0R3	0.3 pF	•	•	•	•	•	•	V, B, C, D
0R4	0.4 pF	•	•	•	•	•	•	V, B, C, D
0R5	0.5 pF	•	•	•	•	•	•	V, B, C, D
0R6	0.6 pF	•	•	•	•	•	•	V, B, C, D
0R7	0.7 pF	•	•	•	•	•	•	V, B, C, D
0R8	0.8 pF	•	•	•	•	•	•	V, B, C, D
0R9	0.9 pF	•	•	•	•	•	•	V, B, C, D
1R0	1.0 pF	•	•	•	•	•	•	V, B, C, D
1R1	1.1 pF	•	•	•	•	•	•	B, C, D
1R2	1.2 pF	•	•	•	•	•	•	B, C, D
1R3	1.3 pF	•	•	•	•	•	•	B, C, D
1R4	1.4 pF	•	•	•	•	•	•	B, C, D
1R5	1.5 pF	•	•	•	•	•	•	B, C, D
1R6	1.6 pF	•	•	•	•	•	•	B, C, D
1R7	1.7 pF	•	•	•	•	•	•	B, C, D
1R8	1.8 pF	•	•	•	•	•	•	B, C, D
1R9	1.9 pF	•	•	•	•	•	•	B, C, D
2R0	2.0 pF	•	•	•	•	•	•	B, C, D
2R1	2.1 pF	•	•	•	•	•	•	B, C, D
2R2	2.2 pF	•	•	•	•	•	•	B, C, D
2R4	2.4 pF	•	•	•	•	•	•	B, C, D
2R7	2.7 pF	•	•	•	•	•	•	B, C, D
3R0	3.0 pF	•	•	•	•	•	•	B, C, D
3R3	3.3 pF	•	•	•	•	•	•	B, C, D
3R6	3.6 pF	•	•	•	•	•	•	B, C, D
3R9	3.9 pF	•	•	•	•	•	•	B, C, D
4R3	4.3 pF	•	•	•	•	•	•	B, C, D
4R7	4.7 pF	•	•	•	•	•	•	B, C, D
5R1	5.1 pF	•	•	•	•	•	•	B, C, D
5R6	5.6 pF	•	•	•	•	•	•	B, C, D
6R2	6.2 pF	•	•	•	•	•	•	B, C, D
6R8	6.8 pF	•	•	•	•	•	•	B, C, D
7R5	7.5 pF	•	•	•	•	•	•	B, C, D
8R2	8.2 pF	•	•	•	•	•	•	B, C, D
9R1	9.1 pF	•	•	•	•	•	•	B, C, D
100	10 pF	•	•	•	•	•	•	F, G, J, K, M
110	11 pF	•	•	•	•	•	•	F, G, J, K, M
120	12 pF	•	•	•	•	•	•	F, G, J, K, M
130	13 pF	•	•	•	•	•	•	F, G, J, K, M
150	15 pF	•	•	•	•	•	•	F, G, J, K, M
180	18 pF	•	•	•	•	•	•	F, G, J, K, M
200	20 pF	•	•	•	•	•	•	F, G, J, K, M
220	22 pF	•	•	•	•	•	•	F, G, J, K, M





SELECTION CHART								
DIELECTRIC (VISHAY CODE)		COG (D)						TOLERANCE
STYLE		VJ0805						
CASE SIZE		0805						
VOLTAGE (V <sub>DC</sub> )		16	25	50	100	200	250	
VOLTAGE CODE		J	X	A	B	C	P	
CAP. CODE	CAP.							
240	24 pF	•	•	•	•	•	•	F, G, J, K, M
270	27 pF	•	•	•	•	•	•	F, G, J, K, M
300	30 pF	•	•	•	•	•	•	F, G, J, K, M
330	33 pF	•	•	•	•	•	•	F, G, J, K, M
360	36 pF	•	•	•	•	•	•	F, G, J, K, M
390	39 pF	•	•	•	•	•	•	F, G, J, K, M
430	43 pF	•	•	•	•	•	•	F, G, J, K, M
470	47 pF	•	•	•	•	•	•	F, G, J, K, M
510	51 pF	•	•	•	•	•	•	F, G, J, K, M
560	56 pF	•	•	•	•	•	•	F, G, J, K, M
620	62 pF	•	•	•	•	•	•	F, G, J, K, M
680	68 pF	•	•	•	•	•		F, G, J, K, M
750	75 pF	•	•	•	•	•		F, G, J, K, M
820	82 pF	•	•	•	•			F, G, J, K, M
910	91 pF	•	•	•	•			F, G, J, K, M
101	100 pF	•	•	•	•			F, G, J, K, M
111	110 pF	•	•	•	•			F, G, J, K, M
121	120 pF	•	•	•	•			F, G, J, K, M
131	130 pF	•	•	•	•			F, G, J, K, M
151	150 pF	•	•	•	•			F, G, J, K, M
181	180 pF	•	•	•	•			F, G, J, K, M
201	200 pF	•	•	•	•			F, G, J, K, M
221	220 pF	•	•	•	•			F, G, J, K, M
241	240 pF	•	•	•	•			F, G, J, K, M
271	270 pF	•	•	•				F, G, J, K, M
301	300 pF	•	•	•				F, G, J, K, M
331	330 pF	•	•	•				F, G, J, K, M
361	360 pF	•	•	•				F, G, J, K, M
391	390 pF	•	•	•				F, G, J, K, M
431	430 pF	•	•	•				F, G, J, K, M
471	470 pF	•	•	•				F, G, J, K, M
511	510 pF	•	•	•				F, G, J, K, M
561	560 pF	•	•					F, G, J, K, M
621	620 pF	•	•					F, G, J, K, M
681	680 pF	•	•					F, G, J, K, M
751	750 pF	•						F, G, J, K, M
821	820 pF	•						F, G, J, K, M
911	910 pF	•						F, G, J, K, M
102	1000 pF	•						F, G, J, K, M
112	1100 pF							
122	1200 pF							
132	1300 pF							
152	1500 pF							

Notes

- Approved 200 °C range
- Plastic carrier tape



SELECTION CHART							
DIELECTRIC (VISHAY CODE)		C0G (D)					TOLERANCE
STYLE		VJ1111					
CASE SIZE		1111					
VOLTAGE (V <sub>DC</sub> )		50	100	200	300	500	
VOLTAGE CODE		A	B	C	D	E	
CAP. CODE	CAP.						
0R2	0.2 pF	•	•	•	•	•	V, B, C, D
0R3	0.3 pF	•	•	•	•	•	V, B, C, D
0R4	0.4 pF	•	•	•	•	•	V, B, C, D
0R5	0.5 pF	•	•	•	•	•	V, B, C, D
0R6	0.6 pF	•	•	•	•	•	V, B, C, D
0R7	0.7 pF	•	•	•	•	•	V, B, C, D
0R8	0.8 pF	•	•	•	•	•	V, B, C, D
0R9	0.9 pF	•	•	•	•	•	V, B, C, D
1R0	1.0 pF	•	•	•	•	•	V, B, C, D
1R1	1.1 pF	•	•	•	•	•	B, C, D
1R2	1.2 pF	•	•	•	•	•	B, C, D
1R3	1.3 pF	•	•	•	•	•	B, C, D
1R4	1.4 pF	•	•	•	•	•	B, C, D
1R5	1.5 pF	•	•	•	•	•	B, C, D
1R6	1.6 pF	•	•	•	•	•	B, C, D
1R7	1.7 pF	•	•	•	•	•	B, C, D
1R8	1.8 pF	•	•	•	•	•	B, C, D
1R9	1.9 pF	•	•	•	•	•	B, C, D
2R0	2.0 pF	•	•	•	•	•	B, C, D
2R1	2.1 pF	•	•	•	•	•	B, C, D
2R2	2.2 pF	•	•	•	•	•	B, C, D
2R4	2.4 pF	•	•	•	•	•	B, C, D
2R7	2.7 pF	•	•	•	•	•	B, C, D
3R0	3.0 pF	•	•	•	•	•	B, C, D
3R3	3.3 pF	•	•	•	•	•	B, C, D
3R6	3.6 pF	•	•	•	•	•	B, C, D
3R9	3.9 pF	•	•	•	•	•	B, C, D
4R3	4.3 pF	•	•	•	•	•	B, C, D
4R7	4.7 pF	•	•	•	•	•	B, C, D
5R1	5.1 pF	•	•	•	•	•	B, C, D
5R6	5.6 pF	•	•	•	•	•	B, C, D
6R2	6.2 pF	•	•	•	•	•	B, C, D
6R8	6.8 pF	•	•	•	•	•	B, C, D
7R5	7.5 pF	•	•	•	•	•	B, C, D
8R2	8.2 pF	•	•	•	•	•	B, C, D
9R1	9.1 pF	•	•	•	•	•	B, C, D
100	10 pF	•	•	•	•	•	F, G, J, K, M
110	11 pF	•	•	•	•	•	F, G, J, K, M
120	12 pF	•	•	•	•	•	F, G, J, K, M
130	13 pF	•	•	•	•	•	F, G, J, K, M
150	15 pF	•	•	•	•	•	F, G, J, K, M
160	16 pF	•	•	•	•	•	F, G, J, K, M
180	18 pF	•	•	•	•	•	F, G, J, K, M
200	20 pF	•	•	•	•	•	F, G, J, K, M
220	22 pF	•	•	•	•	•	F, G, J, K, M
240	24 pF	•	•	•	•	•	F, G, J, K, M
270	27 pF	•	•	•	•	•	F, G, J, K, M
300	30 pF	•	•	•	•	•	F, G, J, K, M
330	33 pF	•	•	•	•	•	F, G, J, K, M
360	36 pF	•	•	•	•	•	F, G, J, K, M



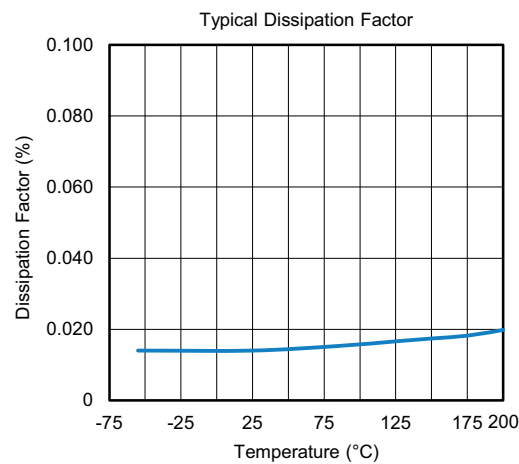
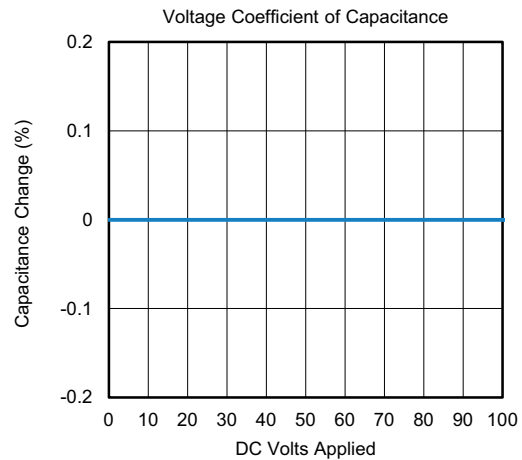
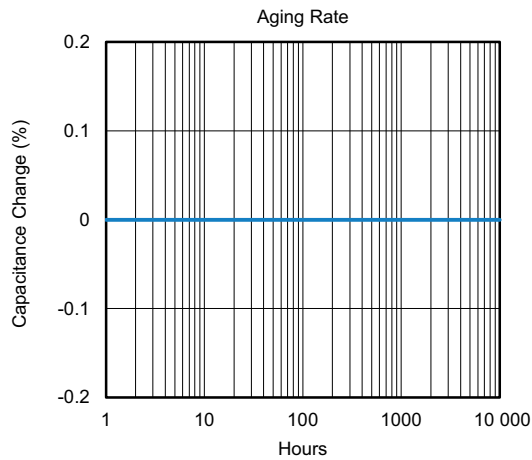
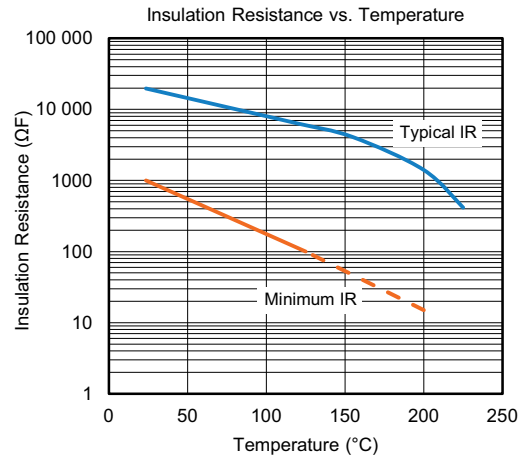
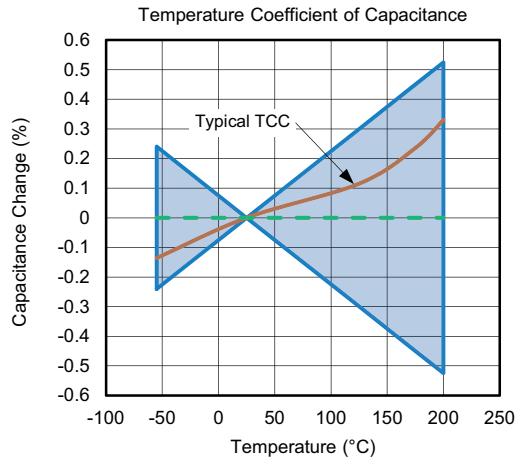
SELECTION CHART							
DIELECTRIC (VISHAY CODE)		COG (D)					TOLERANCE
STYLE		VJ1111					
CASE SIZE		1111					
VOLTAGE (V <sub>DC</sub> )		50	100	200	300	500	
VOLTAGE CODE		A	B	C	D	E	
CAP. CODE	CAP.						
390	39 pF	•	•	•	•	•	F, G, J, K, M
430	43 pF	•	•	•	•	•	F, G, J, K, M
470	47 pF	•	•	•	•	•	F, G, J, K, M
510	51 pF	•	•	•	•	•	F, G, J, K, M
560	56 pF	•	•	•	•	•	F, G, J, K, M
620	62 pF	•	•	•	•	•	F, G, J, K, M
680	68 pF	•	•	•	•	•	F, G, J, K, M
750	75 pF	•	•	•	•	•	F, G, J, K, M
820	82 pF	•	•	•	•	•	F, G, J, K, M
910	91 pF	•	•	•	•	•	F, G, J, K, M
101	100 pF	•	•	•	•	•	F, G, J, K, M
111	110 pF	•	•	•	•	•	F, G, J, K, M
121	120 pF	•	•	•	•	•	F, G, J, K, M
131	130 pF	•	•	•	•	•	F, G, J, K, M
151	150 pF	•	•	•	•	•	F, G, J, K, M
161	160 pF	•	•	•	•	•	F, G, J, K, M
181	180 pF	•	•	•	•	•	F, G, J, K, M
201	200 pF	•	•	•	•	•	F, G, J, K, M
221	220 pF	•	•	•	•	•	F, G, J, K, M
241	240 pF	•	•	•	•	•	F, G, J, K, M
271	270 pF	•	•	•	•	•	F, G, J, K, M
301	300 pF	•	•	•	•	•	F, G, J, K, M
331	330 pF	•	•	•	•	•	F, G, J, K, M
361	360 pF	•	•	•	•	•	F, G, J, K, M
391	390 pF	•	•	•	•	•	F, G, J, K, M
431	430 pF	•	•	•	•		F, G, J, K, M
471	470 pF	•	•	•	•		F, G, J, K, M
511	510 pF	•	•	•	•		F, G, J, K, M
561	560 pF	•	•	•			F, G, J, K, M
621	620 pF	•	•	•			F, G, J, K, M
751	750 pF	•	•	•			F, G, J, K, M
821	820 pF	•	•	•			F, G, J, K, M
911	910 pF	•	•	•			F, G, J, K, M
102	1000 pF	•	•	•			F, G, J, K, M
112	1100 pF	•	•				F, G, J, K, M
122	1200 pF	•	•				F, G, J, K, M
132	1300 pF	•	•				F, G, J, K, M
152	1500 pF	•	•				F, G, J, K, M
162	1600 pF	•	•				F, G, J, K, M
182	1800 pF	•	•				F, G, J, K, M
202	2000 pF	•	•				F, G, J, K, M
222	2200 pF	•	•				F, G, J, K, M
242	2400 pF	•	•				F, G, J, K, M
272	2700 pF	•	•				F, G, J, K, M
302	3000 pF	•	•				F, G, J, K, M
332	3300 pF	•	•				F, G, J, K, M

Notes

- Approved 200 °C range
- Approved 175 °C range
- Plastic carrier tape

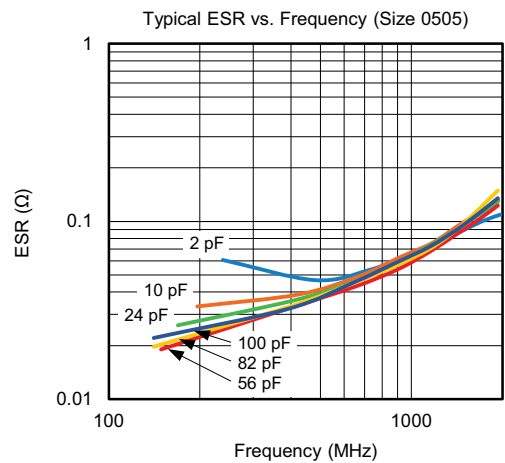
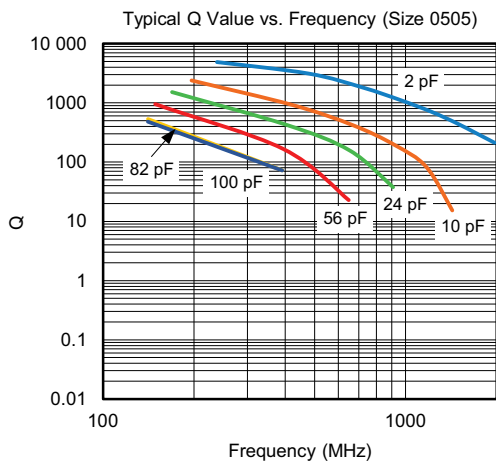
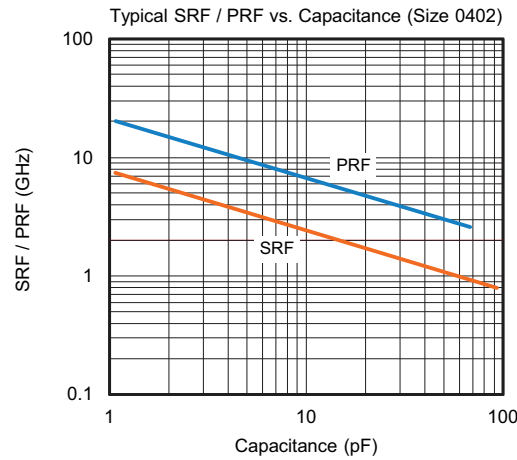
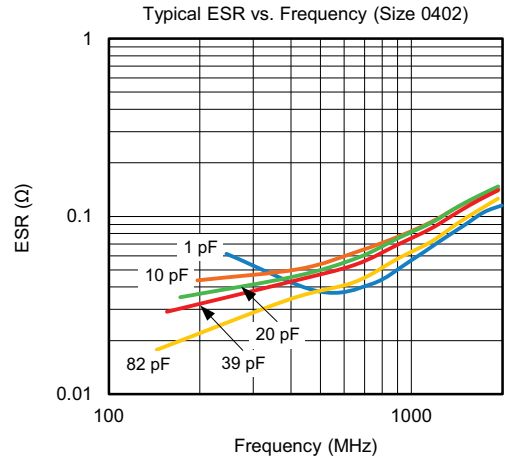
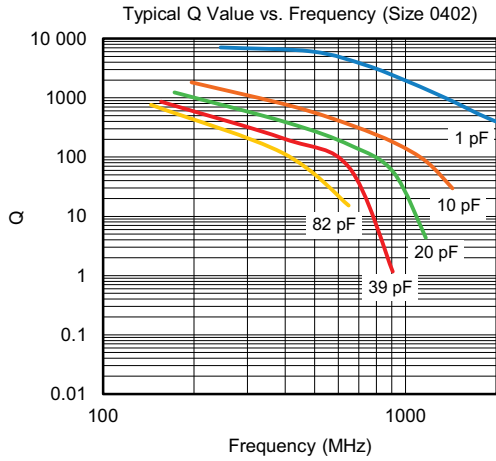


## HIGH FREQ HT DIELECTRIC - TYPICAL PARAMETERS



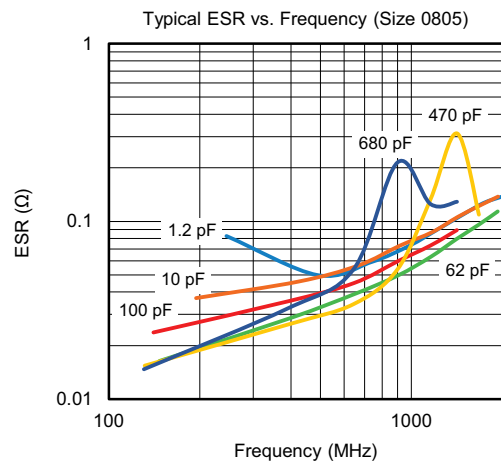
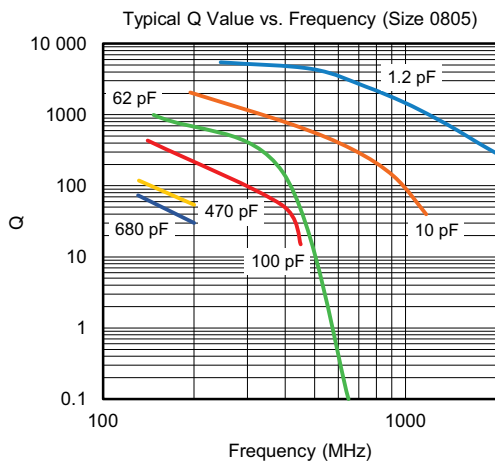
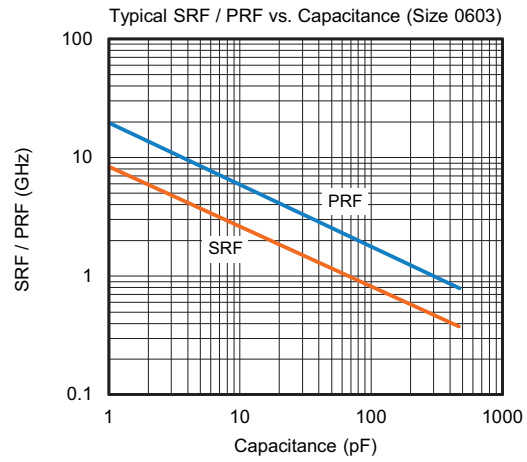
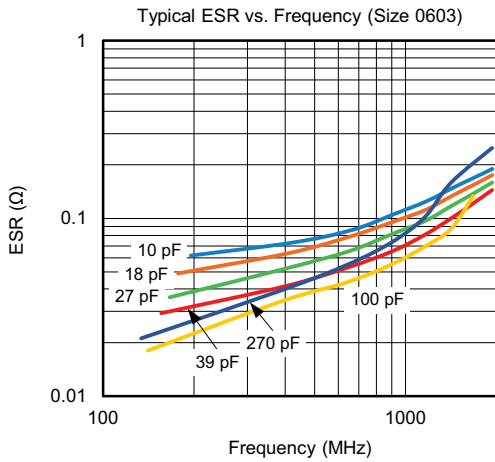
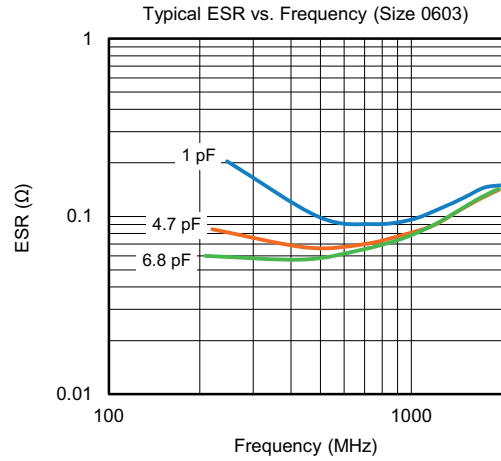
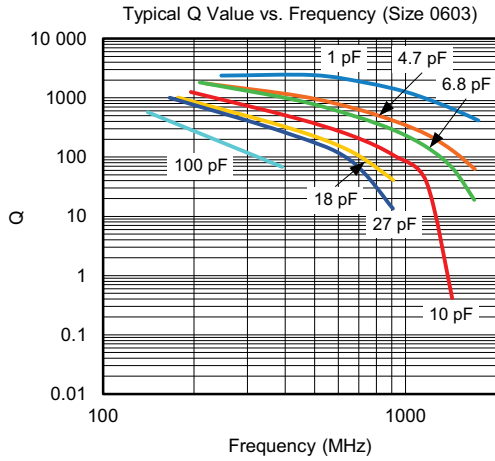


## HIGH FREQ HT DIELECTRIC - TYPICAL PARAMETERS



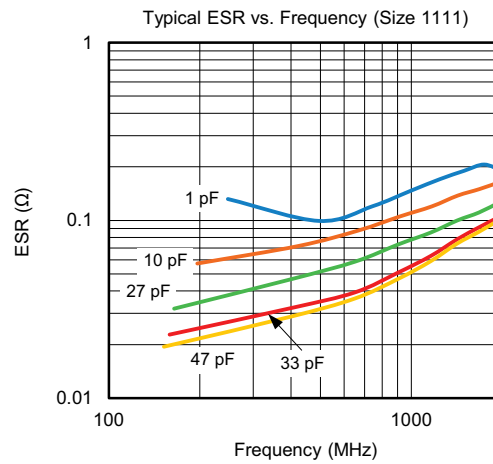
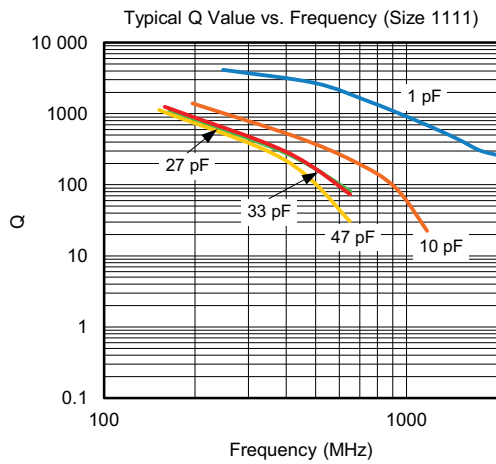
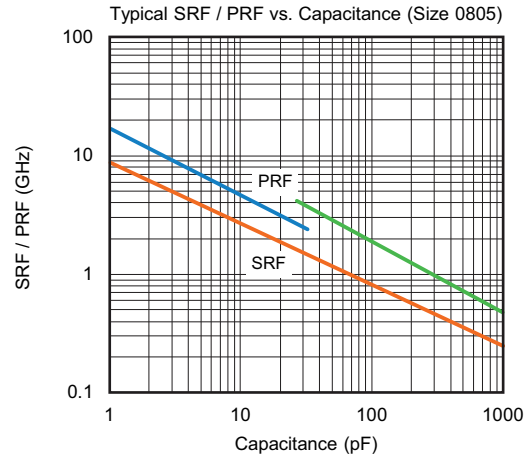


HIGH FREQ HT DIELECTRIC - TYPICAL PARAMETERS





## HIGH FREQ HT DIELECTRIC - TYPICAL PARAMETERS





STANDARD PACKAGING QUANTITIES (1)(2)(3)						
CASE CODE	TAPE SIZE	7" REEL QUANTITIES			11 1/4" AND 13" REEL QUANTITIES	
		PAPER TAPE PACKAGING CODE "C"	PLASTIC TAPE PACKAGING CODE "T"	LOW QUANTITY "J" (5)	PAPER TAPE PACKAGING CODE "P"	PLASTIC TAPE PACKAGING CODE "R"
0402	8 mm	5000	n/a	1000	10 000	n/a
0505	8 mm	n/a	3000	1000	n/a	10 000
0603 (4)	8 mm	4000	4000	1000	10 000	10 000
0805 (4)	8 mm	3000	3000	1000	10 000	10 000
1111	8 mm	n/a	2500	1000	n/a	9000

**Notes**

- (1) Vishay Vitramon uses embossed plastic carrier tape
- (2) REFERENCE: EIA standard RS 481 - "Taping of Surface Mount Components for Automatic Placement"
- (3) n/a = not available
- (4) Packaging "C" / "P" and "T" / "R" or lower quantities can depend from product thickness
- (5) Paper / plastic tape used by availability

STORAGE AND HANDLING CONDITIONS
<p>(1) Store the components at 5 °C to +40 °C ambient temperature and ≤ 70 % relative humidity conditions.</p> <p>(2) The product is recommended to be used within a time-frame of 2 years after shipment. Check solderability in case extended shelf life beyond the expiry date is needed.</p> <p>Precautions:</p> <ul style="list-style-type: none"> <li>a. Do not store products in an environment containing corrosive elements, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are present. This may cause corrosion or oxidization of the terminations, which can easily lead to poor soldering.</li> <li>b. Store products on the shelf and avoid exposure to moisture or dust.</li> <li>c. Do not expose products to excessive shock, vibration, direct sunlight and so on.</li> </ul>





## **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.