



DEFENSE LOGISTICS AGENCY
LAND AND MARITIME
P.O. BOX 3990
COLUMBUS, OHIO 43218-3990

August 19, 2025

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Engineering Practices Study: [MIL-PRF-32535](#) Dissipation Factor Requirements.

Project number: 5910-2025-034.

An initial draft of the subject document is now available for viewing and downloading from the DLA Land and Maritime - VA website:

<https://landandmaritimeapps.dla.mil/Programs/MilSpec/initialdrafts.aspx>

An engineering practices study is being conducted to solicit feedback from ceramic capacitor manufacturers and users regarding the dissipation factor (DF) requirement in [MIL-PRF-32535](#) (Capacitor, Chip, Fixed, Ceramic Dielectric (Temperature Stable and General Purpose), Extended Range, High Reliability and Standard Reliability, General Specification for).

Concurrence or comments are required at this Center no later than **22 September 2025**. If comments are not received during the allotted coordination period, concurrence may be assumed. Late comments may be held for the next specification action. Comments from military departments must be identified as either "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians of this office, as applicable, in sufficient time to allow for consolidating the department reply. Since Navy – EC is a custodian for this document; all Navy review activities should forward their comments directly to this Center.

The point of contact for this project is Mr. John Bonitatibus, DLA Land and Maritime - VAT, Post Office Box 3990, Columbus, OH 43218-3990. The preferred method of contact is via email. John can be reached at john.bonitatibus@dla.mil or 614-692-4709/DSN 850-4709.

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Mark Rush
Chief (Acting)
Electronic Components Branch

ENGINEERING PRACTICE STUDY

TITLE: [MIL-PRF-32535](#) DISSIPATION FACTOR REQUIREMENTS

DRAFT

PRELIMINARY

Study Conducted by DLA Land and Maritime

Project Number: 5910-2025-034

Prepared by:

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John A. Bonitatibus
Electronics Engineer
Electronic Components Branch

I. OBJECTIVE: An engineering practices study is being conducted to solicit feedback from ceramic capacitor manufacturers and users regarding the dissipation factor (DF) requirement in [MIL-PRF-32535](#) (Capacitor, Chip, Fixed, Ceramic Dielectric (Temperature Stable and General Purpose), Extended Range, High Reliability and Standard Reliability, General Specification for).

II. BACKGROUND: A qualified manufacturer is requesting a change to the DF requirement in [MIL-PRF-32535](#). The current DF requirement in [MIL-PRF-32535](#) is specified in paragraph 3.11 and table VII as follows:

3.11 Dissipation factor (DF). When determined in accordance with 4.6.7, the dissipation factor shall not exceed the value specified in table VII.

TABLE VII. *Dissipation factor limits.*

Characteristic	Maximum allowable DF (%)					
	Rated Voltage (V_{dc})					
	4	6.3	10	16	25	≥ 50
<i>Class II</i>	7.5	7.5	5.0	3.5	3.5	2.5
<i>BP, COG (≥ 10 pf)</i>	0.15	0.15	0.15	0.15	0.15	0.15
<i>BP, COG (< 10 pf)</i>	0.25	0.25	0.25	0.25	0.25	0.25
<i>BG (≥ 10 pf)</i>	0.05	0.05	0.05	0.05	0.05	0.05
<i>BG (< 10 pf)</i>	0.15	0.15	0.15	0.15	0.15	0.15

The manufacturer is proposing the addition of a column for ≥ 100 volt rated parts and increasing the DF limit for Class II 16, 25, 50, and ≥ 100 volt rated capacitors to 5.0, 5.0, 3.5, and 3.0 percent, respectively. The revised table would appear as follows:

Characteristic	Maximum allowable DF (%)						
	Rated Voltage (V_{dc})						
	4	6.3	10	16	25	50	≥ 100
<i>Class II</i>	7.5	7.5	5.0	5.0	5.0	3.5	3.0
<i>BP, COG (≥ 10 pf)</i>	0.15	0.15	0.15	0.15	0.15	0.15	0.15
<i>BP, COG (< 10 pf)</i>	0.25	0.25	0.25	0.25	0.25	0.25	0.25
<i>BG (≥ 10 pf)</i>	0.05	0.05	0.05	0.05	0.05	0.05	0.05
<i>BG (< 10 pf)</i>	0.15	0.15	0.15	0.15	0.15	0.15	0.15

The manufacturer believes that relaxing the current DF limits in [MIL-PRF-32535](#) would allow for the development of capacitors with improved volumetric efficiency, a desirable feature for users. The manufacturer suggests that the current limits are overly stringent compared to equivalent automotive-grade or commercial parts and that increasing these limits would not compromise the capacitor's ability to meet the overall requirements of [MIL-PRF-32535](#).

III. RESULTS: Recipients of this study are requested to provide concurrence, objection, or comments regarding the proposal to change the DF requirement in [MIL-PRF-32535](#) to john.bonitatibus@dla.mil. Resulting coordinated comments will provide the basis for revising [MIL-PRF-32535](#). Comments regarding this study shall be submitted to DLA Land and Maritime within 30 days of this letter.

IV. CONCLUSIONS: The final comments regarding this study will be published in a final report once all comments have been resolved.

V. RECOMMENDATIONS: DLA Land and Maritime recommends that all military and industry representatives review the material herein and provide concurrence, objection, or comments to the proposal above.