

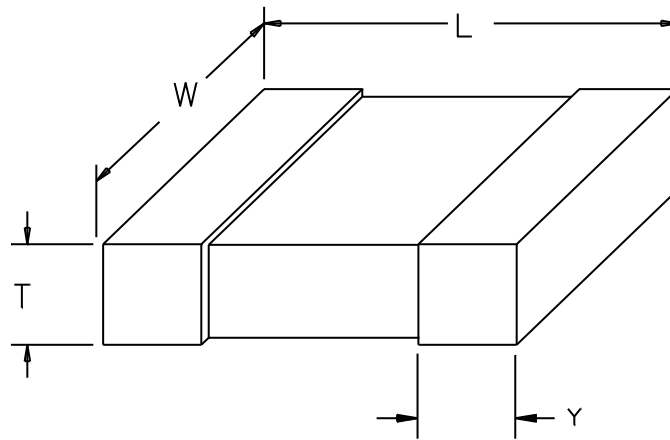
INCH-POUND  
MIL-PRF-32535/8  
28 September 2015

# PERFORMANCE SPECIFICATION SHEET

## CAPACITOR, CHIP, FIXED, CERAMIC DIELECTRIC (TEMPERATURE STABLE AND GENERAL PURPOSE), EXTENDED RANGE, HIGH RELIABILITY AND STANDARD RELIABILITY, SIZE 2220

This specification sheet is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and [MIL-PRF-32535](#).



Dimensions			
L	W	T	Y
$\pm .016$	$\pm .016$	Max.	$\pm .018$
.224	.197	.110	.025

inches	mm
.015	0.38
.016	0.41
.025	0.64
.110	2.79
.197	5.00
.224	5.69

### NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Dimensions and tolerances are for terminated chips.
4. For solder termination finishes, add .025 inch (0.64 mm) to the positive length tolerance and .015 inch (0.38 mm) to the positive width and thickness tolerances. The increase in dimension applies to the solder coating thickness only.

FIGURE 1. Size 2220 capacitors.



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## REQUIREMENTS:

Dimensions and configuration: See [figure 1](#).

Capacitance value: See table I.

Capacitance tolerance: See table I.

Rated voltage ( $V_{dc}$ ): V = 4; W = 6.3; X = 10; Y = 16; Z = 25; A = 50; B = 100; C = 200. See table I for maximum rated voltage available for each capacitance value.

Operating temperature range: -55°C to +125°C.

Termination finish: D, G, M, R, V, and Z as specified in [MIL-PRF-32535](#).

Electrode: P and B as specified in [MIL-PRF-32535](#).

Product level designator: Standard reliability – M and high reliability - T.

Marking: In accordance with [MIL-PRF-32535](#).

TABLE I. Size 2220 capacitor characteristics.

Part or Identifying Number (PIN) <a href="#">1/</a>	Capacitance (pF)	Capacitance tolerance	VTL/TC	Rated voltage <a href="#">2/</a> ( $V_{dc}$ )	Electrode material
M3253508 --- 102 ----	1,000	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 122 ----	1,200	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 152 ----	1,500	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 182 ----	1,800	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 222 ----	2,200	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 272 ----	2,700	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 332 ----	3,300	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 392 ----	3,900	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 472 ----	4,700	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 562 ----	5,600	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 682 ----	6,800	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 822 ----	8,200	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 103 ----	10,000	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 123 ----	12,000	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 153 ----	15,000	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 183 ----	18,000	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 223 ----	22,000	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 273 ----	27,000	F, G, J, K	BP, C0G	200	P, B
M3253508 --- 333 ----	33,000	F, G, J, K	BP, C0G	100	P, B
M3253508 --- 393 ----	39,000	F, G, J, K	BP, C0G	100	P, B
M3253508 --- 473 ----	47,000	F, G, J, K	BP, C0G	100	P, B
M3253508 --- 563 ----	56,000	F, G, J, K	BP, C0G	100	P, B
M3253508 --- 683 ----	68,000	F, G, J, K	BP, C0G	100	P, B
M3253508 --- 823 ----	82,000	F, G, J, K	BP, C0G	100	P, B
M3253508 --- 104 ----	100,000	F, G, J, K	BP, C0G	100	P, B
M3253508 --- 124 ----	120,000	F, G, J, K	BP, C0G	50	P, B
M3253508 --- 154 ----	150,000	F, G, J, K	BP, C0G	50	P, B
M3253508 --- 184 ----	180,000	F, G, J, K	BP, C0G	25	P, B

[See footnotes at end of table.](#)

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TABLE I. Size 2220 capacitor characteristics - Continued.

Part or Identifying Number (PIN) <u>1/</u>	Capacitance (pF)	Capacitance tolerance	VTL/TC	Rated voltage <u>2/</u> (V <sub>dc</sub> )	Electrode material
M3253508E2 - 104 ----	100,000	K, M	X7R	100	P, B
M3253508E2 - 154 ----	150,000	K, M	X7R	100	P, B
M3253507E2 - 184 ----	180,000	K, M	X7R	100	P, B
M3253507E2 - 224 ----	220,000	K, M	X7R	100	P, B
M3253507E2 - 274 ----	270,000	K, M	X7R	100	P, B
M3253507E2 - 334 ----	330,000	K, M	X7R	100	P, B
M3253507E2 - 394 ----	390,000	K, M	X7R	100	P, B
M3253507E2 - 474 ----	470,000	K, M	X7R	100	P, B
M3253507E2 - 564 ----	560,000	K, M	X7R	100	P, B
M3253507E2 - 684 ----	680,000	K, M	X7R	100	P, B
M3253507E2 - 824 ----	820,000	K, M	X7R	100	P, B
M3253507E2 - 105 ----	1,000,000	K, M	X7R	100	P, B
M3253507E2 - 125 ----	1,200,000	K, M	X7R	100	P, B
M3253507E2 - 155 ----	1,500,000	K, M	X7R	100	P, B
M3253507E2 - 185 ----	1,800,000	K, M	X7R	100	P, B
M3253507E2 - 225 ----	2,200,000	K, M	X7R	100	P, B
M3253507E2 - 275 ----	2,700,000	K, M	X7R	100	P, B
M3253507E2 - 335 ----	3,300,000	K, M	X7R	100	P, B
M3253507E2 - 395 ----	3,900,000	K, M	X7R	100	P, B
M3253507E2 - 475 ----	4,700,000	K, M	X7R	50	P, B
M3253507E2 - 565 ----	5,600,000	K, M	X7R	50	P, B
M3253507E2 - 685 ----	6,800,000	K, M	X7R	50	P, B
M3253507E2 - 825 ----	8,200,000	K, M	X7R	50	P, B
M3253507E2 - 106 ----	10,000,000	K, M	X7R	50	P, B
M3253507E2 - 126 ----	12,000,000	K, M	X7R	25	P, B
M3253507E2 - 156 ----	15,000,000	K, M	X7R	25	P, B
M3253507E2 - 186 ----	18,000,000	K, M	X7R	25	P, B

1/ The complete PIN shall include additional symbols to indicate VTL/TC (where applicable), voltage, capacitance tolerance, termination finish, product level, and electrode material.

2/ This is the maximum rated voltage available. All lower voltage ratings are also available.

Custodians:  
 Army – CR  
 Navy - EC  
 Air Force – 85  
 DLA - CC

Preparing activity:  
 DLA - CC

(Project 5910-2015-023)

Review activities:  
 Army - MI  
 Navy - AS, MC, OS, SH  
 Air Force - 19, 99  
 Other – MDA, NA

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.