



DEFENSE LOGISTICS AGENCY
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DLA LAND AND MARITIME-VAI

May 23, 2022

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Final draft of MIL-DTL-32139 Engineering Practice Study (see enclosed table for details)

Document Number	Action Taken	Complete Title	Spec-Finder (Y/N)	Reason Code	Project Number
MIL-DTL-32139/14	EPS	Connectors, Electrical, Rectangular, Nanominiature, Dual Row, Receptacle, Polarized Shell, Socket Contacts, Horizontal PCB Through-Hole Type	N	VEN	5935-2022-083

The subject not stabilized, QPL document(s), has been dated 16 May 2022. Copies of this document(s) may be downloaded from the DLA Land and Maritime Web site:

<https://landandmaritimeapps.dla.mil/programs/milspec/DocSearch.aspx>

If you do not have access to the internet, or you have problems downloading the document, printed copies may be obtained from Ed Wypasek at (614) 692-0530, facsimile transmission (614) 692-6939, or by e-mail edmund.wypasek@dlamail.

Sincerely,

/SIGNED/

ABDONASSER M. ABDOUNI
Chief,
Interconnection Branch

cc:
FMTD (Dave Barman)

FINAL REPORT

ENGINEERING PRACTICE STUDY

MIL-DTL-32139/13/14

CONNECTORS, ELECTRICAL, RECTANGULAR,
NANOMINIATURE, DUAL ROW, PLUG, RECEPTACLE, POLARIZED
SHELL, PIN, SOCKET CONTACTS, HORIZONTAL PCB THROUGH-
HOLE TYPE

PROJECT NUMBER: 5935-2022-083

16 May 2022

Prepared by:
Project officer
Ed Wypasek
Rectangular connectors
DLA Land and Maritime-VAI

ENGINEERING PRACTICE STUDY MIL-DTL-32139/13/14

Objective: The purpose of this Engineering Practice Study (EPS) is for a proposed change to the current MIL-DTL-32139/14 receptacle connector 85 position PCB mounting hole's location to align with the MIL-DTL-32139/13 plug connector 85 position PCB mounting hole's location.

Background: Before the 85 position all the other sizes (9-69) were made to be a drop in replacement between plug and receptacles regarding the pad layout and mounting holes. When the 85 position expansion was introduced to the right angle thru hole (and right angle surface mount) connectors, the plug shell had to grow in depth to accommodate the #2-56 jacking stainless steel insert and #2-56 mounting hole (significantly preferred for this higher contact count connector). The MIL-DTL-32139/14 receptacle shell being deeper, was able to locate the mounting hole in the same spot.

To place the mounting hole on the M32139/14 receptacle to achieve the same lead row to mounting hole spacing would mean adding .057 to the depth of the shell. Increasing the .344 dimension to .401 on the 85 position only.

Nano connectors are normally chosen over other connectors because of space and weight. Adding the .057 to the depth increases both the weight and the physical footprint of the receptacle for the only consideration of being able to interchange plugs and receptacles on the same PCB layout.

Proposal: A: The first proposal is to match the 85 position PCB mounting holes of the M32139/14 with the 85 position of the M32139/13.

If there was an error in mounting the incorrect gender, this would require a new PCB replacement. Same dimension mounting holes would only require a correction on the pinout of the mating connector. To be consistent with the other slash sheets that have matching male to female hole patterns.

Proposal B: The second proposal is to leave the dimensions as shown in the current specifications of M32139/13/14.

Choosing reduced weight and physical footprint of M32139/14, over the ability to change genders on the 85 position PCB layout. The 85 position was driven by customer demand of the current design.

Results: The following comments were received from the industry:

Glenair - Glenair recommends retaining the existing M32139/14 dimensions for size 85.

ENGINEERING PRACTICE STUDY
MIL-DTL-32139/13/14

Omnetics - Omnetics' preference in regards to the M32139/13/14 memo is Proposal B as we favor smaller/lighter designs and already have this existing design and associated manufacturing tools.

Air Force – AF-85 has reviewed and concurs with the document changes.

Army – (Army CR) Summary, no comments at this time.

Conclusion: DLA Land and Maritime has reviewed comments received on this EPS. There will be no changes to the PCB design layout for the MIL-DTL-32139/14. The proposal B will be retained without any changes.

If there are any questions, please contact Mr. Ed Wypasek, 614-692-0530, E-mail edmund.wypasek@dla.mil, DLA Land and Maritime-VAI, P.O. Box 3990, Columbus, OH 43218-3990.