

<p align="center"><b>NOTICE OF CHANGE</b></p>
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MIL-STD-975M (NASA)  
NOTICE 2  
17 March 1995

**NASA STANDARD ELECTRICAL, ELECTRONIC  
AND ELECTROMECHANICAL (EEE) PARTS LIST**

TO ALL HOLDERS OF MIL-STD-975M:

1. THE FOLLOWING PAGES OF MIL-STD-975M HAVE BEEN REVISED AND  
SUPERSEDE THE PAGES LISTED:

<u>NEW PAGE</u>	<u>DATE</u>	<u>SUPERSEDED PAGE</u>	<u>DATE</u>
7.2.25	17 MARCH 1995	7.2.25	05 AUGUST 1994
7.2.26	17 MARCH 1995	7.2.26	05 AUGUST 1994
8.1	17 MARCH 1995	8.1	05 AUGUST 1994
8.2	17 MARCH 1995	8.2	05 AUGUST 1994
8.3	17 MARCH 1995	8.3	05 AUGUST 1994
8.4	17 MARCH 1995	8.4	05 AUGUST 1994
8.5	17 MARCH 1995	8.5	NEW PAGE
8.6	17 MARCH 1995	8.6	NEW PAGE

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-STD-975M will verify that page changes and additions indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the military standard is completely revised or cancelled.

Custodian:  
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Preparing Activity:  
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(Project: 59GP-K141)

AMSC N/A

FSC 59GP

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# MIL-M-38510, MICROCIRCUITS Digital, Advanced CMOS

Description	Generic Type (1)	Function	JAN Part Number (2)	
			Part No.	Grade 1 Grade 2
Counters	S4AC161	Synchronous Presettable Binary Counter	M38510R76302	S•X B•X
	S4AC161	Synchronous Presettable Binary Counter	M38510R76302	S•X B•X
	S4AC163	Synchronous Presettable Binary Counter	M38510R76304	S•X B•X
	S4AC191	Up/down Counter w/Preset and Ripple Clock	M38510R76305	S•X B•X
	S4AC191	Up/down Counter w/Preset and Ripple Clock	M38510R76305	S•X B•X
Gates	S4AC00	NAND, quad 2-input	M38510R75001	S•X B•X
	S4AC02	NOR, quad 2-input	M38510R75101	S•X B•X
	S4AC04	Hex inverter	M38510R75701	S•X B•X
	S4AC05	Hex inverter with open drain outputs	5962-9059001	S•X B•X
	S4AC08	AND, quad 2-input	M38510R75203	S•X B•X
	S4AC10	NAND, triple, 3-input	M38510R75002	S•X B•X
	S4AC11	AND, triple, 3-input	M38510R75204	S•X B•X
	S4AC14	HEX inverting Schmitt trigger	M38510R75702	S•X B•X
Buffers	S4AC20	NAND, dual 4-input	M38510R75003	S•X B•X
	S4AC32	OR, quad, 2-input	M38510R75201	S•X B•X
	S4AC86	XOR, quad 2-input	M38510R75202	S•X B•X
	S4AC125	QUAD tri-state buffer	5962-9325301	S•X B•X
Flip-Flops/ Latches	S4AC74	Dual D-type flip-flop, positive edge-triggered	M38510R75302	S•X B•X
	S4AC109	Dual JK positive edge-triggered flip-flop	M38510R75304	S•X B•X
	S4AC109	Dual JK positive edge-triggered flip-flop	M38510R75304	S•X B•X
	S4AC174	Hex D flip-flop with master reset	M38510R75307	S•X B•X
	S4AC273	Octal D-type flip-flop with reset	M38510R75601	S•X B•X
	S4AC273	Octal D-type flip-flop with reset	M38510R75601	S•X B•X
	S4AC373	Octal transparent latch with 3-state outputs	M38510R75403	S•X B•X
	S4AC373	Octal transparent latch with 3-state outputs	M38510R75403	S•X B•X
	S4AC374	Octal D-type flip-flop with 3-state outputs	M38510R75602	S•X B•X
	S4AC374	Octal D-type flip-flop with 3-state outputs	M38510R75602	S•X B•X
	S4AC377	Octal D flip-flop w/clock enable	M38510R75603	S•X B•X
	S4AC574	Octal D flip-flop w/3-state outputs	M38510R75604	S•X B•X

- (1) Use the JAN M38510 part number for ordering.  
(2) The \* is for choice of package style. The X is for choice of lead finish. Refer to the QPL for specific choices.

**MIL-M-38510, MICROCIRCUITS**  
**Digital, Advanced CMOS (Continued)**

Description	Generic Type (1)	Function	JAN Part Number (2)	
			Part No.	Grade 1
Decoder/MUX	54AC138	1-of-8 decoder/demultiplexer	M38510/75802	S*X
	54AC139	Dual 1-of-4 decoder/demultiplexer	M38510/75803	S*X
	54AC151	8-input multiplexer	M38510/76201	S*X
	54AC153	Dual 4-input multiplexer	M38510/76202	S*X
	54AC157	Quad 2-input multiplexer	M38510/76203	S*X
Drivers	54AC240	Octal buffer/line driver with inverting 3-state outputs	M38510R75703	S*X
	54AC241	Octal buffer/line driver with 3-state outputs	M38510R75704	S*X
	54AC244	Octal buffer/line driver with 3-state outputs	M38510R75705	S*X
	54AC541	Octal buffer/line driver w/3 state outputs	M38510/75711	S*X
Transceivers	54AC245	Octal, bidirectional transceiver with 3-state outputs	M38510R75503	S*X
Shift Registers	54AC299	8-bit universal shift register with common parallel I/O pins	M38510R76506	S*X
Comparators	54AC520	8-bit magnitude comparator	5962-9091601	S*X
	54AC521	8-bit identity comparator	5962R9098501	S*X

- (1) Use the JAN M38510 part number for ordering.  
(2) The \* is for choice of package style. The X is for choice of lead finish. Refer to the QPL for specific choices.

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**SECTION 8: SUMMARY OF STANDARD PROTECTIVE DEVICES (1)**

Page	Control Specification	Description	Grade 1	Grade 2
8.2	MIL-F-23419/8	Fuses, instrument type, style FM08, subminiature, high performance	(2)	(3)
8.3	MIL-F-23419/12	Fuses, instrument type, style FM12, subminiature, high performance, 125Volts	(2)	(3)
8.4	MIL-F-23419/12	Fuses, instrument type, style FM12, subminiature, high performance, 72Volts	(2)	(3)
8.5	MIL-C-39019	Circuit breakers, magnetic, low-power	(2)	(3)

- (1) Refer to MIL-HDBK-978, Vol. 5, for construction and application information and the technical report titled "An Overview of the Construction, Operation and Reliability of Solid State Fuses".
- (2) Presently no Grade 1 parts available.
- (3) For use in Grade 2 applications.

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**MIL-F-23419/8 STYLE FM08 FUSES**  
**Instrument Type (Subminiature, High-Performance)**

Part Number Explanation:			
FM08	A	XXXV	XXXXXA
Style	Characteristic A = normal interrupt time		Voltage Rating Followed by letter V
			Current Rating Followed by letter A

Part Number (1)	Control Specification	Style	Current Rating (Amps)	Overload Interrupt Time -55°C to +125°C		Maximum Voltage Rating (Volts)	Cold Resistance (Ohms) (3)		Voltage Drop (Volts) (4)	
				200% (2)	300% (2)		Min	Max	Min	Max
FM08A125V 1/8A	MIL-F-23419/8	FM08	1/8	5	0.1	125	1.89	2.31	0.85	1.15
FM08A125V 1/4A			1/4				.639	.781	0.59	0.80
FM08A125V 3/8A			3/8				.378	.462	0.527	0.713
FM08A125V 1/2A			1/2				.252	.308	0.488	0.660
FM08A125V 3/4A			3/4	5	0.1	125	.153	.187	-0.145	-0.197
FM08A125V 1A			1				.112	.138	0.157	0.213
FM08A125V 1.5A			1-1/2				.072	.088	0.153	0.207
FM08A125V 2A			2				.0495	.0605	0.144	0.196
FM08A125V 2.5A			2-1/2				.0378	.0462	0.125	0.169
FM08A125V 3A			3				.0315	.0388	0.139	0.187
FM08A125V 4A			4				.0207	.0253	0.110	0.150
FM08A125V 5A			5				.0126	.0154	0.087	0.118
FM08A125V 7A			7	10.0	0.3	32	.0090	.0110	0.087	0.118
FM08A125V 10A			10				.0059	.0070	0.085	0.110
FM08A32V 15A			15				.0036	.0044	0.065	0.087

- (1) For use in Grade 2 applications.  
 (2) Percentage of nominal current rating.  
 (3) Cold resistance is measured at 10 percent or less of rated current.  
 (4) Voltage drop is measured after the fuse has been subjected to rated current for not less than 5 minutes and not more than 10 minutes.

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**MIL-F-23419/12 STYLE FM12 FUSES**  
**Instrument Type (Subminiature, High-Performance)**

Part Number (1)	Control Specification	Style	Current Rating (Amps)	Voltage Rating Max (Volts)	Overload Interrupt Time -55°C to +125°C Max (sec) (2)			Cold Resistance (Ohms) (3)	
					250%	400%	600%	Minimum	Maximum
FM12A125V 1/8A	MIL-F-23419/12	FM12	1/8	125	0 - 30.0	0 - .015	0 - .003	6.375	10.625
FM12A125V 1/4A			1/4		0 - 30.0	0 - .015	0 - .003	1.875	3.125
FM12A125V 3/8A			3/8		.01 - 300	.001 - .015	.00015 - .003	1.125	1.875
FM12A125V 1/2A			1/2		.01 - 300	.001 - .015	.00015 - .003	0.675	1.125
FM12A125V 3/4A			3/4		.01 - 300	.001 - .015	.00015 - .003	0.225	0.375
FM12A125V 1A			1		.01 - 300	.001 - .015	.00015 - .003	0.090	0.270
FM12A125V 1.5A			1.5		.01 - 300	.001 - .015	.00015 - .003	0.065	0.195
FM12A125V 2.0A			2.0		.01 - 300	.001 - .015	.00015 - .003	0.030	0.090
FM12A125V 3.0A			3.0		.01 - 300	.001 - .015	.00015 - .003	0.0175	0.0525
FM12A125V 4.0A			4.0		.01 - 300	.001 - .015	.00015 - .003	0.0165	0.0495
FM12A125V 5.0A			5.0		.01 - 300	.001 - .015	.00015 - .003	0.0150	0.0450
FM12A125V 20A			20		.01 - 300	.001 - .015	.00015 - .003	0.0033	0.0056

(1) For use in Grade 2 applications.

(2) Percentage of nominal current rating.

(3) Cold resistance is measured with a test current of 0.1 to 10 milliamperes.

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**MIL-F-23419/12 STYLE FM12 FUSES**  
**Instrument Type (Subminiature, High-Performance)**

Part Number (1)	Control Specification	Style	Current Rating (Amps)	Voltage Rating Max (Volts)	Overload Interrupt Time -55°C to +125°C Max (sec) (2)			Cold Resistance (Ohms) (3)	
					250%	400%	600%	Minimum	Maximum
FM12A72V 1/8A			1/8		0 - 30.0	0 - .015	0 - .003	6.375	10.625
FM12A72V 1/4A			1/4		0 - 30.0	0 - .015	0 - .003	1.875	3.125
FM12A72V 3/8A			3/8		.01 - 300	.001 - .015	.00015 - .003	1.125	1.875
FM12A72V 1/2A			1/2		.01 - 300	.001 - .015	.00015 - .003	0.675	1.125
FM12A72V 3/4A			3/4		.01 - 300	.001 - .015	.00015 - .003	0.225	0.375
FM12A72V 1A			1		.01 - 300	.001 - .015	.00015 - .003	0.135	0.225
FM12A72V 1.5A	MIL-F-23419/12	FM12	1.5	72	.01 - 300	.001 - .015	.00015 - .003	0.097	0.163
FM12A72V 2.0A			2.0		.01 - 300	.001 - .015	.00015 - .003	0.045	0.075
FM12A72V 3.0A			3.0		.01 - 300	.001 - .015	.00015 - .003	0.0262	0.0438
FM12A72V 4.0A			4.0		.01 - 300	.001 - .015	.00015 - .003	0.0195	0.0325
FM12A72V 5.0A			5.0		.01 - 300	.001 - .015	.00015 - .003	0.0135	0.0225
FM12A72V 6.0A			6.0		.01 - 300	.001 - .015	.00015 - .003	0.0112	0.0188
FM12A72V 7.5A			7.5		.01 - 300	.001 - .015	.00015 - .003	0.0082	0.0138
FM12A72V 10A			10		.01 - 300	.001 - .015	.00015 - .003	0.0063	0.0107
FM12A72V 15A			15		.01 - 300	.001 - .015	.00015 - .003	0.0045	0.0075

(1) For use in Grade 2 applications.

(2) Percentage of nominal current rating.

(3) Cold resistance is measured with a test current of 0.1 to 10 milliamperes.

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**MIL-C-39019, MAGNETIC CIRCUIT BREAKERS**  
**Low Powered, Sealed, Trip-Free**

Part Number Explanation:				
M39019	/XX	-XXX	X	
Military Specification Designation	Specification Slash Sheet	Dash Number	Suffix	
No suffix = wire terminals (-XXXX) S = screw terminals (-XXXXS)				

Part Number (1) (2) (3)	Control Specification	Current Range, Amps	Contact Configuration	Voltage Rating
M39019/01-XXXX	MIL-C-39019	0.05 to 20.0	One pole	50 Vdc max and 240 Vac max at 60 and 400 Hz
M39019/02-XXXX			One pole with SPDT aux contacts (4)	
M39019/03-XXXX			Two pole	
M39019/04-XXXX			Two pole with SPDT aux contacts (4)	
M39019/05-XXXX			Three pole	
M39019/06-XXXX			Three pole with SPDT aux contacts (4)	

- (1) See slash sheet for dimensions and configurations.  
 (2) Three trip characteristics available. Time delay A: fast; Time delay B: slow; Time delay C: no delay.  
 (3) High inrush capability available for time delay A and B configurations.  
 (4) Single-pole, double-throw auxiliary contacts rated at 0.5 amp lamp load at 50 Vdc or 120 Vac.

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