



DEFENSE LOGISTICS AGENCY
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IN REPLY
REFER TO

DSCC-VAT

11 December 2007

MEMORANDUM FOR VSS

SUBJECT: Engineering Practice (EP) Study: Recommended replacements of MIL-PRF-55182 resistors, due to the loss of the QPL sole source supplier.
Project Number: 5905-2008-028.

Findings and recommendations on Engineering Practices Study, dated 11 December 2007, and attachments are enclosed.

It is requested that your office take the necessary electronic action to reflect completion of these projects.

Any questions can be directed to Andrew R. Ernst via email at Andrew.Ernst@dla.mil or by phone at DSN 850-0552.

SIGNED

Michael Radecki
Chief
Electronic Components Team

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ENGINEERING PRACTICE STUDY
TITLE: RECOMMENDED REPLACEMENTS OF MIL-PRF-55182 RESISTORS,
DUE TO THE LOST OF THE QPL SOLE SOURCE SUPPLIER

11 December 2007

STUDY PROJECTS (SEE ATTACHMENT 1)

FINAL REPORT

Prepared by:

Andrew Ernst

ENGINEERING PRACTICE STUDY

Recommended replacements of MIL-PRF-55182 resistors,
due to the lost of a QPL sole source supplier.

11 December 2007

Project 5905-2008-028

I. OBJECTIVES: The objective of this EPS study was to research effects of the lost of the International Resistor Company (IRC), a division of TT Electronics, out of Boone, NC, as a Qualified Product List (QPL) supplier to the MIL-PRF-55182 resistor, and what replacement the Department of Defense could use where IRC was a sole source supplier.

II. BACKGROUND: IRC has been on the QPL for over forty years, and as of October 3 2007, they have decided to drop off the QPL for the MIL-PRF-55182 resistor. This decision was based on the lack of sales they have been receiving and the line has become no longer feasible for them to maintain the qualification. Their intent is to complete all parts on test and maintain S failure rate with product on test through the balance of 2008.

MIL-PRF-55182 is made up ten different styles, three of these styles are affect by IRC decision (see table I), each of these styles has three different termination types (see table II), five different characteristics (see table III), numerous resistance values, three resistance tolerances, and six different product levels

Table I. MIL-PRF-55182 styles.

MIL-PRF-55182/1	Resistors, Fixed, Film, Non-Established Reliability, Established Reliability, and Space Level, Style RN*55. 1/
MIL-PRF-55182/3	Resistors, Fixed, Film, Non-Established Reliability, Established Reliability, and Space Level, Style RN*60. 1/
MIL-PRF-55182/7	Resistors, Fixed, Film, Non-Established Reliability, Established Reliability, and Space Level, Style RN*50. 1/
1/ Third letter is variable, dependent upon lead material or capability.	

Table II. Terminal type

Symbol	Terminal
RNR	Solderable (type C41, C52, N22, or N52 of MIL-STD-1276)
RNC	Solderable/weldable (type C41, C32, or C52 of MIL-STD-1276)
RNN	Weldable (type N22 of MIL-STD-1276)

TABLE III. Characteristic.

Hermetically sealed	Nonhermetically sealed	Resistance temperature characteristics (referenced +25°C)
C	H	±50
E	J	±25
	K	±100

III. **RESULTS:** From the QPL-55182-158 it was found that IRC is sole source on the following MIL-PRF-55182 resistors.

RNN50, Characteristic H, J, and K
 RNN55, Characteristic H, J, and K
 RNN60, Characteristic H, J, and K
 RNR60, Characteristic H, J, and K

(The terminal types and characteristics are the PIN designators that are affected the most by the lost of IRC as a supplier of this specification).

IV. **CONCLUSIONS:** The lost of IRC makes MIL-PRF-55182 sole source specification (except RNC90) for all styles, terminations, characteristics, and four terminal types with no source at all. A NSN search was ran on the four terminal types, and no NSN were found.

V. **RECOMMENDATIONS:** DSCC recommends that for the resistors that IRC were sole source on the following resistors are used.

IRC sole source resistors	DSCC first recommend replacement	DSCC second recommend replacement
RNN50, Char. H, J, K	RNC50, Char. H, J, K	N/A
RNN55, Char. H, J, K	RNC55, Char. H, J, K	RNN55, Char. C, E
RNN60, Char. H, J, K	RNC60, Char. H, J, K	RNN60, Char. C, E
RNR60, Char. H, J, K	RNC60, Char. H, J, K <u>1/</u>	N/A

1/ Per paragraph 3.33.7 of MIL-PRF-55182H – Amendment 2 the RNR style and RNC style are interchangeable with procuring activity approval.

Specification actions that will take place in MIL-PRF-55182 – Amendment 3:

1. Table I, Symbol column; RNN will be marked with a note 4/. Note 4/ will read “Terminal type RNN is inactive for new design for characteristics H, J, and K only. Terminal type RNN remains active for characteristics C and E. (see 6.5.1).
2. New paragraph 6.5.1; RNN terminal substitution. Due to the lost of the RNN, characteristic H, J and K’s source of supply, it is recommend that the RNC part for the same characteristic, resistance value, tolerance and product level be used.