

INCH-POUND

MIL-M-38527D  
 6 Nov 1992  
 SUPERSEDING  
 MIL-M-38527C  
 7 September 1984

## MILITARY SPECIFICATION

Mounting Pads, Electrical-Electronic Component,  
 General Specification For

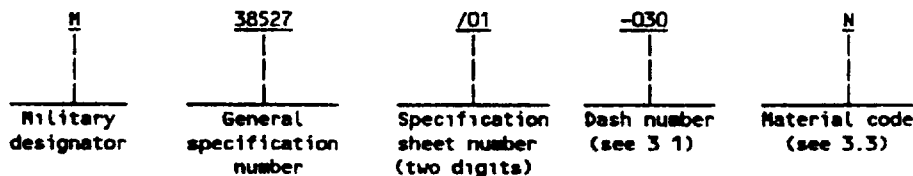
This specification is approved for use by all Departments and Agencies of the Department of Defense

## 1. SCOPE

1.1 Scope. This specification covers the general requirements for mounting pads intended for use with small electrical and electronic devices. Supplement 1 to this specification contains a listing of specification sheets, basic dimensions, and commercial cross-reference Part or Identifying Numbers (PIN's).

1.2 Classification.

1.2.1 PIN. The PIN format shall be as shown in the following example



NOTE: Specification sheet 11 contains a PIN format different from that shown (see 3.1)

## 2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to 2750 LOG/ES, Gentile Station, 1060 Hamilton St, Dayton, OH 45444-5400 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

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## SPECIFICATIONS

## MILITARY

MIL-M-14	- Molding Compounds, Thermosetting
MIL-S-19491	- Semiconductor Devices, Packaging of
MIL-P-46112	- Plastic Sheet and Strip, Polyimide
MIL-P-46161	- Plastic Molding Material, Polyterephthalate Thermoplastic, Glass Fiber Reinforced.
MIL-I-49466	- Insulator, Disks, Plates, and Washers, General Specification for.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2)

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D1710	- Rod, Fluorocarbon, TFE.
ASTM D4066	- Standard Specification for Nylon Injection and Extrusion Materials (PA)
ASTM D4067	- Standard Specification for Reinforced and Filled Polyphenylene Sulfide (PPS) Injection Molding and Extrusion Materials.
ASTM D4181	- Standard Specification for Acetal (POM) Molding and Extrusion Materials.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

## SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

AMS 3320	- Silicone Rubber Sheet, Glass Cloth Reinforced Heat and Weather Resistant
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(Application for copies should be addressed to the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

## 3 REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheets. In the event of a conflict between the requirements of this specification and the specification sheets, the latter shall govern.

3.2 Quality conformance inspection. Pads shall be products which have been inspected and have passed the quality conformance inspection (see 4.4).

3.3 Materials. Materials shall be as specified in table 1.

3.4 Design, construction, and dimensions. Design, construction, and dimensions shall be as specified herein and on the specification sheets (see 3.1).

3.4.1 Color. Unless otherwise specified in the acquisition document, the color of the pads is optional at the discretion of the manufacturer. Exception. Nylon (type N) pads shall not be black.

3.4.2 Feet. Unless otherwise specified in 3.1, feet shape may be either cylindrical or spherical at the option of the manufacturer.

3.4.3 Gate protrusion. Gate protrusion (filling point of mold) shall not exceed 0.010 inch (0.25 mm) over the maximum outside diameter of the pad.

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TABLE I. Materials

Material code (see 1.2.1)	Material	Reference specification	Applicable specification sheets MIL-M-38527/
A	Acetal, plastic molding	ASTM D4181	11
C	Polybenzophenone thermoplastic, grade B, class 30	MIL-P-46161 1/	6, 11
D	Diallyl phthalate (DAP), type SDG	MIL-M-14	1, 2, 3, 4, 5, 6, 7, 10
G	Polyimide reinforced with glass cloth	MIL-P-46112	8 2/
N	Nylon	ASTM D4066 group I or II	1, 2, 3, 4, 5, 6, 7, 10
P	Polyimide	MIL-P-46112	8 2/
R	Silicone rubber reinforced with glass cloth	AMS 3320	8 2/
S	Polyphenylene sulfide, class 40, grade E	ASTM D4067	5, 9 2/
T	Polytetrafluoroethylene	ASTM D1710	9 2/

1/ Reference to color in MIL-P-46161 does not apply See 3 4 1 herein

2/ Specification sheets MIL-M-38527/8 and MIL-M-38527/9 are inactive for new design. For new designs use MIL-I-49466 (see 6.4).

3.4.4 Through-hole flash. For all materials except "D", flash ring shall not extend into any through-hole more than .005 inch (0.13 mm). Maximum flash ring for "D" material shall be .002 inch (0.05 mm).

3.4.5 Through-hole countersink. Unless otherwise specified in the acquisition document, a countersink is optional at the discretion of the manufacturer. If provided, the dimensions of the countersink shall be as specified in 3 1

3.5 Pad marking. Pads need not be marked. Package marking shall be in accordance with 5.3.

3.6 Workmanship. Pads shall be processed in such a manner as to be uniform in quality and shall be free from surface flaws and other defects that could affect the life or serviceability of the pads.

#### 4 QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements

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4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspections set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements; however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. Materials inspection (see 4.3)
- b. Quality conformance inspection (see 4.4).

4.3 Materials inspection. The materials inspection shall consist of certification, supported by verifying data, that materials are in accordance with the specifications referenced in 3.3

4.4 Quality conformance inspection

4.4.1 Inspection of product for delivery. The inspection of product for delivery shall consist of the examinations specified in 4.5

4.4.1.1 Inspection lot. An inspection lot shall consist of all pads of the same PIN produced from the same type and batch of material, under essentially the same conditions, and offered for inspection at one time.

4.4.1.2 Sampling plan. A sample of parts shall be randomly selected in accordance with table II. If one or more defects are found, the lot shall be rescreened and the defective parts removed. A new sample of parts shall then be randomly selected in accordance with table II. If one or more defects are found in the second sample, the lot shall be rejected and shall not be supplied to this specification

TABLE II. Sampling plan. 1/

Lot size	Sample size
2 to 8	All
9 to 90	8
91 to 150	12
151 to 280	19
281 to 500	21
501 to 1,200	27
1,201 to 3,200	35
3,201 to 10,000	38
10,001 to 35,000	46
35,001 to 150,000	56
150,001 and over	64

1/ The acceptance number in all cases is zero.

4.5 Visual and dimensional inspection. Pads shall be examined to verify that the design, construction, physical dimensions, and workmanship are in accordance with the applicable requirements (see 3.1, 3.4, and 3.6)

## 5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-S-19491

5.2 Unit packs. Mounting pads sold directly to the Government shall be supplied in unit packs of five. For commercial shipments, standard commercial bulk packaging applies, unless otherwise specified in the acquisition document (see 6.2).

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5.3 Package marking. Packages shall be marked in accordance with MIL-STD-129. In addition, the lot date code shall be included.

## 6 NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Pads covered by this specification are intended to be used for the mounting and spacing of electronic components such as transistors, capacitors, resistors, and integrated circuits.

6.2 Acquisition data. Acquisition documents should specify the following, as a minimum:

- a. Title, number, and date of this specification.
- b. Complete PIN (see 1.2.1).
- c. Color, if other than specified (see 3.4.1).
- d. Unit pack quantity (if other than standard bulk packaging; see 5.2).
- e. Certification of compliance to material specification (see 4.3).

6.3 Subject term (key word listing)

Mounting device  
Retainer  
Spacer

6.4 Supersession information.

- a. PIN's used in MIL-M-38527, dated 11 February 1974, have been superseded and are now covered by the specification sheets. Future acquisitions should be to the new PIN's (see table III).

TABLE III. Supersession information

Superseded (old) PIN M38527	Superseded (new) PIN M38527/
-01	01-030
-02	01-031
-03	03-011
-04	02-010
-05	02-040
-06	02-001
-07	02-002
-08	04-001
-09	04-002
-10	04-004

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b MIL-M-38527/8 is inactive for new design, and is superseded by MIL-I-49466/1 and MIL-I-49466/2 as follows (Federal Stock Class 5970)

Superseded PIN M38527/08-	New Superseding PIN M49466/1-	Superseded PIN M38527/08-	New Superseding PIN M49466/01-	Superseded PIN M38527/08-	New Superseding PIN M49466/01-
001P	001P	030P	030P	079P	077P
002P	002P	031P	031P	080P	078P
003P	003P	032P	032P	081P	079P
004P	004P	050P	040P	082P	080P
005P	005P	051P	041P	083P	081P
006P	006P	060P	042P	084P	082P
007P	007P	061P	043P	085P	083P
008P	008P	055P	044P	086P	084P
009P	009P	056P	045P	087P	085P
010P	010P	040P	050P	088P	086P
011P	011P	041P	051P	089P	087P
012P	012P	042P	052P	090P	088P
013P	013P	043P	053P	091P	089P
014P	014P	062P	060P	092P	090P
015P	015P	063P	061P	093P	091P
016P	016P	064P	062P	094P	092P
017P	017P	065P	063P	095P	093P
018P	018P	066P	064P	096P	094P
019P	019P	067P	065P	097P	095P
020P	020P	068P	066P	098G	003R
021P	021P	069P	067P	099R	009R
022P	022P	070P	068P	100G	016R
023P	023P	071P	069P	101G	019R
024P	024P	072P	070P	102R	029R
025P	025P	073P	071P	103G	026R
026P	026P	074P	072P	103R	026R
027P	027P	075P	073P	104G	006R
028P	028P	076P	074P	105R	026R
029P	029P	077P	075P	106R	067R
		078P	076P	108R	011R

CAUTION: This supersession information is valid as of the date of revision D of this specification and may be superseded by future revisions of MIL-I-49466/1 or MIL-I-49466/2

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- c. MIL-M-38527/9 is inactive for new design, and is superseded by MIL-I-49466/3 as follows (Federal Stock Class 5970):

Superseded PIN M38527/09-	New superseding PIN M49466/03-	Superseded PIN M38527/09-	New superseding PIN M49466/03-	Superseded PIN M38527/09-	New superseding PIN M49466/03-
001S	001S	004S	004S	010T	010T
002S	002S	005S	005S	011T	011T
003S	003S	006S	006S	---	---

NOTE. This supersession information is valid as of the date of revision D of this specification and may be superseded by future revisions of MIL-I-49466/3

6.5 Changes from previous issue Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes

## CONCLUDING MATERIAL

## Custodians:

Army - ER  
Navy - EC  
Air Force - 85

## Review activities:

Air Force - 19, 99  
DLA - ES

## User activities:

Navy - AS, CG, MC, SH

Preparing activity:  
Air Force - 85

Agent:  
DLA - ES

(Project 5999-0293)

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

**NOTE** This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

<b>RECOMMEND A CHANGE:</b>	1 DOCUMENT NUMBER <i>MIL-M-38527D</i>	2 DOCUMENT DATE (YYMMDD)
3. DOCUMENT TITLE <i>Mounting Pads, Electrical-Electronic Component, General Specification For</i>		
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed)		
5. REASON FOR RECOMMENDATION		
[REDACTED SECTION]		
8. PREPARING ACTIVITY		
a NAME <i>2750 LOG/ES</i>	b TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON <i>(513) 296-5517</i> <i>986-5517</i>	
c ADDRESS (Include Zip Code) <i>Gentile Station 1060 Hamilton Street Dauton, OH 45444-5400</i>	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	