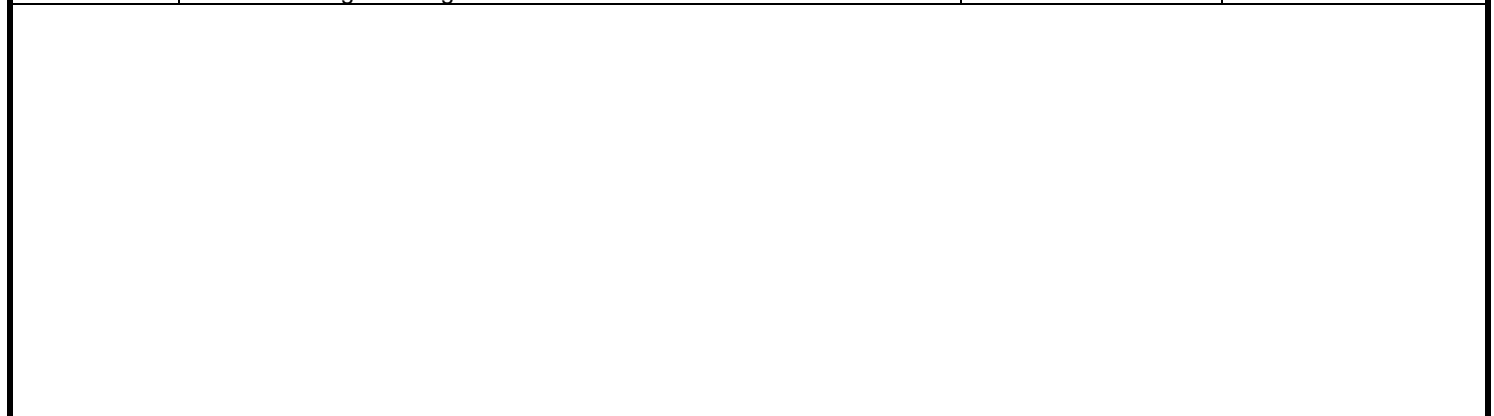


REVISIONS			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED
A	Change in accordance with NOR 5962-R117-94.	92-02-10	K. A. Cottongim
B	Added device types 07 and 08. Added additional waveform to figure 4. Made technical changes to table I. Renumber figures from 1, 2, 3, and 4 to 1, 2, and 3. Redrew entire document.	94-06-24	K. A. Cottongim
C	Change in accordance with NOR 5962-R022-96.	95-12-19	K. A. Cottongim
D	Added device type 09 with CAGE 88739. Added device type 10 with CAGE 57363. Added case outlines U and Z to figure 1. Redrew entire document.	96-02-22	K. A. Cottongim
E	Correct paragraphs 4.2.a.2. and 4.3.3.b.2 and add T _A . Table I, correct the note numbering sequence throughout the table.	05-02-22	Raymond Monnin
F	Table I; changed the maximum limit for I _{CC1} -SB, I _{CC1} -25, I _{CC1} -50, and I _{CC1} -100 from 25 mA to 60 mA for device type 03, 04, and 10. Editorial changes throughout. -sld	07-05-04	Robert M.Heber



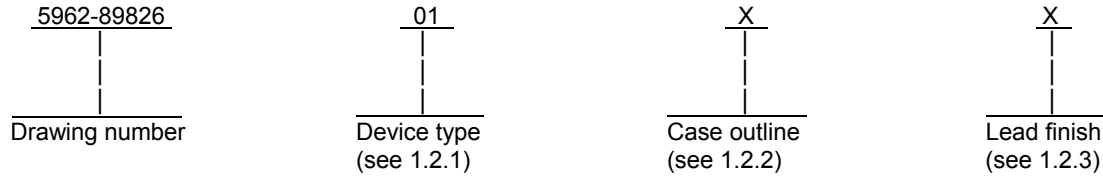
REV																				
SHEET																				
REV	F	F	F	F	F	F	F													
SHEET	15	16	17	18	19	20	21													
REV STATUS OF SHEETS	REV			F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
	SHEET			1	2	3	4	5	6	7	8	9	10	11	12	13	14			

PMIC N/A	PREPARED BY Gary Zahn	DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43218-3990 http://www.dsc.dla.mil																	
STANDARD MICROCIRCUIT DRAWING THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE AMSC N/A	CHECKED BY Robert M. Heber																		
	APPROVED BY William K. Heckman	MICROCIRCUIT, HYBRID, DIGITAL, DUAL CHANNEL, 12 VOLT, DRIVER-RECEIVER																	
	DRAWING APPROVAL DATE 91-01-25																		
	REVISION LEVEL F		SIZE A	CAGE CODE 67268	5962-89826														
		SHEET	1 OF 21																

1. SCOPE

1.1 Scope. This drawing describes device requirements for class H hybrid microcircuits to be processed in accordance with MIL-PRF-38534 and a choice of case outlines and lead finishes are available and are reflected in the Part or Identifying Number (PIN).

1.2 PIN. The PIN shall be as shown in the following example:



1.2.1 Device type(s). The device type(s) identify the circuit function as follows:

<u>Device types</u>	<u>Generic number</u>	<u>Circuit function</u> ^{1/}	<u>Coupling transformer turns ratio:</u>	
			<u>Transformer</u>	<u>Direct</u>
01	BUS-63127II, BUS-63128II	Low power, dual channel, driver-receiver	1:0.6	1:0.83
02	ARX3419	"	1:0.707	1:1
03	NHI-1502	"	1:0.7	1:1
04	NHI-1523	"	1:0.57	1:0.8
05	FC1553721	"	1:1.66	1:1.2
06	CT1589D	"	1:0.707	1:1
07	FC1553722	" ^{2/}	1:1.66	1:1.2
08	FC1553726	"	1:0.707	1:1
09	ARX3433	"	1:0.707	1:1
10	NHI-1522	" ^{2/}	1:0.57	1:0.8

1.2.2 Case outline(s). The case outline(s) are as designated in MIL-STD-1835 and as follows:

<u>Outline letter</u>	<u>Descriptive designator</u>	<u>Terminals</u>	<u>Package style</u>
U	See figure 1	28	Dual-in-line
X	See figure 1	36	Dual-in-line
Y	See figure 1	36	Flat package
Z	See figure 1	28	Flat package

1.2.3 Lead finish. The lead finish shall be as specified in MIL-PRF-38534.

^{1/} Receiver standby low, compatible with manchester encoder-decoder described in Standard Microcircuit Drawing (SMD) 78029.

^{2/} Receiver standby high, compatible with Smith's manchester encoder-decoder.

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1.3 Absolute maximum ratings.

Supply voltage range:	
V _{CC} (devices 02, 03, 04, 06, 09, and 10)	-0.3 V dc to +18 V dc
V _{EE} (devices 01, 02, 05, 06, 07, 08, and 09)	+0.3 V dc to -18 V dc
V _{CC1} (all devices)	-0.3 V dc to +7 V dc
Logic input voltage range	-0.3 V dc to V _{CC1}
Receiver differential voltage	40 V _{P-P}
Receiver common mode voltage range	-10 V dc to +10 V dc
Driver peak output current:	
(devices 01, 03, 04, 06, and 10)	200 mA
(devices 05, 07, 08, and 09)	250 mA
(device 02)	400 mA
Power dissipation (P _D) at T _C = +125°C:	
(device 01)	3 W
(device 02)	2 W <u>3/</u> <u>4/</u> <u>5/</u>
(devices 03, 04, and 10)	0.96 W <u>3/</u>
(devices 05, 07, and 08)	2 W <u>3/</u>
(devices 06 and 09)	3 W
Storage temperature range	-65°C to +150°C
Lead temperature (soldering, 10 seconds)	+300°C
Junction temperature (T _J):	
(devices 01, 03, 04, 05, 06, 07, 08, and 10)	+160°C
(devices 02 and 09)	+167°C
Thermal resistance, junction-to-case (θ _{JC}):	
(device 01)	7.0°C/W
(devices 02 and 09)	88°C/W
(devices 03, 04, and 10)	8.8°C/W
(devices 05, 07, and 08)	18°C/W
(device 06)	80°C/W
Thermal resistance, junction-to-ambient (θ _{JA}):	
(device 01)	27.0°C/W
(devices 02 and 09)	108°C/W
(devices 03, 04, and 10)	28.8°C/W
(devices 05, 07, and 08)	35°C/W
(device 06)	80°C/W

1.4 Recommended operating conditions.

Supply voltage range:	
V _{CC} (devices 02, 03, 04, 06, 09, and 10)	+11.4 V dc to +12.6 V dc
V _{EE} (devices 01, 02, 05, 06, 07, 08, and 09)	-11.2 V dc to -12.6 V dc
V _{CC1} (all devices)	+4.5 V dc to +5.5 V dc
Logic input voltage range	0 V dc to +5 V dc
Receiver differential voltage:	
(devices 01, 05, 07, 08)	30 V _{P-P}
(devices 02, 03, 04, 06, 09, and 10)	40 V _{P-P}
Receiver common mode voltage range:	
(devices 01, 02, 05, 07, and 08)	-5 V dc to +5 V dc
(devices 03, 04, 06, 09, and 10)	-10 V dc to +10 V dc
Driver peak output current:	
(devices 01, 03, 04, 05, 06, 07, 08, 09, and 10)	220 mA
(device 02)	350 mA
Serial data rate	1.0 MHz maximum
Junction temperature (T _J):	
(devices 01, 03, 04, 05, 07, 08, 09, and 10)	+150°C
(devices 02 and 06)	+160°C
Case operating temperature range (T _C)	-55°C to +125°C

3/ One channel transmitting at 100 percent duty cycle and the second channel is at standby.

4/ Worst case operating junction temperature when case is held to +125°C.

5/ Maximum junction temperature rise above case temperature for the hottest die at 100 percent transmitting duty cycle shall be 42°C.

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2. APPLICABLE DOCUMENTS

2.1 Government specification, standards, and handbooks. The following specification, standards, and handbooks form a part of this drawing to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATION

MIL-PRF-38534 - Hybrid Microcircuits, General Specification for.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard Microcircuits.

MIL-STD-1835 - Interface Standard for Electronic Component Case Outlines.

DEPARTMENT OF DEFENSE HANDBOOKS

MIL-HDBK-103 - List of Standard Microcircuit Drawings.

MIL-HDBK-780 - Standard Microcircuit Drawings.

MIL-HDBK-1553 - Multiplex Applications Handbook.

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Item requirements. The individual item performance requirements for device class H shall be in accordance with MIL-PRF-38534. Compliance with MIL-PRF-38534 shall include the performance of all tests herein or as designated in the device manufacturer's Quality Management (QM) plan or as designated for the applicable device class. The manufacturer may eliminate, modify or optimize the tests and inspections herein, however the performance requirements as defined in MIL-PRF-38534 shall be met for the applicable device class. In addition, the modification in the QM plan shall not affect the form, fit, or function of the device for the applicable device class.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38534 and herein.

3.2.1 Case outline(s). The case outlines shall be in accordance with 1.2.2 herein and figure 1.

3.2.2 Terminal connections. The terminal connections shall be as specified on figure 2.

3.2.3 Timing waveforms. The timing waveforms shall be as specified on figure 3.

3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full specified operating temperature range.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are defined in table I.

3.5 Marking of device(s). Marking of device(s) shall be in accordance with MIL-PRF-38534. The device shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's vendor similar PIN may also be marked.

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3.6 Data. In addition to the general performance requirements of MIL-PRF-38534, the manufacturer of the device described herein shall maintain the electrical test data (variables format) from the initial quality conformance inspection group A lot sample, for each device type listed herein. Also, the data should include a summary of all parameters manually tested, and for those which, if any, are guaranteed. This data shall be maintained under document revision level control by the manufacturer and be made available to the preparing activity (DSCC-VA) upon request.

3.7 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to supply to this drawing. The certificate of compliance (original copy) submitted to DSCC-VA shall affirm that the manufacturer's product meets the performance requirements of MIL-PRF-38534 and herein.

3.8 Certificate of conformance. A certificate of conformance as required in MIL-PRF-38534 shall be provided with each lot of microcircuits delivered to this drawing.

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-38534 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein.

4.2 Screening. Screening shall be in accordance with MIL-PRF-38534. The following additional criteria shall apply:

- a. Burn-in test, method 1015 of MIL-STD-883.
 - (1) Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DSCC-VA or the acquiring activity upon request. Also, the test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1015 of MIL-STD-883.
 - (2) T_A or T_C as specified in the approved manufacturer's QM plan.
- b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

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TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions <u>1/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
RECEIVER							
Input level	V _I	Differential input pin 15 to pin 16. <u>2/</u>	4,5,6	All	40		V _{P-P}
Input common mode voltage range	V _{ICM}	Independent of xfmr or in accordance with MIL-HDBK-1553 <u>2/</u>	4,5,6	01,02,09		±5	V(pk)
				03,04,05, 06,07,08, 10		±10	
Output low voltage	V _{OL}	I _{OL} = 16 mA	1,2,3	01		0.5	V
		I _{OL} = 4 mA		02,06,09		0.5	
		I _{OL} = 8 mA		03,04,05, 07,08,10		0.5	
Output high voltage	V _{OH}	I _{OH} = -0.4 mA	1,2,3	All	2.4		V
TRANSMITTER							
Input low voltage	V _{IL}	<u>3/</u>	1,2,3	All		0.7	V
Input high voltage	V _{IH}	<u>3/</u>	1,2,3	All	2		V
Input low current	I _{IL}	V _{IL} = 0.4 V	1,2,3	01	-0.72		mA
				02,03,04, 09,10	-0.4		
				05,07,08	-1.6		
				06	-1.0		
Input high current	I _{IH}	V _{IH} = 2.7 V	1,2,3	01,02,03, 04,05,07, 08,09,10		0.04	mA
				06		0.10	
Output voltage	V _O	Across 35Ω load	1,2,3	01,02,03, 04,05,07, 08,09,10	6	9	V _{P-P}
				06	6.2	8.5	
Output noise voltage	V _{ON}	Across 35Ω load	4,5,6	All		10	mV _{P-P}
See footnotes at end of table.							
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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions 1/ -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
RECEIVER STROBE							
Input low voltage	V _{SIL}	3/	1,2,3	All		0.7	V
Input high voltage	V _{SIH}	3/	1,2,3	All	2		V
Input low current	I _{SIL}	V _{SIL} = 0.4 V	1,2,3	01,03,04, 10	-0.72		mA
				02,09	-0.4		
				05,07,08	-1.6		
				06	-1.0		
Input high current	I _{SIH}	V _{SIH} = 2.7 V	1,2,3	All		0.04	mA
TRANSMITTER INHIBIT							
Input low voltage	V _{IIL}	3/	1,2,3	All		0.7	V
Input high voltage	V _{IIH}	3/	1,2,3	All	2		
Input low current	I _{IIL}	V _{SIL} = 0.4 V	1,2,3	01	-0.72		mA
				02,03,04, 09,10	-0.4		
				05,07,08	-1.6		
				06	-1.0		
Input high current	I _{IIH}	V _{SIH} = 2.7 V	1,2,3	01,02,03, 04,05,07, 08,09,10		0.04	mA
				06		0.10	

See footnotes at end of table.

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TABLE I. Electrical performance characteristics -Continued.

Test	Symbol	Conditions 1/ -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
POWER SUPPLY							
Total Current	I _{CC} -SB	(standby mode)	1,2,3	02,09 04,10 03,06		1 25 44	mA
	I _{EE} -SB			01,05 07,08 02 06,09		30 30 16.5 70	
	I _{CC1} -SB			01,05 07,08 02 03,04,10 06,09		45 45 35 60 90	
	I _{CC} -25	Across 35Ω load	4,5,6	02,09 04,10 03,06		80 69 100	
	I _{EE} -25			01 2/ 02,09 05,06 07,08		80 21 70 70	
	I _{CC1} -25			01 2/ 05,07 08 02 2/, 09 03,04,10 06		45 45 45 35 60 90	
	I _{CC} -50	Across 35Ω load	4,5,6	02,09 04,10 03,06		160 118 155	
	I _{EE} -50			01 02,09 05,07 08 06		155 25 120 120 70	
	I _{CC1} -50			01,05 07,08 02,09 03,04,10 06		45 45 35 60 90	

See footnotes at end of table.

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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions <u>1/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
POWER SUPPLY - Continued.							
Total current	I _{CC} -100	Across 35Ω load	1,2,3	02,09 04,10 03,06		325 209 260	mA
	I _{EE} -100	Across 35Ω load <u>4/</u>		01 02,09 05,07 08 06		255 30 270 270 70	
	I _{CC1} -100	Across 35Ω load <u>4/</u>		01 02,09 03,04,10 05,07 08 06		45 35 60 55 55 90	
RECEIVER							
Input resistance	R _{IN}	1 MHz sine wave <u>2/</u>	4,5,6	01 02,03 04,06,10 05,07 08,09	4 7 7 8 8		kΩ
Input capacitance	C _{IN}	1 MHz sine wave <u>2/</u> T _C = +25°C	4	01,02 03,04,10 06 05,07 08,09		5 5 5 7 7	pF
Threshold voltage	V _{TH}	<u>5/</u>	1,2,3	01 02,09 03,04,10 06 05,07 08	0.5 0.6 0.56 0.56 0.8 0.8	1.2 1.05 1.0 1.05 1.2 1.2	V _{P-P}
	V _{TH}	Group C end-point electricals <u>5/</u>		01,02 03,04,10 06 05,07 08,09	0.05 0.05 0.05 0.8 0.8	1.1 1.1 1.1 1.2 1.2	
TRANSMITTER							
Output resistance (transmitter off)	R _{OUT}	1 MHz sine wave <u>2/</u>	4,5,6	All	10		kΩ
See footnotes at end of table.							
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TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions <u>1/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
TRANSMITTER - Continued.							
Output capacitance (transmitter off)	C _{OUT}	1 MHz sine wave <u>2/</u> T _C = +25°C	4	All		5	pF
Output offset voltage	V _{OS}	<u>2/ 6/</u>	4,5,6	All		±90	mV(pk)
Peak amplitude variation	A _V	<u>2/ 4/ 7/</u>	4,5,6	All		±15	%
RECEIVER							
Delay time, input to output	t _{DR}	Delay time from differential input <u>zero crossing</u> to DATA or DATA (See figure 3) <u>2/</u>	9,10,11	All		400	ns
Strobe delay	t _{DS}	Delay time from strobe rising or <u>falling edge</u> to DATA or DATA (See figure 3) <u>2/</u>	9,10,11	01,03,04, 05,06,07, 08,10		200	
				02,09		250	
TRANSMITTER							
Rise time	t _R	Device types 01, 02, 03, 05, 07, 08, 09 output load = 35Ω. Device type 04 output load = 70Ω. (See figure 3)	9,10,11	01-08	100	300	ns
				09	100	200	
Fall time	t _F		9,10,11	01-08	100	300	ns
				09	100	200	
See footnotes at end of table.							
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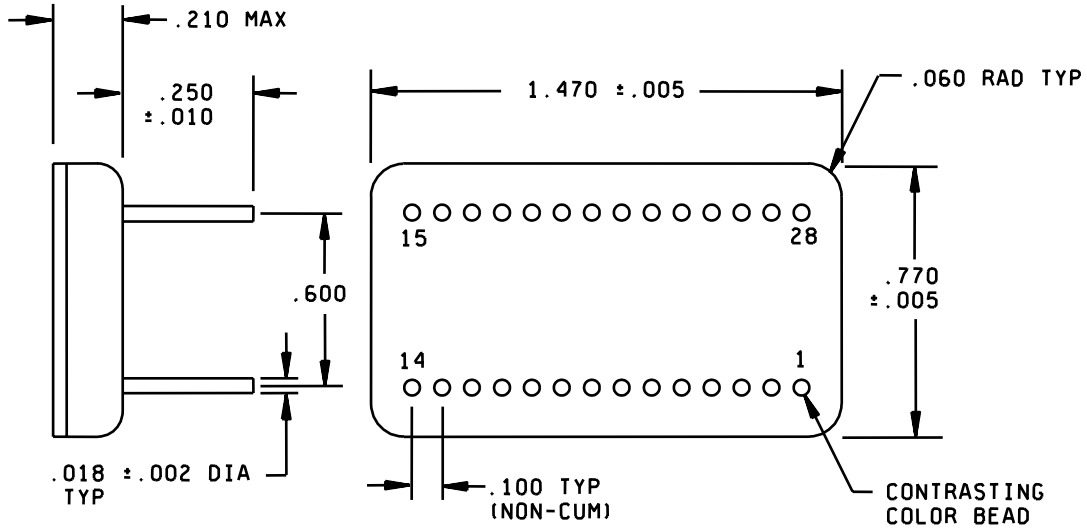
TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions <u>1/</u> -55°C ≤ T _C ≤ +125°C unless otherwise specified	Group A subgroups	Device types	Limits		Unit
					Min	Max	
TRANSMITTER - Continued.							
Delay time	t _{DT}	<u>2/</u> (See figure 3)	9,10,11	01,03,04, 05,07,08, 10		250	ns
				02,09		350	
				06		150	
Inhibit delay inhibiting	t _{DI-H}	<u>2/</u> (See figure 3)	9,10,11	02,03,04, 09,10		200	ns
				01,05,06, 07,08		500	
Inhibit delay active	t _{DI-L}	<u>2/</u> (See figure 3)	9,10,11	01,02,06, 09		350	ns
				03,04,05, 07,08,10		150	

- 1/ V_{CC} = 12 V, V_{EE} = -12 V, and V_{CC1} = +5 V. All specifications and limits are for a single channel with no connections made to the other channel.
- 2/ This parameter is tested initially and after any process or design change which might affect this parameter.
- 3/ These parameters are not directly testable. The maintenance of logic drive levels within the specified voltage window during tests guarantees conformance.
- 4/ For device type 01, these parameters are guaranteed by design; but not tested.
- 5/ Threshold is measured in direct coupled mode including the transformer. For device types 01, 02, 03, 04, 06, 09, and 10 threshold is the maximum level on the BUS at which there are no pulses on either receiver output. For device type 05, 07, and 08 threshold is defined as the minimum signal on the BUS to maintain TTL compatible outputs on both receiver outputs. Divide by 1.4 to obtain threshold in transformer coupled mode. Add 0.14 V in direct coupled mode or 0.10 V in transformer coupled mode to obtain threshold at which no errors are observed when receiver is used with 15530 CMOS manchester encoder-decoder.
- 6/ Measured across 35Ω loads, 2.5 μs after parity bit mid-bit zero crossing of a 660 μs message.
- 7/ Measured across 35Ω loads, variation of average peak amplitude.

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Case outline U.



Inches	mm
.002	0.05
.005	0.13
.010	0.25
.018	0.46
.060	1.52
.100	2.54
.210	5.33
.250	6.35
.600	15.24
.770	19.56
1.470	37.34

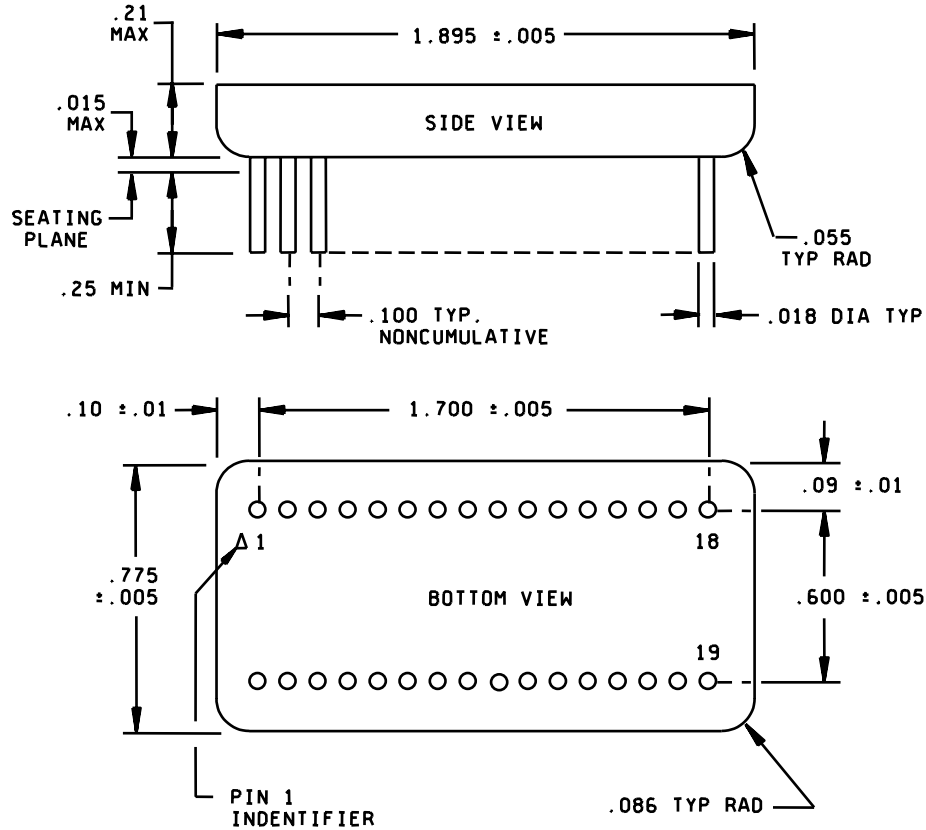
NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Lead identification numbers are for reference only.
4. Lead spacing dimensions apply only at seating plane.

FIGURE 1. Case outline(s).

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Case outline X.



Inches	mm
.005	0.13
.01	0.3
.015	0.38
.018	0.46
.055	1.40
.086	2.18
.09	2.3
.10	2.5
.100	2.54
.600	15.24
.775	19.68
1.700	43.18
1.895	48.13

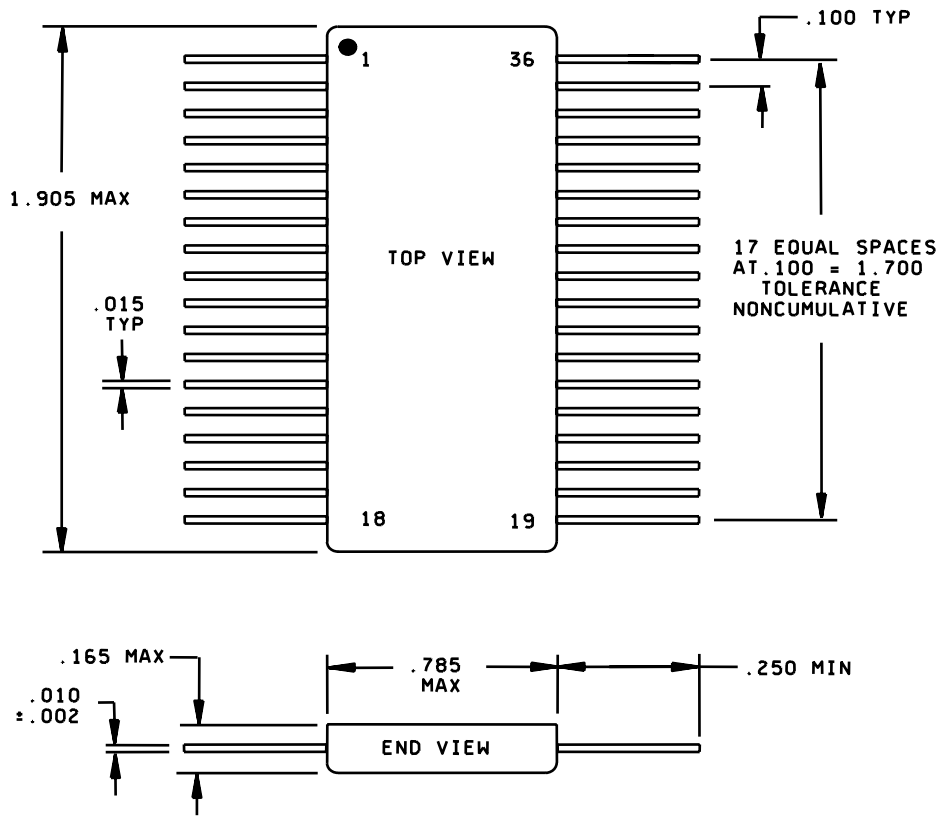
NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Lead identification numbers are for reference only.
4. Lead spacing dimensions apply only at seating plane.

FIGURE 1. Case outline(s) - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43218-3990	SIZE A		5962-89826
		REVISION LEVEL F	SHEET 13

Case outline Y.



Inches	mm
.002	0.05
.010	0.25
.015	0.38
.100	2.54
.165	4.19
.250	6.35
.785	19.94
1.700	43.18
1.905	48.39

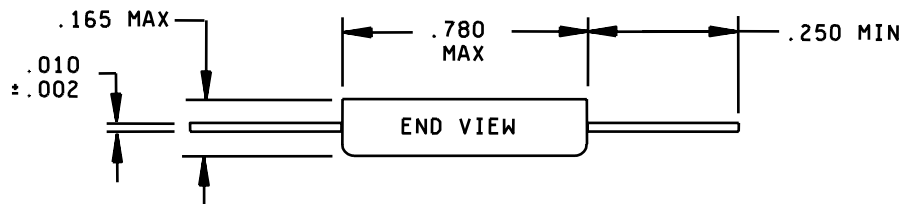
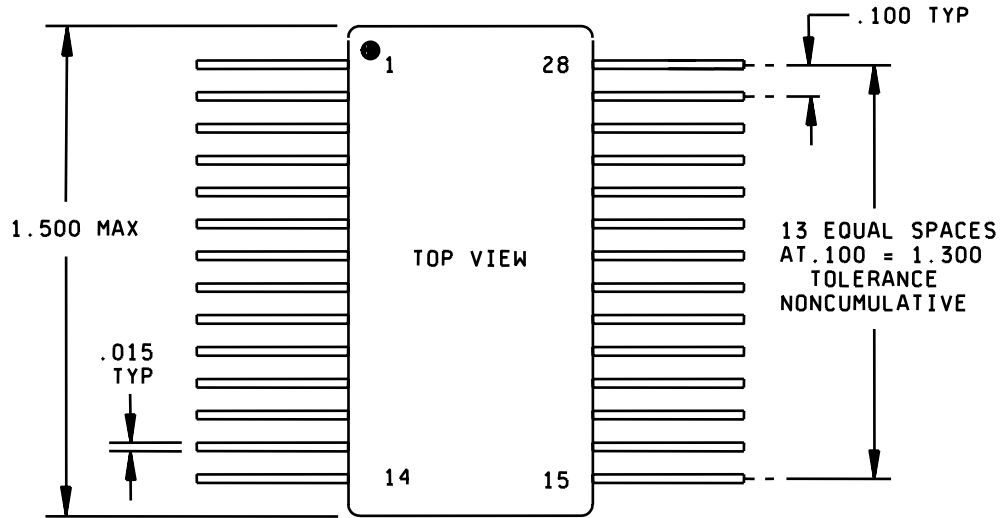
NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Lead identification numbers are for reference only.
4. Lead spacing dimensions apply only at seating plane.

FIGURE 1. Case outline(s) - Continued.

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Case outline Z.



Inches	mm
.002	0.05
.010	0.25
.015	0.38
.100	2.54
.165	4.19
.250	6.35
.780	19.81
1.300	33.02
1.500	38.10

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Lead identification numbers are for reference only.
4. Lead spacing dimensions apply only at seating plane.

FIGURE 1. Case outline(s) - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43218-3990	SIZE A		5962-89826
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Case outlines X and Y.

Pin	Function	Channel
1	TX <u>data</u> out	One
2	TX data out	One
3	GND	One
4	NC	
5	RX data out	One
6	Strobe	One
7	<u>GND</u>	One
8	RX data out	One
9	GND	One
10	TX <u>data</u> out	Two
11	TX data out	Two
12	GND	Two
13	NC	
14	RX data out	Two
15	Strobe	Two
16	<u>GND</u>	Two
17	RX data out	Two
18	NC	
19	V _{CC} or NC	Two
20	RX <u>data</u> in	Two
21	RX data in	Two
22	GND	Two
23	V _{EE}	Two
24	V _{CC1}	Two
25	Inhibit	Two
26	TX <u>data</u> in	Two
27	TX data in	Two
28	V _{CC} or NC	One
29	RX <u>data</u> in	One
30	RX data in	One
31	GND	One
32	V _{EE}	One
33	V _{CC1}	One
34	Inhibit	One
35	TX <u>data</u> in	One
36	TX data in	One

NOTE: GND pins should all be connected externally.
Pins 19 and 28 are +12 V dc for device types 02, 03, 04, 06, and 10 only, no connect (NC) for device types 01, 05, 07, and 08. Device types 05, 07, and 08 pins 3, 12, 22, and 31 are no connect (NC).

FIGURE 2. Terminal connections.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43218-3990	SIZE A		5962-89826
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Case outlines U and Z.

Pin	Function	Channel
1	TX <u>data</u> out / RX <u>data</u> in	One
2	TX data out / RX data in	One
3	GND	One
4	RX <u>strobe</u>	One
5	RX data out	One
6	RX data out	One
7	Case	
8	TX <u>data</u> out / RX <u>data</u> in	Two
9	TX data out / RX data in	Two
10	GND	Two
11	RX <u>strobe</u>	Two
12	RX data out	Two
13	RX data out	Two
14	No connection	
15	GND	Two
16	V _{EE}	Two
17	V _{CC1}	Two
18	TX <u>inhibit</u>	Two
19	TX data in	Two
20	TX data in	Two
21	V _{CC}	Two
22	GND	One
23	V _{EE}	One
24	V _{CC1}	One
25	<u>Inhibit</u>	One
26	TX data in	One
27	TX data in	One
28	V _{CC}	One

NOTE: GND pins should all be connected externally.
Pin 14 is a no connect. Connect pin 7 to external ground.

FIGURE 2. Terminal connections - Continued.

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Device types 01-06, 08, and 10.

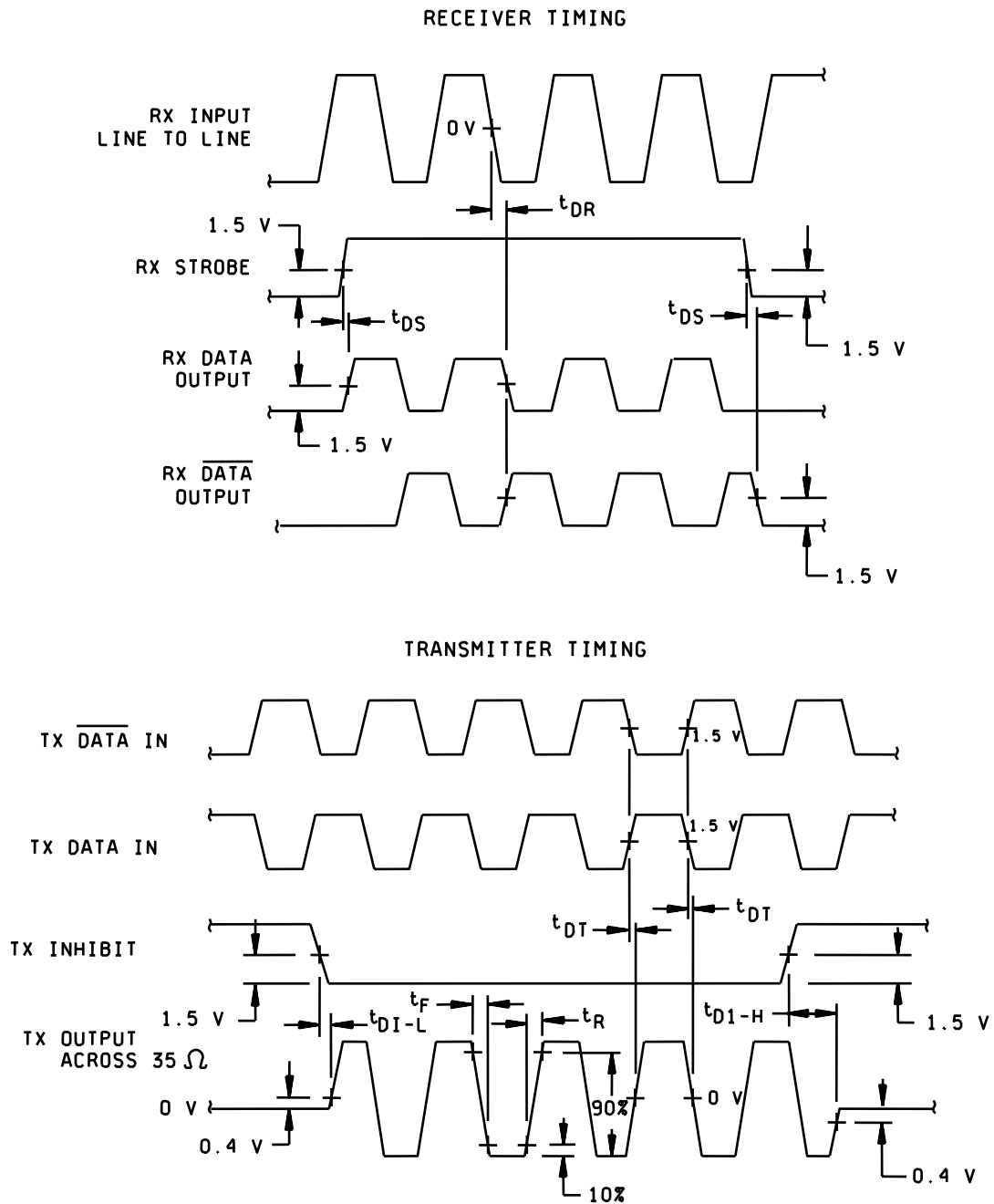


FIGURE 3. Timing waveforms.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43218-3990	SIZE A		5962-89826
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Device types 07 and 09.

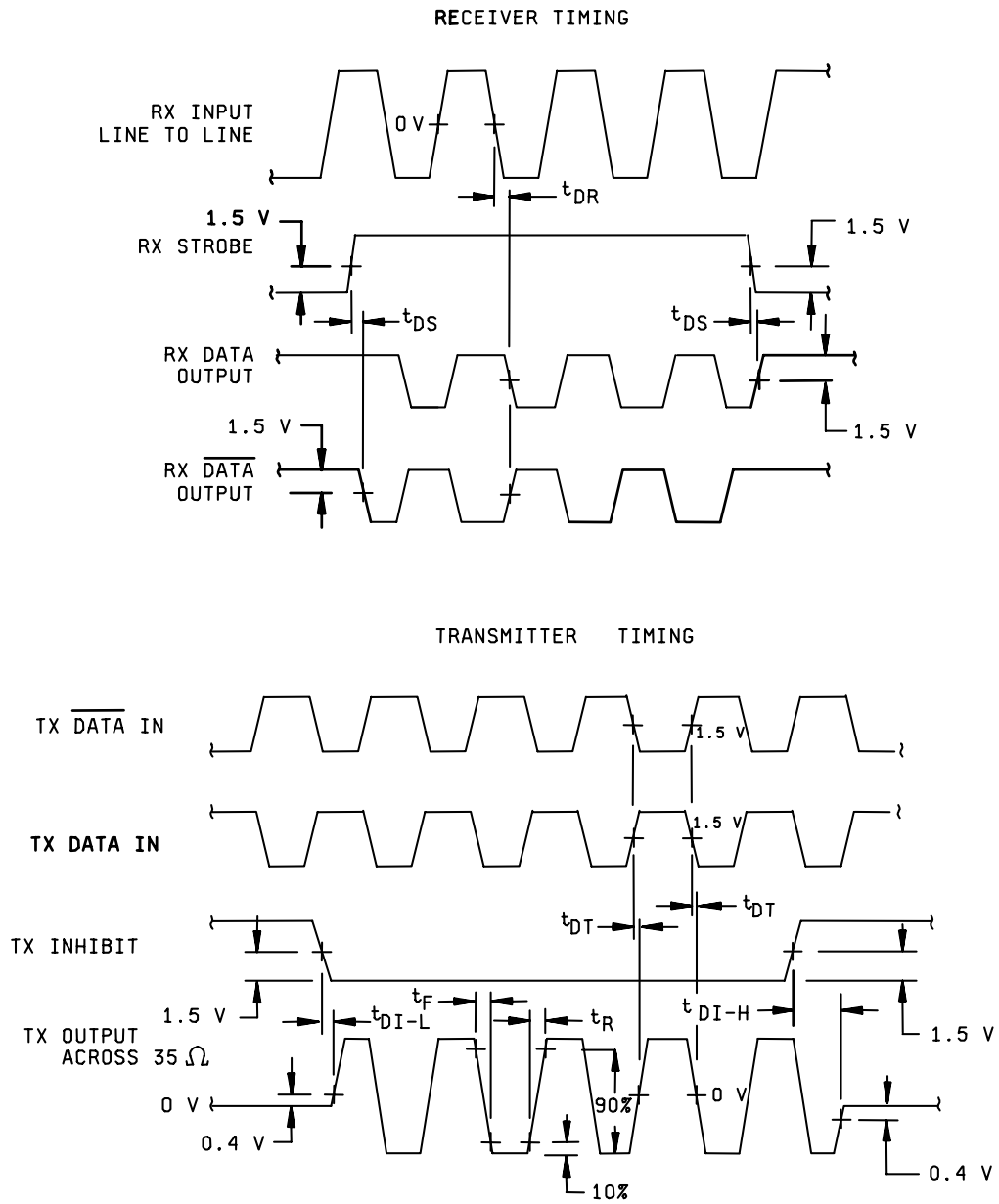


FIGURE 3. Timing waveforms - Continued.

STANDARD MICROCIRCUIT DRAWING DEFENSE SUPPLY CENTER COLUMBUS COLUMBUS, OHIO 43218-3990	SIZE A		5962-89826
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TABLE II. Electrical test requirements.

MIL-PRF-38534 test requirements	Subgroups (in accordance with MIL-PRF-38534, group A test table)
Interim electrical parameters	----
Final electrical parameters	1*,2,3,4,5,6,9,10,11
Group A test requirements	1,2,3,4,5,6,9,10,11
Group C end-point electrical parameters	1,2,3

* PDA applies to subgroup 1.

4.3 Conformance and periodic inspections. Conformance inspection (CI) and periodic inspection (PI) shall be in accordance with MIL-PRF-38534 and as specified herein.

4.3.1 Group A inspection (CI). Group A inspection shall be in accordance with MIL-PRF-38534 and as follows:

- a. Tests shall be as specified in table II herein.
- b. Subgroups 7 and 8 shall be omitted.

4.3.2 Group B inspection (PI). Group B inspection shall be in accordance with MIL-PRF-38534.

4.3.3 Group C inspection (PI). Group C inspection shall be in accordance with MIL-PRF-38534 and as follows:

- a. End-point electrical parameters shall be as specified in table II herein.
- b. Steady-state life test, method 1005 of MIL-STD-883.
 - (1) Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DSCC-VA or the acquiring activity upon request. Also, the test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in method 1005 of MIL-STD-883.
 - (2) T_A or T_C as specified in the approved manufacturer's QM plan.
 - (3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

4.3.4 Group D inspection (PI). Group D inspection shall be in accordance with MIL-PRF-38534.

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5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-PRF-38534.

6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use for Government microcircuit applications (original equipment), design applications, and logistics purposes.

6.2 Replaceability. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated as specified in MIL-PRF-38534.

6.4 Record of users. Military and industrial users shall inform Defense Supply Center Columbus (DSCC) when a system application requires configuration control and the applicable SMD. DSCC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronic devices (FSC 5962) should contact DSCC-VA, telephone (614) 692-0544.

6.5 Comments. Comments on this drawing should be directed to DSCC-VA, Columbus, Ohio 43218-3990, or telephone (614) 692-1081.

6.6 Sources of supply. Sources of supply are listed in MIL-HDBK-103 and QML-38534. The vendors listed in MIL-HDBK-103 and QML-38534 have submitted a certificate of compliance (see 3.7 herein) to DSCC-VA and have agreed to this drawing.

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STANDARD MICROCIRCUIT DRAWING BULLETIN

DATE: 07-05-04

Approved sources of supply for SMD 5962-89826 are listed below for immediate acquisition information only and shall be added to MIL-HDBK-103 and QML-38534 during the next revisions. MIL-HDBK-103 and QML-38534 will be revised to include the addition or deletion of sources. The vendors listed below have agreed to this drawing and a certificate of compliance has been submitted to and accepted by DSCC-VA. This information bulletin is superseded by the next dated revisions of MIL-HDBK-103 and QML-38534. DSCC maintains an online database of all current sources of supply at <http://www.dscclia.mil/Programs/Smcr/>.

Standard microcircuit drawing PIN <u>1/</u>	Vendor CAGE number	Vendor similar PIN <u>2/</u>
5962-8982601XA 5962-8982601XC 5962-8982601YA 5962-8982601YC	<u>3/</u> <u>3/</u> <u>3/</u> <u>3/</u>	BUS63127II BUS63127II BUS63128II BUS63128II
5962-8982601XA 5962-8982601XC 5962-8982601YA 5962-8982601YC	19645 19645 19645 19645	BUS-63127II BUS-63127II BUS-63128II BUS-63128II
5962-8982602XA 5962-8982602XC 5962-8982602YA 5962-8982602YC	88379 88379 88379 88379	ARX3419 ARX3419 ARX3419FP ARX3419FP
5962-8982603XA 5962-8982603XC 5962-8982603YA 5962-8982603YC	57363 57363 57363 57363	NHI-1502 NHI-1502 NHI-1502FP NHI-1502FP
5962-8982604XA 5962-8982604XC 5962-8982604YA 5962-8982604YC	57363 57363 57363 57363	NHI-1523 NHI-1523 NHI-1523FP NHI-1523FP
5962-8982605XA 5962-8982605XC 5962-8982605YA 5962-8982605YC	U4388 U4388 U4388 U4388	FC1553721 FC1553721 FC1553721FP FC1553721FP
5962-8982606XA 5962-8982806YA	<u>3/</u> <u>3/</u>	CT1589D CT1589DFP
5962-8982607XA 5962-8982607XC 5962-8982607YA 5962-8982607YC	U4388 U4388 U4388 U4388	FC1553722 FC1553722 FC1553722FP FC1553722FP
5962-8982608XA 5962-8982608XC 5962-8982608YA 5962-8982608YC	U4388 U4388 U4388 U4388	FC1553726 FC1553726 FC1553726FP FC1553726FP

See footnotes at end of table.

STANDARD MICROCIRCUIT DRAWING BULLETIN - Continued.

DATE: 07-05-04

Standard microcircuit drawing PIN <u>1/</u>	Vendor CAGE number	Vendor similar PIN <u>2/</u>
5962-8982609UA	88379	ACT3433-001-2
5962-8982609UC	88379	ACT3433-001-1
5962-8982609ZA	88379	ACT3433-201-2
5962-8982609ZC	88379	ACT3433-201-1
5962-8982610XA	57363	NHI-1522/883
5962-8982610XC	57363	NHI-1522/883
5962-8982610YA	57363	NHI-1522FP/883
5962-8982610YC	57363	NHI-1522FP/883

- 1/ The lead finish shown for each PIN representing a hermetic package is the most readily available from the manufacturer listed for that part. If the desired lead finish is not listed contact the Vendor to determine its availability.
- 2/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.
- 3/ No longer available.

<u>Vendor CAGE number</u>	<u>Vendor name and address</u>
U4388	C-MAC Microcircuits Limited South Denes Great Yarmouth Norfolk NR30 3PX England
19645	Data Device Corporation 105 Wilbur Place Bohemia, NY 11716-2482
57363	National Hybrid, Incorporated 2200 Smithtown Avenue Ronkonkoma, NY 11779-7359
88379	Aeroflex Laboratories Incorporated 35 South Service Road Plainview, NY 11803-4101

The information contained herein is disseminated for convenience only and the Government assumes no liability whatsoever for any inaccuracies in the information bulletin.