

ENGINEERING PRACTICE STUDY

TITLE: SURGE CURRENT TESTING SUBSTITUTABILITY IN [MIL-PRF-55365](#)

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FINAL REPORT

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I. **OBJECTIVE:** This engineering practices study was conducted at the request of the G-11 Component Parts Committee to determine if qualified manufacturers to MIL-PRF-55365 should be permitted to make surge current testing substitutions without seeking the approval of the acquiring activity.

II. **BACKGROUND:** The surge current testing options for MIL-PRF-55365 are specified as follows:

1.2.1.7 Surge current option. The optional surge current tests are described in table IV. This table reflects the required test temperature(s) as well as whether the surge current test is to be performed before or after the Weibull grading/voltage aging test. The surge current option is identified by a single letter.

TABLE IV. Optional surge current testing.

Option letter	Temperatures	Weibull		Exponential	
		Before Weibull grading (Life accelerated FR)	After Weibull grading (Life accelerated FR)	Before voltage aging	After voltage aging
A	(+25°C ± 5°C)	N/A	X	N/A	X
B	(-55°C -5°C, +0°C and +85°C ±5°C)	N/A	X	N/A	X
C	(-55°C -5°C, +0°C and +85°C ±5°C)	X	N/A	X	N/A
Z 1/	No surge current test	N/A	N/A	N/A	N/A

1/ Not applicable to MIL-PRF-55365/4 and MIL-PRF-55365/8. When no surge current testing is required for MIL-PRF-55365/4 and MIL-PRF-55365/8 product, no letter is included.

It is generally accepted that performing surge current testing is preferable to not performing the testing and that surge current testing option C is preferable to option B which is preferable to option A. Therefore, surge current testing substitutions are currently permitted, **with acquiring activity approval**, in accordance with the following:

3.28 Surge current code substitutability. Surge current codes may be substituted for other surge current codes, with initial acquiring agency or company approval, in the following manner:

<u>Surge current code</u>	<u>May be substituted for surge current code</u>
C	A, B, Z (or no code)
B	A, Z (or no code)
A	Z (or no code)

A proposal to allow substitutions without contacting the acquiring activity is being considered. If accepted, the substitutability requirement would be revised as follows:

3.28 Surge current code substitutability. At the option of the manufacturer, surge current testing codes may be substituted for other surge current testing codes as shown below. Unless otherwise specified in the contract or order (see 6.2), the substitutable parts shall not be remarked:

<u>Surge current code</u>	<u>May be substituted for surge current code</u>
C	A, B, Z (or no code)
B	A, Z (or no code)
A	Z (or no code)

III. **RESULTS:** Recipients of the study were asked to share their thoughts regarding this proposal to allow qualified manufacturers to make surge current testing substitutions without seeking the approval of the acquiring activity. All of the responses from manufacturers and users concurred with the proposal. There were no objections.

IV. **CONCLUSIONS:** Manufacturers and users of MIL-PRF-55365 capacitors feel that it would be beneficial to allow qualified manufacturers to make surge current testing substitutions without seeking the approval of the acquiring activity.

V. **RECOMMENDATIONS:** Add the proposed wording to allow qualified manufacturers to make surge current testing substitutions without seeking the approval of the acquiring activity to the 2nd initial draft of MIL-PRF-55365J.