

NOTICE OF CHANGE

MIL-STD-975L (NASA)
NOTICE 1
12 APRIL 1994

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

TO ALL HOLDERS OF MIL-STD-975L

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

<u>NEW PAGE</u>	<u>DATE</u>	<u>SUPERSEDED PAGE</u>	<u>DATE</u>
1.45	12 APRIL 1994	1.45	31 JANUARY 1994
1.46	31 JANUARY 1994	1.46	REPRINTED WITHOUT CHANGE
1.49	31 JANUARY 1994	1.49	REPRINTED WITHOUT CHANGE
1.50	12 APRIL 1994	1.50	31 JANUARY 1994
1.51	12 APRIL 1994	1.51	31 JANUARY 1994
1.52	31 JANUARY 1994	1.52	REPRINTED WITHOUT CHANGE
2.7	31 JANUARY 1994	2.7	REPRINTED WITHOUT CHANGE
2.8	12 APRIL 1994	2.8	31 JANUARY 1994
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4.8	31 JANUARY 1994	4.8	REPRINTED WITHOUT CHANGE
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7.18	31 JANUARY 1994	7.18	REPRINTED WITHOUT CHANGE
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B.3	31 JANUARY 1994	B.3	REPRINTED WITHOUT CHANGE
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2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.

3. Holders of MIL-STD-975L 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 canceled.

Custodians:
NASA-NA

Preparing activity:
NASA-NA

Project 59GP-K139

AMSC N/A
DISTRIBUTION STATEMENT A

FSG 59GP
Approved for public release;
distribution is unlimited.

MIL-C-23269, CAPACITORS Fixed, Glass Dielectric, Established Reliability

Part number explanation: M23269	/XX	-XXXX
M23269 - Identifies CYR fixed, glass dielectric, established reliability capacitors conforming to MIL-C-23269.	/XX - Identifies the appropriate military specification sheet that uniquely specifies the capacitor family.	-XXXX - Uniquely specifies the nominal capacitance value, capacitance tolerance, rated dc voltage, and failure rate level.

Part Number	Control Specification	Style (1)	Capacitance		Working Voltage (Vdc) at +125 °C	Maximum Dissipation Factor (%)	Temperature		Minimum Insulation Resistance (Gigohms) at +25°C	FRL Grade 1 and 2
			Range (pF)	Tolerance (±)			Range (°C)	Coefficient (ppm/°C)		
M23269/01-XXXX	MIL-C-23269/1	CYR10	0.5-300	0.25 pF 0.50 pF 1%, 2%, 5%	100	0.1	-55 to +125	140 ±25	100	S
M23269/02-XXXX	MIL-C-23269/2	CYR15	220-1,200	1%, 2%, 5%						
M23269/03-XXXX	MIL-C-23269/3	CYR20	560-3,300	1%, 2%, 5%						
M23269/04-XXXX	MIL-C-23269/4	CYR30	3,600-6,200							

(1) Lead material and coating are specified in the detailed specification sheet for each device type.

MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-C-23269/1, STYLE CYR10 CAPACITORS
Fixed, Glass Dielectric, Established Reliability

Capacitance		Part Number M23269/01- Grades 1 and 2 FRL = S
Value (pF)	Tolerance (±)	
12	0.25pF 5%	7033 7034
13	2% 5%	7035 7036
15	2% 5%	7037 7038
16	2% 5%	7039 7040
18	2% 5%	7041 7042
20	2% 5%	7043 7044
22	2% 5%	7045 7046
24	2% 5%	7047 7048
27	1% 2% 5%	7049 7050 7051
30	1% 2% 5%	7052 7053 7054
33	1% 2% 5%	7055 7056 7057
36	1% 2% 5%	7058 7059 7060
39	1% 2% 5%	7061 7062 7063

Capacitance		Part Number M23269/01- Grades 1 and 2 FRL = S
Value (pF)	Tolerance (±)	
0.5	0.25pF 5%	7001 7002
1.0	0.25pF 5%	7003 7004
1.5	0.25pF 5%	7005 7006
2.2	0.25pF 5%	7007 7008
2.7	0.25pF 5%	7009 7010
3.0	0.25pF 5%	7011 7012
3.3	0.25pF 5%	7013 7014
3.6	0.25pF 5%	7015 7016
3.9	0.25pF 5%	7017 7018
4.3	0.25pF 5%	7019 7020
4.7	0.25pF 5%	7021 7022
5.1	0.25pF 5%	7023 7024
5.6	0.25pF 5%	7025 7026
6.2	0.25pF 5%	7027 7028
6.8	0.25pF 5%	7029 7030
7.5	0.25pF 5%	7031 7032
8.2	0.25pF 5%	
9.1	0.25pF 5%	
10	0.25pF 5%	
11	0.25pF 5%	

MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-C-23269/3, STYLE CYR20 CAPACITORS
Fixed, Glass Dielectric, Established Reliability

Capacitance		Part Number M23269/03- Grades 1 and 2 FRL = S
Value (pF)	Tolerance (±%)	
1,200	1	7025
	2	7026
	5	7027
1,300	1	7028
	2	7029
	5	7030
1,500	1	7031
	2	7032
	5	7033
1,600	1	7034
	2	7035
	5	7036
1,800	1	7037
	2	7038
	5	7039
2,000	1	7040
	2	7041
	5	7042
2,200	1	7043
	2	7044
	5	7045
2,400	1	7046
	2	7047
	5	7048

Capacitance		Part Number M23269/03- Grades 1 and 2 FRL = S
Value (pF)	Tolerance (±%)	
560	1	7001
	2	7002
	5	7003
620	1	7004
	2	7005
	5	7006
680	1	7007
	2	7008
	5	7009
750	1	7010
	2	7011
	5	7012
820	1	7013
	2	7014
	5	7015
910	1	7016
	2	7017
	5	7018
1,000	1	7019
	2	7020
	5	7021
1,100	1	7022
	2	7023
	5	7024

MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-C-23269/3, STYLE CYR20 CAPACITORS
Fixed, Glass Dielectric, Established Reliability (Continued)

Capacitance		Part Number M23269/03- Grades 1 and 2 FRL = S
Value (pF)	Tolerance (±%)	
2,700	1	7049
	2	7050
	5	7051
3,000	1	7052
	2	7053
	5	7054
3,300	1	7055
	2	7056
	5	7057

MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-C-23269/4, STYLE CYR30 CAPACITORS
Fixed, Glass Dielectric, Established Reliability

Capacitance		Part Number M23269/04- Grades 1 and 2 FRL = S
Value (pF)	Tolerance (±%)	
3,600	1	7001
	2	7002
	5	7003
3,900	1	7004
	2	7005
	5	7006
4,300	1	7007
	2	7008
	5	7009
4,700	1	7010
	2	7011
	5	7012
5,100	1	7013
	2	7014
	5	7015
5,600	1	7016
	2	7017
	5	7018
6,200	1	7019
	2	7020
	5	7021

MIL-STD-975L (NASA) - Part I
NOTICE 1

MIL-C-39003, CAPACITORS
Fixed, Tantalum (Solid) Electrolytic, Polarized, Established Reliability

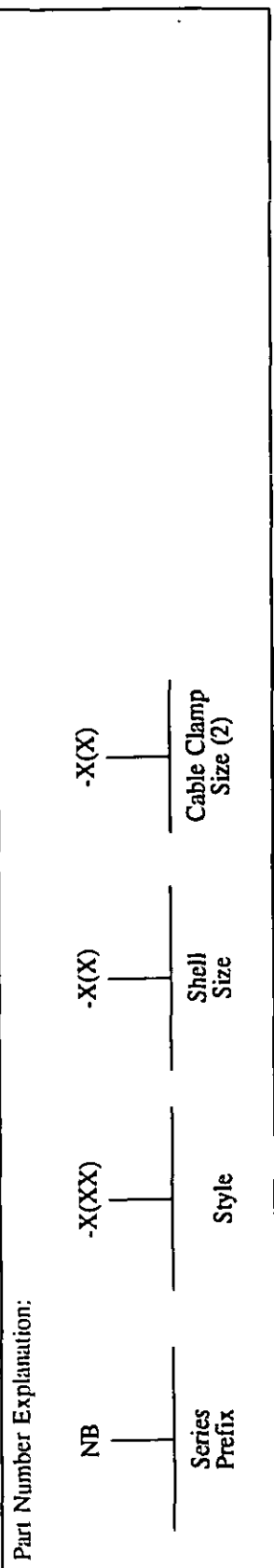
Part Number Explanation: M39003	/XX	-XXXX
M39003 - Identifies fixed, tantalum, electrolytic (solid electrolyte), established reliability capacitors that are hermetically sealed in metal cases.	/XX - Identifies the appropriate military specification sheet that uniquely specifies the capacitor family	-XXXX - Uniquely specifies the nominal capacitance value, capacitance tolerance, rated voltage, maximum dc leakage and dissipation factor, and failure rate level.

Part Number (1) (2)	Control Specification	Style	Capacitance		Rated Voltage (Vdc)	Operating Temperature Range (°C)	Case Type	Configuration		FRL	
			Range (µF)	Tolerance (±%)				Type	Lead Material	Grade 1	Grade 2
M39003/10-XXXX* (3)	MIL-C-39003/10 Polarized	CSS13	0.12 - 220.0	10	10, 15, 20, 35, 50, 75			Tin-lead coated nickel; Solder coated nickel		C	B
M39003/01-XXXX (4)	MIL-C-39003/1 Polarized	CSR13	0.0047 - 4.7	10, 20	50	-55 to +125	Tubular	Axial	Tin-lead coated nickel; Solder coated nickel	C (5)	B
M39003/02-XXXX (4)	MIL-C-39003/2 Polarized	CSR09	0.047 - 15.0	10	10, 20, 35, 50, 75				Nickel-iron alloy	C (5)	B
M39003/10-XXXX* (3)	MIL-C-39003/10 Polarized	CSS33	1.2 - 560.0	10	10, 20, 35, 50				Tin-lead coated nickel; Solder coated nickel	C	B

- (1) MIL-C-39003 capacitors shall not be used in power supply filters. Reference MIL-HDBK-978, Vol. 1, 2.6.7.2.
- (2) Parts covered by this specification contain internal soldered connections which may reflow during installation. The A, A1, B, B1 case sizes are particularly susceptible and special precautions such as heat sinking are recommended when soldering onto boards.
- (3) The symbol * completes the dash number thus: * = S for Sleeved, U for Unsleeved.
- (4) CSR09 and CSR13 capacitors are sleeved (insulated case).
- (5) All CSR13 and CSR09 capacitors must be subjected to the surge current test as specified by Appendix B. Reference MIL-HDBK-978, Vol. 1, para. 2.6.7.2 and 2.6.7.3.

MIL-STD-975L (NASA) - Part I
NOTICE 1

40M39569 CONNECTORS
Electrical, Miniature, Circular, Environment Resisting, +200°C, Backshells



Part Number	Control Specification	Style	Shell Size
NB-C-X(X)		Straight	
NB-S-X(X)		Straight with strain relief	
NB-R-X(X)		90° with strain relief	
NB-SCT-X(X) (1)	40M39569	Straight with cable tie	8 through 24
NB-RCT-X(X) (1)		Straight with 90° cable tie	
NB-FCT-X(X)		Straight with 45° cable tie	
NB-RFI-X(X)-X(X)		Straight RFI	

- (1) Add a "N" to the end of the part number to order without a ground lug.
- (2) For RFI style only.

MIL-STD-975L (NASA) - Part I
NOTICE 1

GSFC S-311-P-4 CONNECTORS (1)
Connectors, Electrical, Subminiature, Rack and Panel Non-Magnetic

Part Number Explanation:

311P4	XX	-X	X	-X	-XX
GSFC Control Specification	Detail Specification	Contact Arrangement	Contact Type P = pin S = socket	Residual Magnetism (Gamma) A = 2000 B = 200	Mounting Hole Diameter 12 = 0.120 inch 15 = 0.154 inch

Part Number	Control Specification	Contact Type (3)	GSFC Contact Arrangement	Number of Contacts		Grades 1 and 2
				Standard Power	Coaxial and/or High Voltage	
311P407-XX-X-XX	GSFC S-311-P-4	Power, Size 22D	-1 -2 -3 -4 -5 -6	15	-	(2)
				26		
				44		
				62		
				78		
				104		

- (1) These connectors may require material testing per NHB8060.1 for manned space flight applications.
- (2) Parts may be used for Grade 1 and 2 applications.
- (3) Contacts are supplied separately. See the following page listing S-311-P-4/06, /08 or /10 for appropriate part numbers.

MIL-STD-975L (NASA) - Part 1
NOTICE 1

GSFC S-311-P-4 CONNECTORS (1)
Connectors, Electrical, Subminiature, Rack and Panel Non-Magnetic (Continued)

Part Number	Control Specification	Contact Type (3)	GSFC Contact Arrangement	Number of Contacts		Grades 1 and 2			
				Standard Power	Coaxial and/or High Voltage				
311P405-XX-X-XX	GSFC S-311-P-4	Mixed, Power Size 20 & High Voltage or Coaxial Size 8 (4)	-6	4	1	(2)			
			-7	0	3				
			-8	5	2				
			-9	10	1				
			-10	0	5				
			-11	5	4				
			-12	10	3				
			-13	15	2				
			-14	20	1				
			-15	0	8				
			-16	7	6				
			-17	12	5				
			-18	17	4				
			-19	17	4				
			-20	22	3				
			-21	25	2				
			-22	17	7				
			-23	32	4				
			-24	41	2				
			-25	46	1				
			311P409-XX-X-XX		Power, Size 20		-1	9	
							-2	15	
							-3	25	
							-4	37	
							-5	50	

(1) These connectors may require material testing per NHB8060.1 for manned space flight applications.

(2) Parts may be used for Grade 1 and 2 applications.

(3) Contacts are supplied separately. See the following page listing S-311-P-4/06, /08 or /10 for appropriate part numbers.

(4) Coaxial contacts should be used for signals of 1 MHz frequency or less. The nylon hoods used on the high voltage contacts may not meet programs outgassing limits. See page 2.10 for contact part numbers.

MIL-STD-975L (NASA) - Part I
NOTICE 1

GSFC S-311-P-4 CONTACTS

Part Number Explanation: For Coaxial and High Voltage Contacts:		(X)		X		X	
G							
	C = Coaxial H = High Voltage		Blank = Straight R = Right Angle		P = Pin S = Socket		Wire Accommodation (See table below)
For Standard Power Contacts:		(X)		X		X	
G							
	Detail Specification				P = Pin S = Socket		Wire Accommodation (See table below)

Part Number	Control Specification	Size	Wire Accommodation
GC(X)X1	S-311-P-4/06	8	RG-178B/U
GH(X)X6 (1)	S-311-P-4/06	8	20 AWG, Max
G08X1	S-311-P-4/08	22D	22 to 28 AWG
G10X1	S-311-P-4/10	20	20 to 24 AWG

(1) The nylon hood used on high voltage contacts may not meet program outgassing limits.

MIL-STD-975L (NASA) - Part I
NOTICE 1

GSFC S-311-P-10 CONNECTORS (1)
Connectors, Electrical, Rectangular, Miniature, Polarized Shell, Rack and Panel, Combination Solder, Coaxial and High Voltage Contacts, Non-Magnetic

Part Number Explanation:					
311P10	(B)	-X(X)	X	-X	-XX
GSFC Control Specification	Socket Contact Designator No digit = contact springs B = split finger sleeved (PREFERRED)	Insert Arrangement	Contact Type P = pin S = socket	Residual Magnetism (Gamma) B = 200 C = 20	Mounting Hole Diameter 12 = 0.120 inch 15 = 0.154 inch

Part Number	Control Specification	Arrangement Number (2)	Number of Contacts		Grades 1 and 2
			Standard Power	Coaxial and or High Voltage (4)	
311P10-X(X)X-X-XX	GSFC S-311-P-10	1	9		(3)
		2	15		
		3	25		
		4	37		
		5	50		
		6	4	1	
		7	0	3	
		8	5	2	
		9	10	1	
		10	0	5	
		11	5	4	
		12	10	3	
		13	15	2	
		14	20	1	
		15	0	8	

(1) These connectors may require material testing per NHB8060.1 for manned space flight applications.
 (2) Refer to Table II of the control specification for contact arrangements.
 (3) Parts may be used for Grade 1 and 2 applications.
 (4) Coaxial contacts should be used for signals of 1 Mhz frequency or less. The nylon hoods used on the high voltage contacts may not meet program outgassing limits. See page 2.10 for contact part numbers.

MIL-STD-975L (NASA) - Part I
NOTICE 1

GSFC S-311-P-10 CONNECTORS (1)
Connectors, Electrical, Rectangular, Miniature, Polarized Shell,
Rack and Panel, Combination Solder, Coaxial and High Voltage Contacts,
Non-Magnetic (Continued)

Part Number	Control Specification	Arrangement Number (2)	Number of Contacts		Grades I and 2
			Standard Power	Coaxial and or High Voltage (4)	
311P10-X(X)X-X-XX	GSFC S-311-P-10	16	7	6	(3)
		17	12	5	
		18	17	4	
		20	22	3	
		21	25	2	
		22	17	7	
		23	32	4	
		24	41	2	
		25	46	1	

- (1) These connectors may require material testing per NHB8060.1 for manned space flight applications.
(2) Refer to Table II of the control specification for contact arrangements.
(3) Parts may be used for Grade 1 and 2 applications.
(4) Coaxial contacts should be used for signals of 1 Mhz frequency or less. The nylon hoods used on the high voltage contacts may not meet program outgassing limits. See page 2.10 for contact part numbers.

SECTION 4: SUMMARY OF STANDARD DIODES

Page	Control Specification	Description	Type Designation	
			Grade 1	Grade 2 (1)
4.2		Small signal	JANS	JANTXV
4.2		Power		
4.3		Multiple array		
4.3		Monolithic array		
4.4	MIL-S-19500	Zener - voltage regulator	JANS	JANTXV
4.5		Zener - voltage suppressor		
4.5		Bidirectional voltage suppressor		
4.6		FET - current regulator		
4.6		Schoutky barrier		
4.7		Thyristor		

Refer to MIL-HDBK-978, Vol. 2, for construction and application information.

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

MIL-STD-975L (NASA) - Part I
NOTICE 1

MIL-S-19500 DIODES, SILICON

Part Number Explanation:		TXV		X (2)		IN		XXXX		B		-1															
Military Qualified		Quality Level		Total Ionizing Dose (RAD (SI))		Neutron Fluence (N/cm ²)		Component Designation		Identification Number		Metallurgical Bonding															
				<table border="1"> <tr> <td>M</td> <td>3 x 10⁵</td> <td>2 x 10¹³</td> </tr> <tr> <td>D</td> <td>1 x 10⁴</td> <td>2 x 10¹²</td> </tr> <tr> <td>R</td> <td>1 x 10⁴</td> <td>1 x 10¹¹</td> </tr> <tr> <td>E</td> <td>1 x 10⁴</td> <td>1 x 10¹¹</td> </tr> </table>		M	3 x 10 ⁵	2 x 10 ¹³	D	1 x 10 ⁴	2 x 10 ¹²	R	1 x 10 ⁴	1 x 10 ¹¹	E	1 x 10 ⁴	1 x 10 ¹¹										
M	3 x 10 ⁵	2 x 10 ¹³																									
D	1 x 10 ⁴	2 x 10 ¹²																									
R	1 x 10 ⁴	1 x 10 ¹¹																									
E	1 x 10 ⁴	1 x 10 ¹¹																									

Radiation Hardness Assurance (RHA)

Description	Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Electrical Characteristics				C _t (Max) (pF)	I _r (Max avg)	I _r (Max) at V _R (V)	I _r (Max) at V _R (μA)	I _s (Max) at V _R (V)	Pkg Outline	Remarks
				V _P (Max) at I _P (pk) (V)	I _P (A)	I _r (Max) at V _R (V)	I _r (Max) at V _R (μA)							
				V _P (Max) at I _P (pk) (V)	I _P (A)	I _r (Max) at V _R (V)	I _r (Max) at V _R (μA)							
Small signal	IN645-1 (4)	IN645-1	/240	1.0	400 mA	50 nA	225	400 mA	225	50 nA	400	A1	Rectifier	
	IN647-1 (4)	IN647-1	/240	1.0	400 mA	50 nA	400	400 mA	400	50 nA	600	A1	Rectifier	
	IN649-1 (4)	IN649-1	/587	1.0	400 mA	50 nA	600	500 mA	600	50 nA	600	A1	Rectifier	
	IN6661	—	—	1.0	10 mA	0.5	75	200 mA	75	0.5	5	DO-204		
	IN6662	—	—	0.86	50 mA	0.1	50	200 mA	50	0.1	4			
	IN6663	—	—	0.81	10 mA	0.05	50	150 mA	50	0.05	4			
	IN4148-1 (3)	IN4148-1 (3)	/116	1.0	10 mA	0.5	75	200 mA	75	0.5	5			
	IN4150-1	IN4150-1	/231	0.86	50 mA	0.1	50	200 mA	50	0.1	4			
	IN6642,U	IN6642,U	/578	0.8	10 mA	0.5	125	300 mA	125	0.5	4.5			
	IN6643,U	IN6643,U	/578	1.0	10 mA	0.5	75	300 mA	75	0.5	5.0			
Power	IN5415	IN5415	/411	1.5	9 A	1.0	50	3 A	50	1.0	550	A248	Fast switching	
	IN5416	IN5416	/411	1.5	9 A	1.0	100	3 A	100	1.0	430	A248	Fast switching	
	IN5417	IN5417	/411	1.5	9 A	1.0	200	3 A	200	1.0	250	A248	Fast switching	
	IN5418	IN5418	/411	1.5	9 A	1.0	400	3 A	400	1.0	165	A248	Fast switching	
	IN5419	IN5419	/411	1.5	9 A	1.0	500	3 A	500	1.0	140	A248	Fast switching	
	IN5420	IN5420	/411	1.5	9 A	1.0	600	3 A	600	1.0	120	A248	Fast switching	

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

(2) Include only for JANTXV and JANS product assurance level devices.

(3) New designs shall use MIL-S-19500/578.

(4) New designs shall use MIL-S-19500/587.

NOTICE 1

MIL-S-19500 DIODES, SILICON (Continued)

Description	Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Electrical Characteristics							Pkg Outline	Remarks
				V _F (Max) at I _F (pk) (V)	I _r (Max) at V _R (μA)	I _r (Max) (V)	I _o (Max avg) (A)	C _i (Max) (PF)	t _{tr} (Max) (ns)			
										V _F (Max) at I _F (pk) (V)		
Power (Continued)	IN5615	IN5615	/429	1.6	0.5	200	1A	45	150	A248	Fast switching	
	IN5617	IN5617		3 A	400	200	12A (T _c = 100°C)	200	200			
	IN5619	IN5619		3 A	600	400	12A (T _c = 100°C)	200	200			
	IN5621	IN5621		800	1000	200	12A (T _c = 150°C)	10 μs	10 μs			
	IN5623	IN5623		1000	1000	200	12A (T _c = 150°C)	10 μs	10 μs			
	—	IN3891, A, AR	IN3891, A, AR	/304	1.5	10	200	12A (T _c = 100°C)	—	200	DO-203	
	—	IN3893, A, AR	IN3893, A, AR	/304	1.5	10	400	12A (T _c = 100°C)	—	200	DO-203	
	—	IN1202A	IN1202A	/260	1.35	5.0	200	12A (T _c = 150°C)	—	10 μs	DO-203	
	IN5550	IN5550	IN5550	/420	1.2	—	200	—	—	—	A1	Rectifier
	IN5551	IN5551	IN5551		1.2	—	400	3	—	—		
IN5552	IN5552	IN5552	1.2		1.0	600	—	—	—			
IN5553	IN5553	IN5553	1.3		—	800	—	—	—			
IN5554	IN5554	IN5554	1.3		—	1000	—	—	—			
IN5614	IN5614	IN5614	/427	1.3	0.5	200	1	—	—	A248	Fast recovery	
IN5616	IN5616	IN5616		1.3	—	400	—	—	—			
IN5618	IN5618	IN5618		3 (2)	—	600	—	—	—			
IN5620	IN5620	IN5620		3 (2)	—	800	—	—	—			
IN5622	IN5622	IN5622		3 (2)	—	1000	—	—	—			
IN5802, US	—	—	/478	0.975	1.0	50	1	25	25	A248	Fast recovery	
IN5804	IN5804	IN5804		0.975	1.0	100	1	25	25			
IN5806	IN5806	IN5806		0.975	1.0	150	1	25	25			
IN5807, US	—	—		0.925	5.0	50	3	60	30			
IN5809	IN5809	IN5809		0.925	5.0	100	3	60	30			
IN5811	IN5811	IN5811		0.925	5.0	150	3	60	30			
—	IN5814	IN5814		0.95	10.0	100	5	300	35			
—	IN5816	IN5816		0.95	10.0	150	5	300	35			
—	IN5768	IN5768		0.1	40	40	300 mA	4	20			
—	IN5770	IN5770		0.1	40	40	300 mA	8	20			
Multiple array	—	IN5772	/474	1.0	100mA	40	—	8	20	TO-86	Common cathode	
	—	IN5774	—	0.1	40	40	—	8	20	TO-86	Common anode	
	—	IN6101	IN6101	—	25 nA	20	—	4	5	TO-86	Common anode/cathode	
—	—	—	—	—	—	—	—	—	—	TO-89	Dual common anode/cathode	
—	—	—	—	—	—	—	—	—	—	TO-116	Monolithic	

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

(2) Pulsed.

MIL-STD-975L (NASA) - Part I
NOTICE 1

MIL-S-19500 DIODES, SILICON (Continued)

Description	Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Electrical Characteristics					Pkg Outline
				P ₁ at T _A = 25°C	V _Z (Nominal) at I _Z		V _Z (Reg) or delta BV (V)		
					(V)	(mA)			
Zener- voltage regulator	1N962B-1 thru 1N973B-1	1N962B-1 thru 1N992B-1	/117		11 - 200	11.5 - 0.65	0.5 - 12		
	1N754A-1 thru 1N759A-1	1N746A-1 thru 1N759A-1			3.3 - 12	20	1.0 - 0.4		
		1N746A thru 1N759A		400 mW (T _A = 50°C)	3.3 - 12	20	1.0 - 0.4		
		1N4370A-1	/127		2.4	20	1.0		DO-204
		1N4371A-1			2.7	20	1.0		
		1N4372A-1			3.0	20	1.0		
		1N4614-1 thru 1N4627-1	/435		1.8 - 6.2	120 - 61.0	—		
		1N4099-1 thru 1N4135-1	/435		6.8 - 100	56 - 3.8			
		1N4565A-1 thru 1N4574A-1	/452 (2)		6.4	0.5 - 1.0	5 - 100 mV		
		1N6320 thru 1N6336	/533		6.8 - 33	20 - 3.8	1.6 - 0.35		
		1N6309 thru 1N6336	/533	500 mW (T _L = 75°C)	2.4 - 33	20 - 3.8	1.6 - 0.3	DO-204	
		1N3821A thru 1N3828A	/115	1.0 W	3.3 - 6.2	76 - 41	1.0 - 0.3	DO-202	
		1N4464 thru 1N4496	/406	1.5 W	6.2 - 200	40 - 1.2	0.35 - 12	A1	
		1N4954 thru 1N4996	/356	2.25 W	6.8 - 360	175 - 3	0.7 - 35	A248	
		1N2970 thru 1N2977							
		1N2979B thru 1N2980B							
		1N2982B							
		1N2984B thru 1N2986B							
		1N2988B thru 1N2993B	/124						
		1N2995B, 1N2997B							
	1N2999B thru 1N3005B								
	1N3007B thru 1N3009B								
	1N3011B thru 1N3012B								
	1N3014B thru 1N3015B								
			10 W (T _c = 55°C)	6.8 - 200	370 - 12	0.4 - 9.0	DO-4		

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

(2) Reference, temperature-compensated.

NOTICE 1

MIL-S-19500 DIODES, SILICON (Continued)

Description	Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Electrical Characteristics					Pkg Outline	Remarks
				P _z at T _A = 25°C	V _z (Nominal) at I _z		V _z (Reg) or delta BV (mV)	Pkg Outline		
					(V)	(mA)				
Zener- voltage regulator (Continued)		1N821-1				96				
		1N823-1				48				
		1N825-1	/159	250 mW	6.2		19			
		1N827-1					9			
		1N829-1					5			
		1N935B-1	/156	500 mW	9.0		184			
		1N937B-1 thru 1N939B-1	/156	500 mW	9.0		37 - 9			
		1N941B	/157	500 mW	11.7		239			
		1N943B	/157	500 mW	11.7		47			
		1N5629A thru 1N5665A	/500	1 W	6.8 - 200		10 - 1.0			
Zener- voltage suppressor		1N5907	/500	1 W	6.4		1.0			
		1N5611	/434	3 W	43.7		1.0			
		1N6103 thru 1N6137	/516	2 W	6.75 - 190		175 - 5.0			
Bidirectional voltage suppressor		1N6103A thru 1N6137A		2 W						
		1N6139 thru 1N6173		3 W						
	1N6139A thru 1N6173A		3 W							

(1) Refer to Appendix B for additional testing requirements for JANTX parts.

NOTICE 1

MIL-S-19500 DIODES, SILICON (Continued)

Description	Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Electrical Characteristics					Pkg Outline
				P _o (V)	I _p (mA) (Nom)	Z _T (MΩ)	Z _K (MΩ)	V _L (Vdc)	
FET current regulator	—	1N5283 thru 1N5314	/463	100	0.27 - 4.7	14 - 0.235	1.95 - 0.012	1.00 - 2.90	DO-204

Description	Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Electrical Characteristics										Pkg Outline	Remarks
				V ^(GRN) V(pk)	P _T (mW)	V ^(BR) (10 μA dc) (Vdc)	V _p at I _p (pk)		I _r at V _R		Carrier Lifetime (ps)	C _i (pF)			
							(V)	(mA)	(μA)	(V)					
Schotky barrier	—	1N5711	/444	50	250	70	1.0	15	0.2	50	100	2.0	A1	Hot carrier diode (Schotky)	
		1N5712	/445	16	250	20	1.0	35	0.15	16	100	1.2	A1		
		1N6391	/553	45	—	—	0.68	50A (2)	40 mA (2)	45	—	2000	DO-203AA	Pulsed Tests	
		1N6392	/554	45	—	—	0.68	60A (2)	60 mA (2)	45	—	3000	DO-203AB		

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

(2) T_c = 125°C, pulsed.

MIL-STD-975L (NASA) - Part I
NOTICE 1

MIL-S-19500 DIODES, SILICON (Continued)

Description	Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Electrical Characteristics							Pkg Outline	Remarks
				V _{RM} (V)	I _{HMAX} (mAdc)	I _O (A)	V _{KGM} V (pk)	V _{GT} (Vdc)	t _{on} (μs)			
Thyristor		2N2323A	276	50								TO-205 Low-power SCR
		2N2324A		100	2.2	2.0	0.22	6	0.1/0.8	1.0		
		2N2326A		200								
		2N2328A		300								

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

**MIL-STD-975L (NASA) - Part I
NOTICE 1**

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MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-M-38510, MICROCIRCUITS
Digital, Schottky, Low-Power TTL

Description	Generic Type (1)	Function	JAN Part Number (2)	
			M38510	Grade 1 Grade 2
Gates	54LS00	Quad, 2-input positive NAND	/30001	S*X B*X
	54LS02	NOR, quad 2-input	/30301	S*X(3) B*X
	54LS03	Quad, 2-input positive NAND (open collector outputs)	/30002	S*X B*X
	54LS04	Hex inverter	/30003	S*X B*X
	54LS05	Hex inverter (open collector outputs)	/30004	S*X B*X
	54LS08	AND, quad 2-input	/31004	S*X(3) B*X
	54LS09	AND, quad 2-input, open collector outputs	/31005	S*X B*X
	54LS10	Triple, 3-input positive NAND	/30005	S*X B*X
	54LS11	AND, triple 3-input	/31001	S*X B*X
	54LS14	Hex inverter Schmitt trigger	/31302	S*X(3) B*X
	54LS20	Dual, 4-input positive NAND	/30007	S*X(3) B*X
	54LS21	AND, dual 4-input	/31003	S*X B*X
	54LS27	NOR, triple 3-input	/30302	S*X B*X
	54LS30	Single, 8-input positive NAND	/30009	S*X B*X
	54LS32	OR, quad 2-input	/30501	S*X(3) B*X
	54LS51	AND-OR-invert, 2 wide 2 input & 2 wide 3 input	/30401	S*X(3) B*X
	54LS54	AND-OR-invert, 4-wide, 2-3-3-2-input	/30402	S*X(3) B*X
	54LS86	Exclusive-OR, quad 2-input	/30502	S*X B*X
	54LS132	Quad 2-input Schmitt trigger, positive NAND	/31303	S*X B*X
	54LS266	Exclusive-NOR, quad 2-input (open collector)	/30303	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.
(3) The only remaining QPL supplier for this device will no longer be producing this device type in this grade. These parts are not recommended for new designs. Consult with your supplier for final shipment dates and/or availability information.

MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-M-38510, MICROCIRCUITS
Digital, Schottky, Low-Power TTL (Continued)

Description	Generic Type (1)	Function	JAN Part Number (2)		Grade 2
			M38510	Grade 1	
Buffers	54LS26	Quad, 2-input inverter buffer/driver, 15 volt output	/32102	S*X(3)	B*X
	54LS37	Quad, 2-input positive NAND buffer	/30202	S*X(3)	B*X
	54LS38	Quad, 2-input positive NAND buffer (open collector outputs)	/30203	S*X(3)	B*X
	54LS40	Dual, 4-input positive NAND buffer	/30201	S*X(3)	B*X
Drivers	54LS125A	Quad, bus buffer (inverting control inputs)	/32301		B*X
	54LS126	Buffer, quad 3-state outputs	/32302		B*X
	54LS240	Octal, inverting buffer (inverting control inputs)	/32401	S*X(3)	B*X
	54LS241	Octal, noninverting buffer (complementary control inputs)	/32402		B*X
	54LS244	Noninverting Octal buffer gates (inverting control inputs)	/32403	S*X	B*X
	54LS365	Hex, bus driver, gated enable inputs for x-y coincident bus control	/32201	S*X(3)	B*X
	54LS366	Buffer/driver, Hex, inverting, with 3-state outputs	/32202	S*X(3)	B*X
	54LS367	Buffer/driver, Hex, noninverting, with 3-state outputs	/32203	S*X(3)	B*X
Counters	54LS368	Hex, inverter bus driver, 4-line and 2-line enable inputs	/32204	S*X(3)	B*X
	54LS90	Decade counter	/31501	S*X(3)	B*X
	54LS92	Divide-by-twelve counter	/31510		B*X
	54LS93	4-bit binary counter	/31502	S*X(3)	B*X
	54LS160A	Synchronous 4-bit decade (asynchronous clear)	/31503	S*X(3)	B*X
	54LS161A	Synchronous 4-bit binary (asynchronous clear)	/31504	S*X(3)	B*X
	54LS162A	Synchronous 4-bit decade (synchronous clear)	/31511		B*X
	54LS163A	Synchronous 4-bit binary counter (synchronous clear)	/31512	S*X(3)	B*X
	54LS190	Synchronous 4-bit decade counter (with mode control)	/31513	S*X(3)	B*X
	54LS191	Synchronous 4-bit up/down binary (mode control)	/31509	S*X(3)	B*X
	54LS192	Synchronous 4-bit up/down decade counter (dual clock with clear)	/31507		B*X
	54LS193	Synchronous 4-bit up/down binary (dual clock with clear)	/31508	S*X(3)	B*X
	54LS290	Decade counter (BCD or biquinary)	/32003		B*X
	54LS293	4-bit binary counter	/32004		B*X
	54LS390	Dual decade counter with A and B inputs	/32701		B*X
	54LS393	Dual 4-bit binary counter	/32702	S*X(3)	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.
 (3) The only remaining QPL supplier for this device will no longer be producing this device type in this grade. These parts are not recommended for new designs. Consult with the supplier for final shipment dates and/or availability information.

MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-M-38510, MICROCIRCUITS
Digital, Schottky, Fast TTL

Description	Generic Type (1)	Function	JAN Part Number (2)		
			M38510	Grade 1	Grade 2
Gates	54F00	Quad, 2-input positive NAND	/33001	S*X	B*X
	54F02	Quad, 2-input positive NOR	/33301	S*X	B*X
	54F04	Hex inverter	/33002	S*X	B*X
	54F08	AND, quad 2-input	/34001	S*X	B*X
	54F10	Triple, 3-input positive NAND	/33003	S*X	B*X
	54F11	Triple, 3-input positive AND	/34002	S*X	B*X
	54F20	Dual, 4-input positive NAND	/33004	S*X	B*X
	54F32	Quad, 2-input positive OR	/33501	S*X	B*X
Drivers	54F64	4-2-3-2 input, positive AND-OR-Invert	/33401	S*X	B*X
	54F86	XOR, quad 2-input	/34501	S*X	B*X
Counters	54F240	Octal buffers/line drivers with 3-state inverting outputs	/33201	S*X(3)	B*X
	54F241	Octal buffers/line drivers with 3-state outputs	/33202	S*X	B*X
	54F244	Octal buffers/line drivers with 3-state outputs	/33203	S*X	B*X
Flip-flops	54F160A	Synchronous 4-bit decade counter (asynchronous master reset)	/34401	S*X	B*X
	54F161A	Synchronous 4-bit binary counter (asynchronous master reset)	/34301	S*X	B*X
	54F163A	Synchronous presettable binary counter	/34302	S*X	B*X
	54F193	Up/down binary counter with separate up/down clocks	/34304	S*X	B*X
Counters	54F74	Dual D-type positive edge-triggered	/34101	S*X	B*X
	54F109	Dual, J-K positive edge-triggered	/34102	S*X(3)	B*X
	54F174	Hex, D-type positive edge-triggered	/34107	S*X	B*X
	54F175	Quad, D-type positive edge-triggered	/34104	S*X	B*X
	54F374	Octal, D-type positive edge-triggered with 3-state outputs	/34105	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.
 (3) The only remaining QPL supplier for this device will no longer be producing this device type in this grade. These parts are not recommended for new designs. Consult with the supplier for final shipment dates and/or availability information.

MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-M-38510, MICROCIRCUITS
Digital, Schottky, Fast TTL (Continued)

Description	Generic Type (1)	Function	JAN Part Number (2)	
			M38510	Grade 1
Latch	54F373	Octal transparent latch with active low enable	3-state outputs	B*X
	54F533	Octal transparent latch with active low enable	3-state outputs	B*X
Register	54F398	Quad, 2-port register with complementary outputs	S*X	B*X
	54F399	Quad, 2-port register	S*X	B*X
Adder/ Comparator	54F283	4-bit binary full adder with fast carry	S*X	B*X
	54F521	8-bit identity comparator	S*X	B*X
Decoders/ MUXs	54F138	1-of-8 decoder, active low outputs with enable inputs	S*X	B*X
	54F139	Dual 1-of-4 decoder, active low outputs with enable inputs	S*X	B*X
	54F151A	8-input multiplexer	S*X	B*X
	54F153	Dual 4-input multiplexer	S*X	B*X
	54F157A	Quad 2-input multiplexer	S*X	B*X
Combinational Transceiver	54F158A	Quad 2-input multiplexer with inverted outputs	S*X	B*X
	54F251A	8-input multiplexer with 3-state outputs	S*X	B*X
	54F253	Dual 4-input multiplexer with 3-state outputs	S*X	B*X
	54F257A	Quad 2-input multiplexer with 3-state outputs	S*X	B*X
	54F258A	Quad 2-input multiplexer with 3-state inverted outputs	S*X	B*X
	54F352	Dual 4-input multiplexer with inverted outputs	S*X	B*X
	54F353	Octal transparent latch with active low enable, 3-state outputs	S*X	B*X
	54F280	9-bit odd/even parity generator/checker	S*X	B*X
54F245	Octal noninverting bus transceiver w/ 3-state outputs	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-STD-975L (NASA) - Part I
NOTICE 1MIL-M-38510, MICROCIRCUITS
Digital, Interface

Description	Generic Type (1)	Function	JAN Part Number (2)		
			M38510	Grade 1	Grade 2
Digital to Analog Converters	DAC-08	8-bit D/A converters, 0.19% linearity	/11301	S*X	B*X
	DAC-08A	8-bit D/A converters, 0.10% linearity	/11302	S*X	B*X
	562	12 bit digital to analog converter, external reference	/12101		B*X
	565	12 bit digital to analog converter, internal reference, high speed	/12103		B*X
Analog to Digital Converters	7521	12 bit D/A converter with 10 bit end-point linearity	/12703		B*X
	561	10 bit binary D/A converter, internal reference	/13301		B*X
	574AT	12 bit, analog to digital converter with microprocessor interface	/14002		B*X
	574AU	12 bit, analog to digital converter with microprocessor interface	/14001		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-STD-975L (NASA) - Part I
NOTICE IMIL-M-38510, MICROCIRCUITS
Bipolar, Memories

Description	Generic Type (1)	Function	JAN Part Number (2)		
			M38510	Grade 1	Grade 2
RAM	93L422	Static, 256 x 4, Low power, 3-state output			B*X
	82S23	32 x 8 with open collector outputs			B*X(3)
	82S115	512 x 8 with 3-state outputs			B*X(3)
	82S123A	32 x 8 with 3-state output		S*X(3)	B*X(3)
	82S126	256 x 4 with open collector			B*X(3)
	82S129	256 x 4 with active pull-up and 3-state output		S*X(3)	B*X(3)
	82S129A	256 x 4 with active pull-up and 3-state output			B*X(3)
	82S130	512 x 4 with open collector			B*X(3)
	82S131	512 x 4 with active pull-up and 3-state output			B*X(3)
	82S131A	512 x 4 with active pull-up and 3-state output			B*X(3)
	82S137	1K x 4 with 3-state output			B*X(3)
	PROM	82S137A	1K x 4 with 3-state outputs		S*X(3)
82S141		512 x 8 with active pull-up and 3-state output			B*X(3)
82S181		1K x 8 with active pull-up and 3-state output		S*X(3)	B*X
82S181A		1K x 8 with active pull-up and 3-state output			B*X(3)
82S191		2K x 8 with active pull-up and 3-state output		S*X(3)	B*X
82S185		2K x 4 with active pull-up and 3-state output			B*X
82S185A		2K x 4 with active pull-up and 3-state output			B*X(3)
82S191A		2K x 8 with active pull-up and 3-state output		S*X(3)	B*X(3)

(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.

(3) The only remaining QPL supplier for this device will no longer be producing this device type in this grade. These parts are not recommended for new designs. Consult with the supplier for final shipment dates and/or availability information.

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GSFC S-311-P-18, THERMISTORS

Part Number Explanation:	311P18	-XX	X	XXX
GSFC Control Specification	Dash Number corresponds to the zero-power resistance of the thermistor @ +25°C Lead Material: S = 32 AG, type C per MIL-STD-1276 T = 28 AG, type ET per MIL-W-16878 N = 32 AG, type N-2 per MIL-STD-1276 E = insulated lead, TFE, 32 AG per MIL-1-22129; bare lead, style S; FEP tubing, M23053/11-105C			

Part Number	Control Specification	Temperature Coefficient	Seal	Zero Power Resistance (at +25°C) (Ohms)	Tolerance Limits (±%) (0 to +70°C)	Operating and Storage Temperature Limits(°C)	Thermal Time Constant (sec)Max	Dissipation Constant (mW/°C) Min	FRL Grades 1 and 2
311P18-01XXXX	GSFC S-311-P-18	Negative	Nonhermetic	2252	1.02	-55 to +90	10.0 (1)	1.0 (2)	(3)
311P18-02XXXX				2252	0.51	-55 to +70			
311P18-03XXXX				3000	1.02	-55 to +90			
311P18-04XXXX				3000	0.56	-55 to +70			
311P18-05XXXX	GSFC S-311-P-18	Negative	Nonhermetic	5000	1.02	-55 to +90	10.0 (1)	1.0 (2)	(3)
311P18-06XXXX				5000	0.51	-55 to +70			
311P18-07XXXX				10000	0.93	-55 to +90			
311P18-08XXXX				10000	0.56	-55 to +70			
311P18-09XXXX	GSFC S-311-P-18	Negative	Nonhermetic	30000	1.00	-55 to +90	10.0 (1)	1.0 (2)	(3)
311P18-10XXXX				30000	0.50	-55 to +70			

(1) For a thermistor suspended in still air, the thermal constant is 10.0 seconds maximum, except lead style "E": 25 seconds maximum.

(2) For thermistors suspended in still air only (does not apply for lead style "E").

(3) Parts may be used in Grades 1 and 2 applications.

(4) Standard lead lengths are from 7.6 cm to 100 cm. The lead length in centimeters (cm) is specified by three characters. For lengths from 7.6 cm to 9.9 cm the letter "R" is used as the decimal point (e.g., 7R6 (7.6)). For lengths 10 cm to 99 cm the letter "R" is used as the last character (e.g., 76R (76)). For 100 cm the characters are 101, where the last character signifies the number of zeros following the first two characters.

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MIL-STD-975L (NASA) - Part I
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SECTION 13: SUMMARY OF STANDARD TRANSISTORS

Page	Control Specification	Description	Type Designation	
			Grade 1	Grade 2 (1)
13.2	MIL-S-19500	Low-power, NPN	JANS	JANTXV
13.3		Low-power, PNP		
13.3		Matched pair, NPN, PNP		
13.4		High Power, NPN, PNP		
13.5	MIL-S-19500	Silicon RF, NPN, PNP	JANS	JANTXV
13.6		FETs, N-channel, P-channel		
13.7		Choppers		
13.8		Optocoupler		

Refer to MIL-HDBK-978, Vol. 2, for construction and application information.

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

MIL-STD-975L (NASA) - Part I
NOTICE 1

MIL-S-19500, TRANSISTORS
Silicon, Low Power (Less Than 2W)

Part Number Explanation:		X (1)		YN	BBBB		I
JAN	AAA	Radiation Hardness Assurance (RHA)		Component Designator	Identification Number	Suffix Letter	
Military Qualified	Quality Level S = Grade 1 TXV = Grade 2	RHA Designator	Total Dose Radiation Tolerance RAD (Si)	Level Neutron Fluence (n/cm)	Y = number one less than the number of active element terminations.	A, B, C, etc. (excluding L, M, R, S) - indicates a modified version which is substitutable for the non-suffixed device.	M - indicates matching of specified parameters of separate devices. R - indicates reverse polarity packaging of the non-suffixed device. L or S - indicates that the terminal leads are longer or shorter, respectively, than those of the non-suffixed device.
M			3×10^3	2×10^{12}			
D			1×10^4	2×10^{12}			
R			1×10^3	1×10^{12}			
H			1×10^6	1×10^{12}			

Grade 1 JANS	Grade 2 JANTXV (2)	Specification MIL-S-19500 Outline	Maximum Ratings				Electrical Characteristics				Switching Time	Remarks		
			P _T at T _A = +25°C	BV ^{CEO} (V)	BV ^{CES} (V)	I _C (A)	h _{FE} at I _C	V _{CE(SAT)} at I _C	I _{CEO} (Max) at V _{CE} (Max)	t _{on} (ns)			t _{off} (ns)	
Low Power NPN														
2N2219A,AL	2N2219A,AL	/251	800 mW	75	50	0.8	100/300	150 mA	1.0	500 mA	10 nA	35	300	Comp to 2N2905A
2N2222A	2N2222A	/255	500 mW	75	50	0.8	100/300	150 mA	1.0	500 mA	10 nA	35	300	Comp to 2N2907A
2N2369A	2N2369A	/317	360 mW	40	15	0.2	40/120	10 mA	0.2	10 mA	0.2 μA	12	18	F _T = 500 MHz min
2N2484	2N2484	/376	360 mW	60	60	0.05	225/800	10 mA	0.3	1.0 mA	5 nA	—	—	—
2N3019	2N3019,S	/391	800 mW	140	80	1.0	100/300	150 mA	0.2	150 mA	10(I _{CES}) nA	—	—	t _{on} + t _{off} = 30 ns
2N3418,S	2N3418,S	/393	1.0 W	85	60	3.0	20/60	1.0 A	0.25	1.0 A	—	300	1300	—
2N3419,S	2N3419,S	/393	1.0 W	125	80	3.0	20/60	1.0 A	0.25	1.0 A	—	300	1300	—
2N3420,S	2N3420,S	/393	1.0 W	85	60	3.0	40/120	1.0 A	0.25	1.0 A	—	300	1300	—
2N3735,L	—	/395	1.0 W	75	40	1.5	40/140	0.5 A	0.5	50 mA	100 nA @ 20V	43	115	—

- (1) Included only for JANTXV and JANS product assurance level devices.
- (2) Refer to Appendix B for additional testing requirements for JANTXV parts.

MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-S-19500, TRANSISTORS
Silicon, Low Power (Less Than 2W) (Continued)

Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Pkg Outline	Maximum Ratings			Electrical Characteristics					Switching Time	Remarks	
				P_T at $T_A = +25^\circ\text{C}$	BV_{CEO} (V)	BV_{CE0} (V)	I_C (A)	h_{FE} at I_C	$V_{CE(SAT)}$ at I_C	I_{CNO} (Max) at V_{CE} (Max)	t_{on} (ns)			t_{off} (ns)
Low Power PNP														
2N3421.S	2N3421.S	/393	TO-205	1.0 W	125	80	3.0	40/120	1.0 A	0.25	1.0 A	300	1300	—
2N3501L	2N3501L	/366	TO-205	1.0 W	150	150	0.3	100/300	150 mA	0.4	150 mA	115	1150	—
2N3700	2N3700	/391	TO-206	500 mW	140	80	1.0	100/300	150 mA	0.2	150 mA	550	2000	$t_{on} + t_{off} = 30 \text{ ns}$
2N4150.S	2N4150.S	/394	TO-205	1.5 W	100	70	10	40/120	5 A	0.6	5 A	550	2000	—
2N5237.S	—	/394	TO-205	1.5 W	150	120	10	40/120	5 A	0.6	5 A	550	2000	—
2N5238.S	—	/394	TO-205	1.5 W	200	170	10	40/120	5 A	0.6	5 A	550	2000	—
2N5666	2N5666	/455	TO-205	1.2 W	250	200	5	40/120	1 A	0.4	3 A	250	1500	—
2N5667	2N5667	/455	TO-205	1.2 W	400	300	5	25/75	1 A	0.4	3 A	250	2000	—
2N2605	2N2605	/354	TO-206	400 mW	70	60	0.03	100/300	0.010 mA	0.3	10 mA	45	300	low-noise amp
2N2905.A,AL	2N2905.A,AL	/290	TO-205	600 mW	60	60	0.6	100/300	150 mA	0.4	150 mA	45	300	Comp to 2N2219A
2N2907A	2N2907A	/291	TO-206	400 mW	60	60	0.6	100/300	150 mA	0.4	150 mA	45	300	Comp to 2N2222A
2N3251A	2N3251A	/323	TO-206	360 mW	60	60	0.2	100/300	10 mA	0.25	10 mA @ 40V	70	250	—
2N3468.L	2N3468.L	/348	TO-205	1.0 W	50	50	1.0	25/75	500 mA	0.6	500 mA @ 30V	40	90	—
2N3634.L	—	/357	TO-205	1.0 W	140	140	1.0	50/100	50 mA	0.6	50 mA @ 100V	200	650	—
2N3635.L	—	/357	TO-205	1.0 W	140	140	1.0	100/300	50 mA	0.6	50 mA @ 100V	200	650	—
2N3636.L	—	/357	TO-205	1.0 W	175	175	1.0	50/150	50 mA	0.6	50 mA @ 100V	200	650	—
2N3637.L	2N3637.L	/357	TO-205	1.0 W	175	175	1.0	100/300	50 mA	0.6	50 mA @ 100V	200	650	—
2N3764	2N3763.L	/396	TO-205	1.0 W	60	60	1.5	40/140	500 mA	0.5	500 mA @ 30V	43	115	—
2N3867.S	2N3867.S	/396	TO-205	0.5 W	60	60	1.5	40/140	0.5 A	0.5	50 mA @ 20V	43	115	—
2N3868.S	2N3868.S	/396	TO-206	500 mW	60	60	1.5	40/140	500 mA	0.5	500 mA @ 30V	43	115	—
2N3867.S	2N3867.S	/350	TO-205	1.0 W	40	40	3.0	40/200	1.5 A	0.75	1.5 A	100	600	—
2N3868.S	2N3868.S	/350	TO-205	1.0 W	60	60	3.0	30/150	1.5 A	0.75	1.5 A	100	600	—
2N5416.S	2N5416.S	/485	TO-205	750 mW	350	300	1.0	30/120	50 mA	2.0	50 mA	1000	10000	—
NPN Matched Pair														
2N2060	2N2060.L	/270	TO-78	600(both) mW	100	60	0.5	40/120	1 mA	0.3	50 mA	2 nA	—	h_{FE} matched $\pm 10\%$.
2N2919	2N2919.L	/355	TO-99	500(both) mW	70	60	0.03	60/240	10 μ A	0.3	1.0 mA	2 nA	—	V_{BE} matched $\pm 5 \text{ mV}$
2N2920	2N2920.L	/355	TO-99	500(both) mW	70	60	0.03	175/600	10 μ A	0.3	1.0 mA	2 nA	—	—
PNP Matched Pair														
2N3810	2N3810.L	/336	TO-78	600(both) mW	60	60	0.05	150/450	1 mA	0.25	1.0 mA	10 nA	—	h_{FE} matched $\pm 10\%$.
2N3811	2N3811.L	/336	TO-78	600(both) mW	60	60	0.05	300/900	1 mA	0.25	1.0 mA	10 nA	—	V_{BE} matched $\pm 5 \text{ mV}$

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

MIL-STD-975L (NASA) - Part I
NOTICE 1

MIL-S-19500, TRANSISTORS
Silicon, High-Power (Greater Than 2 W)

Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Pkg Outline	Maximum Ratings			Electrical Characteristics						Remarks	
				P_T at $T_c = +100^\circ\text{C}$ (W)	BV_{CEO} (V)	BV_{CE0} (V)	I_C (A)	h_{FE} at I_C	$V_{CE(sat)}$ at I_C	I_{CBO} (Max) at V_{CE} (Max)	Switching Time			
								Min/Max	(V)	(A)	(μs)	(μs)		
High-Power NPN														
	2N3716	/408	TO-204	85.7	100	80	10	50/150	1.0	1.0	5	1.5	2.4	Comp to 2N3792
	2N3749	/315	MT53	30	110	80	5	40/120	1.0	0.25	1	0.36	2.0	Similar to 2N2880. Isolated collector
	2N2880		MT53	30	110	80	5	40/120	1.0	0.25	1	0.3	1.7	
	2N3996	/374	TO-111	30	100	80	5	40/120	1.0	2.0	5	0.3	1.5	
	2N3997	/374	TO-111	30	100	80	5	80/240	1.0	2.0	5	0.3	2.0	
	2N5038	/439	TO-204	80	150	90	20	50/200	2.0	1.0	12	0.5	2.0	
	2N5039	/439	TO-204	80	125	75	20	30/150	2.0	1.0	1.0	0.5	2.0	
	2N5664	/455	TO-213	30	250	200	5	40/120	1.0	0.4	3	0.25	1.5	
	2N5665	/455	TO-213	30	400	300	5	25/75	1.0	0.4	3	0.25	2.0	
	2N5672	/488	TO-204	80	150	120	30	20/100	15.0	0.75	15	0.5	1.5	
	2N6308	/498	TO-204	62.5	700	350	8	12/60	3.0	1.5	3	0.60	3.0	
High-Power PNP														
	2N3740	/441	TO-213	14	60	60	4	30/120	0.25	0.6	1	0.4	1.0	
	2N3741	/441	TO-213	14	80	80	4	30/120	0.25	0.6	1	0.4	1.0	
	2N3792	/379	TO-204	85.7	80	80	10	50/150	1.0	1.0	5	1.5	2.4	Comp to 2N3716
	2N4399	/433	TO-204	115	60	60	30	25/—	15.0	1.0	15	1.2	2.5	
	2N5745	/433	TO-204	115	80	80	20	25/—	10.0	1.5	15	1.2	2.5	
	2N6546	/525	TO-204	100	—	300	15	12/60	5.0	1.5	10	1.0	4.7	Pulsed $V_{CE(sat)}$
	2N6547	/525	TO-204	100	—	400	15	12/60	5.0	1.5	10	1.0	4.7	Pulsed $V_{CE(sat)}$

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

MIL-STD-975L (NASA) - Part I
NOTICE 1

MIL-S-19500, TRANSISTORS
Silicon, RF Devices, NPN, PNP

Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Pkg Outline	Maximum Ratings		Electrical Characteristics					Remarks	
				P_T $T_C = +25^\circ\text{C}$ (W)	BV_{CBO} (Volts)	h_{FE} (Min/Max)	$ h_{fe} $ at f	P_{OUT} (Min/Max) (Watts)	P_{IN} (Watts)	f (MHz)		n (%)
NPN												
2N918	2N918	/301	TO-206	0.3	30	20/200	6/18	100	$G_{PE} = 15\text{db min}$	—	200	—
2N2857	2N2857	/343	TO-206	0.3	30	30/150	10/21	100	$G_{PE} = 12.5/21\text{ db}$	—	450	—
	2N3375	/341	TO-60	11.6	65	15/150	3.5 min	100	7.5/14	1	100	65
	2N3553	/341	TO-205	7.0	65	15/150	3.5 min	100	2.5/5	0.25	175	50
	2N3866	/398	TO-205	1.0 @ $T_A = 25^\circ\text{C}$	60	15/200	2.5/8	200	1.0/2.0	0.15	400	45
2N3866A	—	/398	TO-205	1.0 @ $T_A = 25^\circ\text{C}$	60	25/200	2.5/8	200	1.0/2.0	0.15	400	45
2N5109	—	/453	TO-39	1.0 W	40	40/120	6/11	200	$G_{PE} = 11\text{dB}$	10dBm	200	—
PNP												
	2N4957	/426	TO-206	0.2 @ $T_A = 25^\circ\text{C}$	30	30/165	12/36	100	$G_{PE} = 17/25\text{ db}$	—	450	—

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

MIL-STD-975L (NASA) - Part I
NOTICE 1

MIL-S-19500, TRANSISTORS
Silicon, Field Effect

Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Pkg Outline	Maximum Ratings				Electrical Characteristics					Remarks		
				P_{TAL} $T_A = +25^\circ C$ (mW)	V_{DG} (V)	V_{GS} (V)	I_G (mA)	$V_{GS}^{(OFF)}$ (Min/Max) (V)	I_{DSS} ($V_{GS}=0$) (Min/Max) (mA)	$r_{DS(ON)}$ Max (Ohm)	y_g (μmho)	C_{iss} Max (pF)		C_{oss} Max (pF)	
N-Channel															
2N3821	2N3821	/375	TO-206	300	50	50	10	-4 max	0.5/2.5	—	1500/4500	6.0	3.0	$ y_g $ @ 1 kHz	
2N3822	2N3822	/375	TO-206	300	50	50	10	-6 max	2/10	—	3000/6500	6.0	3.0	$ y_g $ @ 1 kHz	
	2N3823	/375	TO-206	300	30	30	10	-8 max	4/20	—	3500/6500	6.0	2.0	$ y_g $ @ 1 kHz	
	2N4416A	/428	TO-206	300	35	35	10	-2.5/-6.0	5/15	—	4500/7500	4.0	0.8	$ y_g $ @ 1 kHz	
	2N4856	/385	TO-206	360	40	40	50	-4/-10	50/175	25	—	18	8.0	Analog Sw/Chopper	
	2N4857	/385	TO-206	360	40	40	50	-2/-6	20/100	40	—	18	8.0	Analog Sw/Chopper	
	2N4858	/385	TO-206	360	40	40	50	-0.8/-4	8/80	60	—	18	8.0	Analog Sw/Chopper	
N-Channel Radiation Hardened															
2N7261	—	/601	TO-205	800	100	100	—	—	-/-0.050	0.180	—	—	—	—	Radiation Level R
2N7262	—	/601	TO-205	800	200	200	—	—	-/-0.050	0.400	—	—	—	—	Radiation Level H
2N7268	—	/603	TO-254	4000	100	100	—	—	-/-0.050	0.070	—	—	—	—	Radiation Level R
2N7269	—	/603	TO-254	4000	200	200	—	—	-/-0.050	0.115	—	—	—	—	Radiation Level H
P-Channel															
	2N5114	/476	TO-206	500	30	30	50	5/10	-30/-90	75	—	25	7.0	Analog Sw/Chopper	
	2N5115	/476	TO-206	500	30	30	50	3/6	-15/-60	100	—	25	7.0	Analog Sw/Chopper	
	2N5116	/476	TO-206	500	30	30	50	1/4	-5/-25	175	—	27	7.0	Analog Sw/Chopper	
	2N6804	/562	TO-204	4000	-100	-100	—	—	-/-0.025	0.3	—	800	200	—	—
	2N6806	/562	TO-204	4000	-200	-200	—	—	-/-0.025	0.8	—	800	90	—	—
	2N6845	/563	TO-205	800	-100	-100	—	—	-/-0.025	0.6	—	400	100	—	—
	2N6847	/563	TO-205	800	-200	-200	—	—	-/-0.025	1.50	—	400	45	—	—

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

MIL-STD-975L (NASA) - Part I
NOTICE 1

MIL-S-19500, TRANSISTORS
Silicon, Chopper

	Grade 1 JANS	Grade 2 JANTXV (1)	Specification MIL-S-19500	Pkg Outline	Maximum Ratings			Electrical Characteristics				Remarks	
					P_T at $T_A = +25^\circ\text{C}$ (mW)	BV_{CEO} (V)	BV_{CBO} (V)	I_C (mA)	h_{FE} at I_C		$V_{EC(EN)}$ at $I_E = 0$		$r_{ec(en)}$
	2N2432A	2N2432A	/313	TO-206	300	45	45	100	Min/Max (mA)	Min/Max (mV)	I_B (mA)	Min/Max (Ohms)	NPN
	2N2945A	2N2945A	/382	TO-206	400	-25	-20	-100	70/—	-/-1.0	-1	-/15	PNP

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

MIL-STD-975L (NASA) - Part I
NOTICE 1MIL-S-19500, TRANSISTORS
Optocoupler

Grade	Grade 2 JANTXV (1)	Specification MIL-S-19500	Pkg Outline	Maximum Ratings				Electrical Characteristics						Remarks				
				P_T at $T_A = +25^\circ\text{C}$ (W)	V_{CE0} (Max) (V)	V_R (Max) (V)	I_C Max (mA)	I_F Max (mA)	$I_{Q(ON)}$ $V_{CE} = 5.0$ V		$V_{CE(SAT)}$ @ I_C & I_F		$I_{Q(OFF)}$ @ V_{CE} I_C & $I_B = 0$					
Grade 1 JANS	4N23	/486	PH13	0.3	35	2	50	40	6.0/—	10	—/0.3	5	20	—/100	20	The designation A denotes isolated phototransistor.		
	4N23A	/486			35				6.0/—	10							5	20
	4N24	/486			35				10.0/—	10							10	20
	4N24A	/486			35				10.0/—	10							10	20
	4N47	/548			0.5/—				—	—							0.5	2.0
	4N48	/548			1.0/5.0				—	—							1.0	2.0
4N49	/548	2.0/10.0	—	—	2.0	2.0												

(1) Refer to Appendix B for additional testing requirements for JANTXV parts.

MIL-STD-975L (NASA) - Part II
NOTICE 1

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975 Part II, Section 21, Advanced Microcircuit Parts Listing.

Microcircuit Information

Part Numbering System for NASA Detail Part Specifications:

Specification Number		Part Number					
NA62	X	XX	XXX	XX	S	X	X
Stock Class Designator	Total Dose Radiation Hardness Designator	Drawing Number Year	Drawing Number	Type Number	Class Designator	Package Designator	Lead Finish Designator
NA62 is the designator for microcircuits based on the Federal Stock Class.	3 krad M 5 krad N 10 krad D 20 krad E 30 krad F 50 krad G 100 krad R 200 krad S 300 krad T 500 krad U 1000 krad H	Last two digits of the year the drawing number was assigned.	Sequential drawing number within the fiscal year.	The type number within the drawing.	Class S- Equivalent	Package designator per MIL-M-38510.	Lead finish per MIL-M-38510.

Package Type Abbreviations:

DIP = Dual In-line Package; FP = Flatpack Package; LCC = Leadless Chip Carrier; PGA = Pin Grid Array.

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ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

INTERFACE HYBRID MICROCIRCUITS (46 parts)

SPECIFICATION		PART					Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads			
MIL-STD-1553 (1553) Driver-Receiver, Single Ch.	5962-86049 DESC	ILC#	02TX	BUS-63106II	FP	24	H	NA	-15 V
1553 Driver-Receiver, Single Ch.	5962-86049 DESC	ILC#	02ZX	BUS-63105II	DIP	24	H	NA	-15 V
1553 Driver-Receiver, Single Ch.	5962-86049 DESC	ARX#	03YX	ARX-2402	DIP	24	H	NA	+/-15 V
1553 Driver-Receiver, Single Ch.	5962-86049 DESC	NHI#	06YX	NHI-1509	DIP	24	H	NA	+15 V
1553 Dual Redundant Remote Terminal Unit (RTU)	5962-87535 DESC	ILC#	01XX	BUS-65112	Hybrid	78	H	NA	+/-15 V
1553 Dual Redundant RTU	5962-87535 DESC	ILC#	01YX	BUS-65117	FP	82	H	NA	+/-15 V
1553 Driver-Receiver, Dual Ch.	5962-87579 DESC	ILC#	02XX	BUS-63125II	DIP	36	H	NA	-15 V
1553 Driver-Receiver, Dual Ch.	5962-87579 DESC	ILC#	02YX	BUS-63126II	FP	36	H	NA	-15 V
1553 Driver-Receiver, Dual Ch.	5962-87579 DESC	MRL#	08XX	MR63125MPR	DIP	36	H	NA	-15 V
12-Bit Data Acquisition System (DAS)	5962-88514 DESC	Sipex#	01XX	HS9403B-8	Quad	62	H	NA	+/-15 V
12-Bit DAS	5962-88514 DESC	Sipex#	02XX	HS9403B-16	Quad	62	H	NA	+/-15 V
1553 Bus Controller (BC), RTU, and Monitor Unit (MT) Dual Redundant	5962-88585 DESC	ILC#	01XX	BUS-65600	DIP	78	H	NA	+5 V
1553 Bus-to-Microprocessor Interface Unit	5962-88586 DESC	ILC#	01XX	BUS-66300II-883B	DIP	78	H	NA	+7 V
1553 Bus-to-Microprocessor Interface Unit	5962-88586 DESC	ILC#	01YX	BUS-66301II-883B	FP	82	H	NA	+7 V

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

INTERFACE HYBRID MICROCIRCUITS (cont'd)

SPECIFICATION		PART					Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads			
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	01XC	BUS-61553	DIP	78	H	NA	+5, -15 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	01XX	BUS-61553	DIP	78	H	NA	+5, -15 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	01XX	BUS-61563	DIP	78	H	NA	+5, -15 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	01YA	BUS-61563	FP	82	H	NA	+5, -15 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	01YC	BUS-61563	FP	82	H	NA	+5, -15 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	01YX	BUS-61563	FP	82	H	NA	+5, -15 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	02XA	BUS-61554	DIP	78	H	NA	+5, -12 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	02XC	BUS-61554	DIP	78	H	NA	+5, -12 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	02XX	BUS-61554	DIP	78	H	NA	+5, -12 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	02YC	BUS-61564	FP	82	H	NA	+5, -12 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	03XC	BUS-61555	DIP	78	H	NA	+5 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	03YC	BUS-61565	FP	82	H	NA	+5 V
1553 BC/RTU/MT Multiplexed Terminal	5962-88692 DESC	ILC#	04XC	BUS-61556	DIP	78	H	NA	+5 V
1553 Driver-Receiver, Dual Ch. Receiver Idle	5962-89447 DESC	ILC#	04HXX	BUS-63135II	DIP	36	H	NA	-15 V

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ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

INTERFACE HYBRID MICROCIRCUITS (cont'd)

SPECIFICATION		PART				Quality Level	Radiation (TID)	Supply Voltage	
Title	No./Source	Vendor	Type Number	Generic Type	Package				Leads
1553 Driver-Receiver, Dual Ch. Receiver Idle	5962-89447 DESC	ILC#	04HYX	BUS-63136II	FP	36	H	NA	-15 V
1553 Transceiver, Dual Ch.	5962-89522 DESC	ARX#	02XX	ARX-2453	DIP	36	H	NA	+5 V
Dual 8 Channel MUX w/Precision Sample	5962-89565 DESC	Sipex#	01XX	HS362SB	DIP	32	H	NA	+/-15 V
Dual Redundant RTU	5962-89798 DESC	ILC#	01XX	BUS-65142	Hybrid	78	H	NA	+5 V
Dual Redundant RTU	5962-89798 DESC	ILC#	01YX	BUS-65144	FP	82	H	NA	+5 V
Dual Redundant RTU	5962-89798 DESC	ILC#	02XX	BUS-65143	Hybrid	78	H	NA	+5 V
Dual Redundant RTU	5962-89798 DESC	ILC#	02YX	BUS-65145	FP	82	H	NA	+5 V
1553 Driver-Receiver, Dual Ch.	5962-89826 DESC	ILC#	01XX	BUS-63127II	DIP	36	H	NA	-12 V
1553 Driver-Receiver, Dual Ch.	5962-89826 DESC	ILC#	01YX	BUS-63128II	FP	36	H	NA	-12 V
1553 Data Terminal Bit Processor	5962-90636 DESC	MED#	01HYX	CT1820F	FP	60	H	NA	+5 V
1553 Data Terminal Bit Processor	5962-90636 DESC	MED#	02HYX	CT1820-2F	FP	60	H	NA	+5 V
1553 Data Terminal Bit Processor	5962-90636 DESC	ARX#	03HXX	ARX2410	Plug-In	56	H	NA	+5 V
1553 Data Terminal Bit Processor	5962-90636 DESC	ARX#	04HXX	ARX3410	Plug-In	56	H	NA	+5 V
1553 MUX Bus RT	5962-91687 DESC	NHI#	01HXX	NHI-1553RT	DIP	66	H	NA	+5 V

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 2.1, Advanced Microcircuit Parts Listing.

INTERFACE HYBRID MICROCIRCUITS (cont'd)

SPECIFICATION		PART						Quality Level	Radiation (TID)	Supply Voltage
		No./Source	Vendor	Type Number	Generic Type	Package	Leads			
1553 MUX Bus RT	5962-91687 DESC	NHI#	01HYX	NHI-1553RTFP	FP	66	H	NA	+5 V	
1553 MUX Bus RT	5962-91687 DESC	NHI#	02HXX	NHI-1554RT	DIP	66	H	NA	+5 V	
1553 MUX Bus RTU	5962-91687 DESC	NHI#	02HYX	NHI-1554RTFP	FP	66	H	NA	+5 V	
16 Channel MUX/DeMUX	PT40872 JPL	HAR	None	HS 1840	FP	28	S-Equi	200 Krad	+15 V	

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ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

INTERFACE MONOLITHIC MICROCIRCUITS (1 part)

SPECIFICATION		PART				Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package			
1553B BC/RT/M	NA62R91006 JPL	UNT@	01SKC	UT1553B BCRTMWSR	FP	84	100 Krad	+7 V

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

ANALOG-TO-DIGITAL HYBRID MICROCIRCUITS (29 parts)

SPECIFICATION		PART					Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads			
12-Bit A/D Converter (ADC)	5962-88508 DESC	Datel#	01XX	ADC-HX	DIP	32	H	NA	+/-15 V
12-Bit ADC	5962-88508 DESC	Datel#	02XX	ADC-HZ	DIP	32	H	NA	+/-15 V
12-Bit ADC	5962-88508 DESC	MN#	02XX	MNADC87H/B	DIP	32	H	NA	+/-15 V
12-Bit ADC Track and Hold	5962-88542 DESC	ILC#	01XX	ADC-00300-112	DIP	40	H	NA	+/-15 V
12-Bit ADC	5962-88658 DESC	ADI#	01XX	AD578SD	DIP	32	H	NA	+/-15 V
12-Bit ADC	5962-88658 DESC	ADI#	02XX	AD578TD	DIP	32	H	NA	+/-15 V
12-Bit ADC	5962-88658 DESC	ADI#	03XX	AD578ZSD	DIP	32	H	NA	+/-12 V
12-Bit ADC	5962-88658 DESC	ADI#	04XX	AD578ZTD	DIP	32	H	NA	+/-15 V
12-Bit ADC	5962-89569 DESC	MN#	01HXX	MN5295H/B	DIP	32	H	NA	+/-15 V
12-Bit ADC	5962-89583 DESC	MN#	01YX	MN5200H/B	DIP	24	H	NA	+/-15 V
12-Bit ADC	5962-89583 DESC	MN#	02YX	MN5203H/B	DIP	24	H	NA	+/-15 V
12-Bit ADC	5962-89583 DESC	MN#	03YX	MN5201H/B	DIP	24	H	NA	+/-15 V
12-Bit ADC	5962-89583 DESC	MN#	04YX	MN5204H/B	DIP	24	H	NA	+/-15 V
12-Bit ADC	5962-89583 DESC	MN#	05YX	MN5202H/B	DIP	24	H	NA	+/-15 V

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WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

ANALOG-TO-DIGITAL HYBRID MICROCIRCUITS (contd)

SPECIFICATION		PART						Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads				
12-Bit ADC	5962-89583 DESC	MN#	06YX	MN5205H/B	DIP	24	H	NA	+/-15 V	
12-Bit ADC	5962-89583 DESC	MN#	07YX	MN5206H/B	DIP	24	H	NA	+/-15 V	
12-Bit ADC	5962-89584 DESC	MN#	01YX	MN5210H/B	DIP	24	H	NA	+/-15 V	
12-Bit ADC	5962-89584 DESC	MN#	02YX	MN5213H/B	DIP	24	H	NA	+/-15 V	
12-Bit ADC	5962-89584 DESC	MN#	03YX	MN5211H/B	DIP	24	H	NA	+/-15 V	
12-Bit ADC	5962-89584 DESC	MN#	04YX	MN5214H/B	DIP	24	H	NA	+/-15 V	
12-Bit ADC	5962-89584 DESC	MN#	05YX	MN5212H/B	DIP	24	H	NA	+/-15 V	
12-Bit ADC	5962-89584 DESC	MN#	06YX	MN5215H/B	DIP	24	H	NA	+/-15 V	
12-Bit ADC	5962-89584 DESC	MN#	07YX	MN5216H/B	DIP	24	H	NA	+/-15 V	
12-Bit ADC	5962-89595 DESC	MN#	01XX	MN5245H/B	DIP	40	H	NA	+/-15 V	
12-Bit ADC	5962-89595 DESC	MN#	02XX	MN5245AH/B	DIP	40	H	NA	+/-15 V	
12-Bit ADC	5962-89595 DESC	MN#	03XX	MN5246H/B	DIP	40	H	NA	+/-15 V	
12-Bit ADC	5962-89595 DESC	MN#	04XX	MN5246AH/B	DIP	40	H	NA	+/-15 V	
16-Bit High Speed ADC	5962-90795 DESC	Sipex#	01HXX	HS9576S/B	DIP	32	H	NA	+/-15 V	

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ANALOG-TO-DIGITAL HYBRID MICROCIRCUITS (contd)

SPECIFICATION		PART					Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads			
16-Bit High Speed ADC	5962-90795 DESC	Sipex#	02HXX	HS9576T/B	DIP	32	H	+/-15 V	

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ANALOG-TO-DIGITAL MONOLITHIC MICROCIRCUITS (1 part)

SPECIFICATION		PART				Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package			
16-Bit ADC	S-311-P-704 GSFC	Crystal	None	CS5016	DIP	40	S-Equi 10 Krad	+/-6 V

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

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DIGITAL-TO-ANALOG HYBRID MICROCIRCUITS (20 parts)

SPECIFICATION		PART						Quality Level	Radiation (TID)	Bits
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads				
12-Bit D-to-A Range Programmable Voltage	83002 DESC	ADI#	01JX	DAC87	DIP	24	H	NA	12	
12-Bit DAC Bipolar Linear Quad	5962-88509 DESC	ADI#	01XX	AD390SD	DIP	28	H	NA	12	
12-Bit DAC Bipolar Linear Quad	5962-88509 DESC	ADI#	02XX	AD390TD	DIP	28	H	NA	12	
12-Bit DAC Bipolar Quad	5962-88510 DESC	ADI#	01XX	AD394SD	DIP	28	H	NA	12	
12-Bit DAC Bipolar Quad	5962-88510 DESC	ADI#	02XX	AD394TD	DIP	28	H	NA	12	
12-Bit DAC Bipolar Quad	5962-88510 DESC	ADI#	03XX	AD395SD	DIP	28	H	NA	12	
12-Bit DAC Bipolar Quad	5962-88510 DESC	ADI#	04XX	AD395TD	DIP	28	H	NA	12	
14-Bit DAC De-glitched	5962-88517 DESC	ILC#	01XA	DAC02310-112	DIP	32	H	NA	14	
14-Bit DAC De-glitched	5962-88517 DESC	ILC#	01XC	DAC02310-112	DIP	32	H	NA	14	
14-Bit DAC De-glitched	5962-88517 DESC	ILC#	01YA	DAC02311-112	FP	32	H	NA	14	
14-Bit DAC De-glitched	5962-88517 DESC	ILC#	01YC	DAC02311-112	FP	32	H	NA	14	
14-Bit DAC De-glitched	5962-88517 DESC	ILC#	02XA	DAC02310-113	DIP	32	H	NA	14	
14-Bit DAC De-glitched	5962-88517 DESC	ILC#	02XC	DAC02310-113	DIP	32	H	NA	14	
14-Bit DAC De-glitched	5962-88517 DESC	ILC#	02YA	DAC02311-113	FP	32	H	NA	14	

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ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

DIGITAL-TO-ANALOG HYBRID MICROCIRCUITS (cont'd)

SPECIFICATION		PART					Quality Level	Radiation (TID)	Bits
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads			
14-Bit DAC De-glitched	5962-88517 DESC	ILC#	02YC	DAC02311-113	FP	32	H	NA	14
12-Bit DAC Binary Input Code	5962-89528 DESC	Date#	01XX	DAC HKB	DIP	24	H	NA	12
12-Bit DAC 2s Complement	5962-89528 DESC	Date#	02XX	DAC HKB-2	DIP	24	H	NA	12
16-Bit DAC	5962-89531 DESC	Date#	01HXX	DAC HPB	DIP	24	H	NA	16
16-Bit DAC	5962-89531 DESC	Date#	02HXX	DAC HPB-1	DIP	24	H	NA	16
16-Bit Track and Hold Amplifier	5962-90630 DESC	Sipex#	01HXX	SP9760B	DIP	24	H	NA	16

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

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DIGITAL-TO-SYNCHRO HYBRID MICROCIRCUITS (4 parts)

SPECIFICATION		PART							Quality Level	Radiation (TID)	Bits
		No./Source	Vendor	Type Number	Generic Type	Package	Leads				
Title											
16-Bit Digital-to-Synchro and Digital-to-Resolver Converter	5962-89986 DESC	ILC#	01HXX	DSC-11520-112	DIP	36	H	NA	16		
16-Bit Digital-to-Synchro and Digital-to-Resolver Converter	5962-89986 DESC	ILC#	02HXX	DSC-11520-113	DIP	36	H	NA	16		
16-Bit Digital-to-Synchro and Digital-to-Resolver Converter	5962-89986 DESC	ILC#	03HXX	DSC-11520-114	DIP	36	H	NA	16		
16-Bit Digital-to-Synchro and Digital-to-Resolver Converter	5962-89986 DESC	ILC#	04HXX	DSC-11520-115	DIP	36	H	NA	16		

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

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PROCESSORS/CONTROLLERS and PERIPHERALS MONOLITHIC MICROCIRCUITS (44 parts)

SPECIFICATION Title	No./Source	PART				Quality Level	Radiation (TID)	Bits	
		Vendor	Type Number	Generic Type	Package				Leads
16-Bit Parallel EDAC	54HSC/T630 MED	MED#	None	54HSC/T630	DIP	28	S-Equi	1 Mrad	16
16-Bit Parallel EDAC	54HSC/T630 MED	MED#	None	54HSC/T630	FP	28	S-Equi	1 Mrad	16
32-Bit 20 MHz Microprocessor	5962-87668 DESC	INT**	03QXX	80386-20	PGA	132	Q	2.5 Krad	32
32-Bit 20 MHz Microprocessor	5962-87668 DESC	INT**	03QYX	80386	LCC	164	Q	2.5 Krad	32
32-Bit 20 MHz Microprocessor	5962-87668 DESC	INT**	04QXX	80386	PGA	132	Q	2.5 Krad	32
32-Bit 20 MHz Microprocessor	5962-87668 DESC	INT**	04QYX	80386	LCC	164	Q	2.5 Krad	32
80-Bit 20 MHz Numeric Processor Extension	5962-89534 DESC	INT**	02QYX	MQ80387Q-20/Q	FP	68	Q	NA	80
80-Bit 25 MHz Numeric Processor Extension	5962-89534 DESC	INT**	03QYX	MQ80387Q-25/Q	FP	68	Q	NA	80
16-Bit Digital Signal Processor	5962-90704 DESC	AT&T**	01QXX	WE-DSP-16	PGA	133	Q	1 Mrad	16
16-Bit 1750 Microprocessor, Fixed Point	5962-92026 DESC	IBM**	01QZX	FXPC-Q49F	FP	220	Q	2 Mrad	16
16-Bit 1750 Microprocessor, Fixed Point	5962-92026 DESC	IBM**	01VZX	FXPC-V49F	FP	220	V	2 Mrad	16
16-Bit 1750 Microprocessor, Floating Point	5962-92103 DESC	IBM**	01QZX	MFLPC-Q47F	LCC	220	Q	2 Mrad	16
16-Bit 1750 Microprocessor, Floating Point	5962-92103 DESC	IBM**	01VZX	MFLPC-V47F	LCC	220	V	2 Mrad	16
1750 Microprocessor Address Processor 1	5962-92104 DESC	IBM**	01QZX	176A685	FP	220	Q	2 Mrad	NA

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 2.1, Advanced Microcircuit Parts Listing.

PROCESSORS/CONTROLLERS and PERIPHERALS MONOLITHIC MICROCIRCUITS (cont'd)

SPECIFICATION		PART					Quality Level	Radiation (TID)	Bits
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads			
1750 Microprocessor Address Processor 1	5962-92104 DESC	IBM**	01VZX	176A685	FP	220	V	2 Mrad	NA
1750 Microprocessor Address Processor 2	5962-92106 DESC	IBM**	01QZX	165A984	FP	220	Q	2 Mrad	NA
1750 Microprocessor Address Processor 2	5962-92106 DESC	IBM**	01VZX	165A984	FP	220	V	2 Mrad	NA
16-Bit Parallel EDAC	ACS630MS HAR	HAR	None	ACS630MS	DIP	28	S-Equi	1 Mrad	16
16-Bit Parallel EDAC	ACS630MS HAR	HAR	None	ACS630MS	FP	28	S-Equi	1 Mrad	16
16-Bit Parallel EDAC	ACTS630MS HAR	HAR	None	ACTS630MS	DIP	28	S-Equi	1 Mrad	16
16-Bit Parallel EDAC	ACTS630MS HAR	HAR	None	ACTS630MS	FP	28	S-Equi	1 Mrad	16
8-Bit Microprocessor	CS515800 JPL	HAR	1	80C85	FP	42	S-Equi	100 Krad	8
Peripheral to 80C85 (2K-Bit SRAM with I/O and Timer)	CS515801 JPL	HAR	1	81C55	FP	42	S-Equi	100 Krad	2K
Programmable DMA Controller	HS-82C37ARH HAR	HAR	None	HS-82C37ARHR	FP	42	S-Equi	100 Krad	16
5 MHz Priority Interrupt Controller	NA62-91003 JPL	HAR	01S3A	MR82C59A	LCC	28	S-Equi	NA	24
5 MHz Priority Interrupt Controller	NA62-91003 JPL	HAR	01S3C	MD82C59A	DIP	28	S-Equi	NA	24
16-Bit Microprocessor	NA62R91001 JPL	HAR	01SQC	HS1-80C86RH	DIP	40	S-Equi	100 Krad	16
16-Bit Microprocessor	NA62R91001 JPL	HAR	01SXC	HS9-80C86RH	FP	42	S-Equi	100 Krad	16

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

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PROCESSORS/CONTROLLERS and PERIPHERALS MONOLITHIC MICROCIRCUITS (cont'd)

SPECIFICATION		PART						Quality Level	Radiation (TID)	Bits
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads				
5 MHz Programmable Interval Timer	NA62R91002 JPL	HAR	01SJC	HS1-82C54RH	DIP	24	S-Equi	100 Krad	16	
5 MHz Programmable Interval Timer	NA62R91002 JPL	HAR	01SKC	HS9-82C54RH	FP	24	S-Equi	100 Krad	16	
5 MHz Static Clock Controller/Generator	NA62R91004 JPL	HAR	01SJC	HS1-82C85RH	DIP	24	S-Equi	100 Krad	24	
5 MHz Static Clock Controller/Generator	NA62R91004 JPL	HAR	01SKC	HS9-82C85RH	FP	24	S-Equi	100 Krad	24	
Priority Interrupt Controller	S-311-P-708 GSFC	HAR	1	82C59A-1	FP (shielded)	28	S-Equi	100 Krad	24	
16-Bit 8 MHz Microcontroller	S-311-P-721 GSFC	HAR	001	RTX2010RH-Q	FP	84	S-Equi	1 Mrad	16	
16-Bit 8 MHz Microcontroller	S-311-P-721 GSFC	HAR	002	RTX2010RH-Q	PGA	84	S-Equi	1 Mrad	16	
16-Bit Microprocessor	SSQ22662 SSF	HAR	01SQX	HS-80C86RH	DIP	40	S-Equi	100 Krad	16	
Programmable Interval Timer	SSQ22663 SSF	HAR	01SJX	HS-82C54RH	DIP	24	S-Equi	100 Krad	16	
5 MHz Programmable Interrupt Controller	SSQ22665 SSF	HAR	01SYX	MDR2C59A-5/B	DIP	28	S-Equi	NA	24	
16-Bit Microprocessor	SSQ22667 SSF	INT**	001	SQ80C186-12	Quad FP	68	S-Equi	NA	16	
32-Bit Microprocessor	SSQ22668 SSF	INT**	001	SQ80386-25	Quad FP	164	S-Equi	2.5 Krad	32	
80-Bit Numeric Processor	SSQ22669 SSF	INT**	001	SQ80387-25	FP	68	S-Equi	NA	80	
Multi-Bus II Interface Controller	SSQ22670 SSF	INT**	001	SQ82389	Quad FP	164	S-Equi	NA	32	

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

PROCESSORS/CONTROLLERS and PERIPHERALS MONOLITHIC MICROCIRCUITS (contd)

SPECIFICATION		PART						Quality Level	Radiation (TID)	Bits
		No./Source	Vendor	Type Number	Generic Type	Package	Leads			
1553 Bus Controller, Remote Terminal	SSQ22673-001 SSF	UNT@	001	UT1553BBERT WS	FP	84	S-Equi	NA	16	
32-Bit DMAC	SSQ22692 SSF	INT**	001	82380-25	LCC	164	S-Equi	NA	32	

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 2.1, Advanced Microcircuit Parts Listing.

RESOLVER/SYNCHRO-TO-DIGITAL CONVERTERS HYBRID MICROCIRCUITS (20 parts)

SPECIFICATION		PART						Quality Level	Radiation (TID)	Accuracy (Arc Min)
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads				
14-Bit 11.8 V Resolver or Synchro-to-Digital Converter	5962-87687 DESC	ILC#	01XX	HSDC-8920A	DIP	36	H	NA	+/-2.6	
14-Bit 11.8 V Resolver or Synchro-to-Digital Converter	5962-87687 DESC	ILC#	02XX	HSDC-8920	DIP	36	H	NA	+/-4.0	
90.0 V Synchro-to-Digital Converter	5962-89498 DESC	ILC#	01XX	SDC14561-114	DIP	36	H	NA	+/-2.0	
90.0 V Synchro-to-Digital Converter	5962-89498 DESC	ILC#	02XX	SDC14561-115	DIP	36	H	NA	+/-1.0	
16-Bit 11.8 V Synchro-to-Digital Converter	5962-89499 DESC	ILC#	03XX	SDC14560-605	DIP	36	H	NA	+/-2.0	
16-Bit 11.8 V Synchro-to-Digital Converter	5962-89908 DESC	ILC#	03XX	SDC14565-616	DIP	36	H	NA	+/-2.0	
16-Bit 1.0 V Direct Resolver-to-Digital	5962-90551 DESC	ILC#	01XX	SDC14567-111	DIP	36	H	NA	+/-6.0	
16-Bit 1.0 V Direct Resolver-to-Digital	5962-90551 DESC	ILC#	02XX	SDC14567-112	DIP	36	H	NA	+/-4.0	
16-Bit 1.0 V Direct Resolver-to-Digital	5962-90551 DESC	ILC#	03XX	SDC14567-114	DIP	36	H	NA	+/-2.0	
16-Bit 1.0 V Direct Resolver-to-Digital	5962-90551 DESC	ILC#	04XX	SDC14567-115	DIP	36	H	NA	+/-1.0	
1.0 V Direct Resolver-to-Digital Converter	5962-90551 DESC	ILC#	05XX	SDC14569-111	DIP	36	H	NA	+/-6.0	
1.0 V Direct Resolver-to-Digital Converter	5962-90551 DESC	ILC#	06XX	SDC14569-112	DIP	36	H	NA	+/-4.0	
1.0 V Direct Resolver-to-Digital Converter	5962-90551 DESC	ILC#	07XX	SDC14569-114	DIP	36	H	NA	+/-2.0	
1.0 V Direct Resolver-to-Digital Converter	5962-90551 DESC	ILC#	08XX	SDC14569-115	DIP	36	H	NA	+/-1.0	

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

RESOLVER/SYNCHRO-TO-DIGITAL CONVERTERS HYBRID MICROCIRCUITS (cont'd)

SPECIFICATION		PART							Quality Level	Radiation (TID)	Accuracy (Arc Min)
		No./Source	Vendor	Type Number	Generic Type	Package	Leads				
14-Bit Resolver or Synchro-to-Digital	5962-90554 DESC	ILC#	01XX	HSDC-8915A	DIP	36	H	NA	+/-2.6		
14-Bit Resolver or Synchro-to-Digital	5962-90554 DESC	ILC#	02XX	HSDC-8915	DIP	36	H	NA	+/-4.0		
14-Bit 11.8 V Synchro-to-Digital Converter	5962-90707 DESC	ILC#	01HXX	SDC14500-635	DIP	36	H	NA	+/-2.6		
14-Bit 11.8 V Synchro-to-Digital Converter	5962-90707 DESC	ILC#	02HXX	SDC14500-636	DIP	36	H	NA	+/-4.0		
14-Bit 90.0 V Synchro-to-Digital Converter	5962-90707 DESC	ILC#	03HXX	SDC14502-605	DIP	36	H	NA	+/-2.6		
14-Bit 90.0 V Synchro-to-Digital Converter	5962-90707 DESC	ILC#	04HXX	SDC14502-606	DIP	36	H	NA	+/-4.0		

MIL-STD-975L (NASA) - Part II
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ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

MEMORIES MONOLITHIC MICROCIRCUITS (42 parts)

SPECIFICATION		PART					Quality Level	Radiation (TID)	Access Time
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads			
8Kx8 SRAM (Has data retention.)	5962-38294 DESC	HON**	43Q9X	HC6364/1XQHCC	FP	36	Q	2 Mrad	55 ns
8Kx8 SRAM (Has data retention.)	5962-38294 DESC	HON**	43V9X	HC6364/1XVHCC	FP	36	V	2 Mrad	55 ns
8Kx8 SRAM (No data retention.)	5962-38294 DESC	IBM**	44Q8X	146A894	FP	36	Q	2 Mrad	55 ns
8Kx8 SRAM (No data retention.)	5962-38294 DESC	IBM**	44V8X	146A894	FP	36	V	2 Mrad	55 ns
32Kx8 SRAM	5962-92153 DESC	IBM**	01QXX	IBM2568C-Q60X	FP	36	Q	1 Mrad	60 ns
32Kx8 SRAM	5962-92153 DESC	IBM**	01QYX	IBM2568C-Q60Y	FP	40	Q	1 Mrad	60 ns
32Kx8 SRAM	5962-92153 DESC	IBM**	01VXX	IBM2568C-V60X	FP	36	V	1 Mrad	60 ns
32Kx8 SRAM	5962-92153 DESC	IBM**	01VYX	IBM2568C-V60Y	FP	40	V	1 Mrad	60 ns
UT7156 32Kx8 SRAM	5962-92153 DESC	UNT@	11QMX	UT7156	FP	40	Q	1 Mrad	55 ns
UT7156 32Kx8 SRAM	5962-92153 DESC	UNT@	11QMX	UT7156	FP	40	Q	100 Krad	55 ns
UT7156 32Kx8 SRAM	5962-92153 DESC	UNT@	12QTX	UT7156	FP	40	Q	1 Mrad	55 ns
UT7156 32Kx8 SRAM	5962-92153 DESC	UNT@	12QTX	UT7156	FP	40	Q	100 Krad	55 ns
64Kx1 SRAM	5962-92154 DESC	IBM**	01QXX	IBM6401C-Q55X	FP	36	Q	1 Mrad	55 ns
64Kx1 SRAM	5962-92154 DESC	IBM**	01QYX	IBM6401C-Q55G	LCC	32	Q	1 Mrad	55 ns

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 2.1, Advanced Microcircuit Parts Listing.

MEMORIES MONOLITHIC MICROCIRCUITS (cont'd)

SPECIFICATION		PART					Quality Level	Radiation (TID)	Access Time
		Vendor	Type Number	Generic Type	Package	Leads			
Title	No./Source								
64Kx1 SRAM	5962-92154 DESC	IBM**	01VXX	IBM6401C-V55X	FP	36	V	1 Mrad	55 ns
64Kx1 SRAM	5962-92154 DESC	IBM**	01VYX	IBM6401C-V55G	LCC	32	V	1 Mrad	55 ns
64Kx1 SRAM	5962-92154 DESC	IBM**	02QXX	IBM6401T-Q55X	FP	36	Q	1 Mrad	55 ns
64Kx1 SRAM	5962-92154 DESC	IBM**	02QYX	IBM6401T-Q55X	LCC	32	Q	1 Mrad	55 ns
64Kx1 SRAM	5962-92154 DESC	IBM**	02VXX	IBM6401T-V55X	FP	36	V	1 Mrad	55 ns
64Kx1 SRAM	5962-92154 DESC	IBM**	02VYX	IBM6401T-V55X	LCC	32	V	1 Mrad	55 ns
256Kx1 SRAM	5962-93128 DESC	IBM**	01QXX	IBM2561C-Q60X	FP	36	Q	1 Mrad	60 ns
256Kx1 SRAM	5962-93128 DESC	IBM**	01VXX	IBM2561C-V60X	FP	36	V	1 Mrad	60 ns
256Kx1 SRAM	5962-93128 DESC	IBM**	02QXX	IBM2561T-Q60X	FP	36	Q	1 Mrad	60 ns
256Kx1 SRAM	5962-93128 DESC	IBM**	02VXX	IBM2561T-V60X	FP	36	V	1 Mrad	60 ns
256Kx1 SRAM	5962-93128 DESC	IBM**	03QXX	IBM2561C-Q40X	FP	36	Q	1 Mrad	40 ns
256Kx1 SRAM	5962-93128 DESC	IBM**	03VXX	IBM2561C-V40X	FP	36	V	1 Mrad	40 ns
256Kx1 SRAM	5962-93128 DESC	IBM**	04QXX	IBM2561T-Q40X	FP	36	Q	1 Mrad	40 ns
256Kx1 SRAM	5962-93128 DESC	IBM**	04VXX	IBM2561T-V40X	FP	36	V	1 Mrad	40 ns

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

MEMORIES MONOLITHIC MICROCIRCUITS (cont'd)

SPECIFICATION		PART						Quality Level	Radiation (TID)	Access Time
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads				
32Kx8 SRAM	5962H92153 DESC	IBM**	02QXX	IBM2568T-Q60X	FP	36	Q	1 Mrad	60 ns	
32Kx8 SRAM	5962H92153 DESC	IBM**	02VXX	IBM2568T-V60X	FP	36	V	1 Mrad	60 ns	
32Kx8 SRAM	5962H92153 DESC	HON**	05QUX	HC6856/1WQHZC	FP	36	Q	1 Mrad	40 ns	
32Kx8 SRAM	5962H92153 DESC	HON**	05VUX	HC6856/1WVHZC	FP	36	V	1 Mrad	40 ns	
64Kx1 SRAM	HS-65643RHR HAR	HAR	None	HS-65643RHR	FP	28	S-Equi	300 Krad	35 ns	
8Kx8 SRAM	HS-65647RH-Q HAR	HAR	None	HS-65647RH-Q	DIP	28	S-Equi	300 Krad	50 ns	
8Kx8 SRAM	HS-65647RH-Q HAR	HAR	None	HS-65647RH-Q	FP	28	S-Equi	300 Krad	35 ns	
32Kx8 SRAM	HS-65758RH-Q HAR	HAR	None	HS-65758RH-Q	DIP	28	S-Equi	100 Krad	35 ns	
32Kx8 SRAM	HS-65758RH-Q HAR	HAR	None	HS-65758RH-Q	FP	28	S-Equi	100 Krad	35 ns	
32Kx8 SRAM	HS-65759RH-Q HAR	HAR	None	HS-65759RH-Q	FP	36	S-Equi	100 Krad	35 ns	
2Kx8 PROM	NA62R91005 JPL	HAR	01SJC	6617RH	DIP	24	S-Equi	100 Krad	50 ns	
2Kx8 PROM	NA62R91005 JPL	HAR	01SKC	6617RH	FP	24	S-Equi	100 Krad	50 ns	
512x9 FIFO	S-311-P-705 GSFC	MED#	1	7001RH	DIP	28	S-Equi	100 Krad	90 ns	
512x9 FIFO	S-311-P-705 GSFC	MED#	2	7001RH	FP	28	S-Equi	100 Krad	90 ns	

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

ASIC MONOLITHIC MICROCIRCUITS (22 parts)

SPECIFICATION		PART						Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads				
9000 Gate Programmable Logic Array	5962-89823 DESC	AT&T**	01QXX	ATT3090-50R175MQ	PGA	175	Q	NA	+5 V	
9000 Gate Programmable Array	5962-89823 DESC	AT&T**	01QZC	ATT3090-50N164MQ	PGA	164	Q	NA	+5 V	
9000 Gate Programmable Logic Array	5962-89823 DESC	AT&T**	02QXX	ATT3090-70R175MQ	PGA	175	Q	NA	+5 V	
9000 Gate Programmable Array	5962-89823 DESC	AT&T**	02QZC	ATT3090-70N164MQ	PGA	164	Q	NA	+5 V	
ASIC, Common Microcontroller	5962-92A02 DESC	AT&T**	01QYA	1056A2	LCC	256	Q	NA	+7 V	
ASIC, Control Bus Interface/Functional (CBI/FBIT)	5962-92A03 DESC	AT&T**	01QYA	1056B2	LCC	256	Q	NA	+7 V	
ASIC, Parallel Input/Output Port	5962-92A04 DESC	AT&T**	01QYA	1056C	LCC	256	Q	NA	+7 V	
ASIC, Operand Memory	5962-92A06 DESC	AT&T**	01QYA	1056E	LCC	256	Q	NA	+7 V	
ASIC, Dual Multiplexer Operand Memory	5962-92A07 DESC	AT&T**	01QYA	1056F	LCC	256	Q	NA	+7 V	
ASIC, Cache Bus Controller	5962-92A08 DESC	AT&T**	01QYX	1056G	LCC	256	Q	NA	+7 V	
ASIC, PROTEUS Digital Channel	5962-92A09 DESC	AT&T**	01QYA	1056H2	LCC	256	Q	NA	+7 V	
ASIC, ISC Arithmetic Unit (IAU)	5962-92A10 DESC	AT&T**	01QYX	1056J	LCC	256	Q	NA	+7 V	
ASIC, Input Controller	5962-92A12 DESC	AT&T**	01QYX	1056L	LCC	256	Q	NA	+7 V	
ASIC, Switch	5962-92A17 DESC	AT&T**	01QYA	1057A3	LCC	132	Q	NA	+7 V	

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

ASIC MONOLITHIC MICROCIRCUITS (cont'd)

SPECIFICATION		PART							Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads					
ASIC, Sequencer	5962-92A18 DESC	AT&T**	01QYA	1057C	LCC	132	Q	NA	+7 V		
ASIC, Error Detection and Correction	5962-92A19 DESC	AT&T**	01QYA	1057D	LCC	132	Q	NA	+7 V		
ASIC, ISC Digital-to-Analog Controller	5962-92A21 DESC	AT&T**	01QYA	1057F2	LCC	132	Q	NA	+7 V		
ASIC, Address Controller	5962-92A22 DESC	AT&T**	01QYX	1057G	LCC	132	Q	NA	+7 V		
Serial Communication Controller	5962H92A01 DESC	HON**	01QYX	1HK84	FP	84	Q	1 Mrad	+5 V		
Serial Communication Controller	5962H92A01 DESC	HON**	01VYX	1HK84	FP	84	V	1 Mrad	+5 V		
Trace Data Processor, Semicustom Gate	5962R93A01 DESC	HON**	01QYX	1HL08	SCC	256	Q	100 Krad	+6 V		
ASIC, Gate Array Input Output Unit (IOU)	ST12186 JPL	UNT@	UTD160R	12186-EOUTD160FR	FP	84	S-Equi	100 Krad	+7 V		

ADVANCED MICROCIRCUIT PARTS LISTING

WARNING:

These are nonstandard parts. For additional information refer to paragraph 1.0 of MIL-STD-975, Part II, Section 21, Advanced Microcircuit Parts Listing.

PALS MONOLITHIC MICROCIRCUITS (1 part)

SPECIFICATION		PART					Quality Level	Radiation (TID)	Supply Voltage
Title	No./Source	Vendor	Type Number	Generic Type	Package	Leads			
Programmable Army Logic	95916 LML	TDX#	001	PAL22VP1025MJT	DIP	24	S-Equi	15 Krad	+5 V

ADVANCED MICROCIRCUIT PARTS LISTING

IDENTIFICATION CODE LIST*

CODE	NAME
ADI#	Analog Devices, Inc.
ARX#	Aeroflex Laboratories, Inc.
AT&T**	American Telephone & Telegraph
Crystal	Crystal Semiconductor
Datel#	Datel, Inc.
DESC	Defense Electronics Supply Center
GSFC	Goddard Space Flight Center
HAR	Harris Semiconductor
HON**	Honeywell, Inc.
IBM**	International Business Machines
ILC#	ILC Data Device Corporation
INT**	Intel Corporation
JPL	Jet Propulsion Laboratory
LML	Lockheed Monitored Line
MED#	Marconi Circuit Technology (GEC Plessey)
MN#	MicroNetworks Company
MRL#	Micro-Rel Div. of Medtronic Incorporated
NHI#	National Hybrid, Inc.
Sipex#	Sipex Corporation
SSF	Space Station Freedom
STEL	Stanford Telecom
TIX#	Texas Instruments, Inc.
UNT@	United Technologies Microelectronics Center, Inc.

* These codes appear in the Advanced Microcircuit Parts Listing table under the column headers "No./Source." and "Vendor."

** These manufacturers are QML Certified and Qualified for QML-38535.

These manufacturers are QML Certified and Qualified for QML-38534.

@ This manufacturer is transitionally QML Certified for QML-38535.