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FAQ – DLA Standard Microcircuit Drawings (SMD) and JAN Part Numbers

For purposes of discussion, we will focus on one TI parent device sold with three part numbers:

- SNJ54S138J - Standard TI Part Number
- JM38510/07701BEA - JAN Part Number
- 5962-7604101QEA - DLA SMD Part Number

- DLA - Defense Logistics Agency Land and Maritime (previously known as the Defense Supply Center Columbus or DSCC - keepers of the mil-specs)
- JAN - Joint Army Navy
- SMD - Standard Microcircuit Drawing

DLA Part Identification Nomenclatures

JAN (Joint-Army-Navy) Slash Sheets

JM38510	/	077	01	B	E	X
Military designator	RHA designator	Device Spec	Device type	Device class designator	Case outline	Lead finish
JAN Slash Sheet Number						

DLA SMD

5962	-	76041	01	Q	E	X
Federal stock class designator	RHA designator	Drawing Designator	Device type	Device class designator	Case outline	Lead finish
SMD Drawing Number						

RHA (Radiation Hardness Assured) Designator

(RHA) level designator

- or /
- M
- D
- P
- L
- R
- F
- G
- H

Radiation and Total Dose (Rads (Si))

- No RHA
- 3000
- 10⁴
- 3 x 10⁴
- 5 x 10⁴
- 10⁵
- 3 x 10⁵
- 5 x 10⁵
- 10⁶

Device Class Designators

TI builds QML product as Class Q, Class V, and Class N.

- Class M - Items which have been subjected to and passed all applicable requirements of MIL-PRF-38535 appendix A and are documented on an SMD.
- Class N - Items which have been subjected to and passed all applicable requirements of MIL-PRF-38535 including qualification testing, screening testing, and TCI/QCI inspections, and are encapsulated in plastic.
- Class Q - Items which have been subjected to and passed all applicable requirements of MIL-PRF-38535 including qualification testing, screening testing, and TCI/QCI inspections.
- Class V - Items that meet all the class Q requirements, and have been subjected to, and passed all applicable requirements of MIL-PRF-38535 appendix B.
- Class B - Items which have been subjected to and passed all applicable requirements of MIL-PRF-38535 including qualification testing, screening testing, and TCI/QCI inspections and are documented on a MIL-M-38510 slash sheet.
- Class S - Items that meet all the class B requirements, and have been subjected to, and passed all applicable requirements of MIL-PRF-38535 appendix B and are documented on a MIL-M-38510 slash sheet.

One Part – One Part Number System

DLA allows marking of microcircuits under a One Part - One Part Number system. Following is an excerpt from a Standard Microcircuit Drawing (SMD):

One Part - One Part Number System: The one part - one part number system described below has been developed to allow for transitions between identical generic devices covered by the four major microcircuit requirements documents (MIL-H-38534, MIL-I-38535, and 1.2.1 of MIL-STD-883) without the necessity for the generation of unique PIN's. The three military requirements documents represent different class levels, and previously when a device manufacturer upgraded military product from one class level to another, the benefits of the upgraded product were unavailable to the Original Equipment Manufacturer (OEM), that was contractually locked into the original unique PIN. By establishing a one part number system covering all three documents, the OEM can acquire to the highest class level available for a given generic device to meet system needs without modifying the original contract parts selection criteria.

Therefore a part previously released as Class M would now be built as Class Q without requiring a change to the orderable part number or the part marking.

Package Types

A	14-pin Flatpack (1/4" x 1/4")	B	14-pin Flatpack (3/16" x 1/4")
C	14-pin DIP	D	14-pin Flatpack
E	16-pin DIP	F	16-pin Flatpack
G	8-pin Can	H	10-pin Flatpack
I	10-pin Flatpack	J	24-pin DIP
K	24-pin Flatpack	L	24-pin DIP (300 mil)
M	12-pin Can	P	8-pin DIP
Q	40-pin DIP	R	20-pin DIP
S	20-pin Flatpack	V	18-pin DIP
W	22-pin DIP	2	20-pad LCC
3	28-pad LCC	X	Other packages
Y	Other packages	I	10-pin Flatpack
J	24-pin DIP	K	24-pin Flatpack
L	24-pin DIP (300 mil)	M	12-pin Can
P	8-pin DIP	Q	40-pin DIP
R	20-pin DIP	S	20-pin Flatpack
V	18-pin DIP	W	22-pin DIP
2	20-pad LCC	3	28-pad LCC
X	Other packages	Y	Other packages

Lead Finish (Termination Finish)

<u>Finish Letter</u>	<u>Process</u>
A	Hot Solder Dip
B	Tin-Lead Plate
C	Gold Plate
D	Palladium
E	Gold Flash Palladium
X	Either A, B, or C (mark on specification only)

Lead-finish options must be specified by ordering the DLA SMD or JAN Slash Sheet. The customer may sometimes use the designator "X" as "optional" or "don't care".

Caveats on SMD versus JAN Slash Sheets

In some cases the JAN slash sheets have different electrical specifications than the TI datasheet parts or even the SMD. There is no way to tell without reviewing both or all three.

JAN parts are ordered under the JAN part number.

In most cases an SMD can be ordered by either the TI part number or the SMD part number, but the customer is encouraged to order the SMD to be assured of receiving the correct lead finish. In addition, by specifying the DLA SMD the part marking will definitely reflect the DLA number.

Please note that some TI QML Class Q parts do not have an associated DLA SMD. These parts have been "grand-fathered" and do not require an SMD to be considered QML approved.

Special Note on JM38510 versus M38510 TI orderable part numbers

Per MIL-PRF-38535 Paragraph 3.6.3.2 *“JAN” or “J” mark. The “J” marking is a legacy certification mark that was required by MIL-M-38510 device specifications and qualified on a QPL part by part basis. Since the “J” is often mistakenly considered part of the PIN, it may continue to be marked in front of the military designator portion of the device specification part number at the QML vendor’s option. This “J” was not and shall not be considered element of the official part number used to assign a national stock number.*

JM38510 was the original designator used by Texas Instruments for JAN products however some customers prefer to order by the M38510 and do not have the flexibility to accept the JM38510 designator. Therefore TI has set up alternate part numbers so that a given JAN device can be ordered by either the JM38510 or M38510 designator. The part making itself (JM38510) is the same in either case.

Hints on Using the DLA Part Number Cross Reference and Drawing Library

The JAN slash sheets and DLA Standard Microcircuit Drawings are maintained by DLA. They are not available on the TI web site.

DLA refers to the JAN and SMD part numbers as the “Standard Part Number” on their cross-reference.

The search site for the cross-reference is: <https://landandmaritimeapps.dla.mil/programs/smcr/default.aspx>

To maximize search hits when looking up JAN parts only the device spec and device type should be used. For example, to search for the JM38510/07701BEA, only enter 07701. The menu will list the supplier and available part types.

Similarly, for DLA SMD only the drawing designator and device type should be used. For example, to search for the 5962-7604101QEA, only enter 7604101.

Note that DLA considers the cross-reference to be the living document with respect to which manufacturer is qualified to supply which parts. The DLA SMD and the JAN Slash Sheet may not be revised for several months when a manufacturer is added or removed.