



MILITARY DATA SHEET

MN100363-X REV 0C0

Original Creation Date: 10/30/95
 Last Update Date: 10/21/96
 Last Major Revision Date: 10/30/95

DUAL 8-INPUT MULTIPLEXER

General Description

The F100363 is a dual 8-input multiplexer. The Data Select (Sn) inputs determine which bit (An and Bn) will be presented at the outputs (Za and Zb respectively). The same bit (0-7) will be selected for both the Za and Zb output. All inputs have 50-ohm pulldown resistors.

Industry Part Number

100363

NS Part Numbers

100363DMQB
 100363FMQB

Prime Die

F363

Processing

MIL-STD-883, Method 5004

Quality Conformance Inspection

MIL-STD-883, Method 5005

Subgrp	Description	Temp (°C)
1	Static tests at	+25
2	Static tests at	+125
3	Static tests at	-55
4	Dynamic tests at	+25
5	Dynamic tests at	+125
6	Dynamic tests at	-55
7	Functional tests at	+25
8A	Functional tests at	+125
8B	Functional tests at	-55
9	Switching tests at	+25
10	Switching tests at	+125
11	Switching tests at	-55

Features

- 50% power reduction of the 100163
- 2000V ESD protection
- Pin/function compatible with 100163
- Voltage compensated operating range= -4.2V to -5.7V
- Available to MIL-STD-883
- Available to industrial grade temperature range

(Absolute Maximum Ratings)

(Note 1)

Storage Temperature (Tstg)	-65C to +150C
Maximum Junction Temperature (Tj)	
Ceramic	+175C
Plastic	+150C
Vee Pin Potential to Ground Pin	-7.0V to +0.5V
Input Voltage (DC)	Vee to +0.5V
Output Current (DC Output HIGH)	-50 mA
ESD (Note 2)	≥2000V

Note 1: Absolute maximum ratings are those values beyond which the device may be damaged or have its useful life impaired. Functional operation under these conditions is not implied.

Note 2: ESD testing conforms to MIL-STD-883, Method 3015.

Recommended Operating Conditions

Case Temperature (Tc)	
Commercial	0 C to +85 C
Industrial	-40 C to +85C
Military	-55C to +125C
Supply Voltage (Vee)	-5.7V to -4.2V

Electrical Characteristics

DC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)
 DC: Vee Range: -4.2V to -5.7V, Tc= -55C to +125C, VCC=VCCA=GND

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
IIH(1)	Input HIGH Current	VEE=-5.7V, VM=-0.87V	1, 3	Sn		265	uA	1, 2
			1, 3	Sn		385	uA	3
IIH(2)	Input HIGH Current	VEE=-5.7V, VM=-0.87V	1, 3	An, Bn		340	uA	1, 2
			1, 3	An, Bn		490	uA	3
IIL	Input Low Current	VEE=-4.2V, VM=-1.83V	1, 3	INPUTS	0.5		uA	1, 2, 3
VOH	Output HIGH Voltage	VEE=-4.2V/-5.7V, VIH=-0.87V, VIL=-1.83V, LOADING:50 Ohms to -2.0V	1, 3	OUTPUTS	-1025	-870	mV	1, 2
			1, 3	OUTPUTS	-1085	-870	mV	3
VOL	Output LOW Voltage	Vee=-4.2V/-5.7V, VIH=-0.87V, VIL=-1.83V, LOADING:50 Ohms to -2.0V.	1, 3	OUTPUTS	-1830	-1620	mV	1, 2
			1, 3	OUTPUTS	-1830	-1555	mV	3
VOHC	Output HIGH Voltage Corner Point High	Vee=-4.2V/-5.7V, VIH=-1.165V, VIL=-1.475V, Loading:50 Ohms to -2.0V	1, 3	OUTPUTS	-1035		mV	1, 2
			1, 3	OUTPUTS	-1085		mV	3
VOLC	Output LOW Voltage Corner Point High	Vee=-4.2V/-5.7V, VIH=-1.165V, VIL=-1.475V, LOADING:50 Ohms to -2.0V	1, 3	OUTPUTS		-1610	mV	1, 2
			1, 3	OUTPUTS		-1555	mV	3
VIH	Input HIGH Voltage		1, 3, 7	INPUTS	-1165	-870	mV	1, 2, 3
VIL	Input LOW Voltage		1, 3, 7	INPUTS	-1830	-1475	mV	1, 2, 3
IEE	Input LOW Voltage	VEE=-4.2/-5.7V	1, 3	INPUTS	-87	-30	mA	1, 2, 3

Electrical Characteristics

AC PARAMETERS

(The following conditions apply to all the following parameters, unless otherwise specified.)
 AC: VEE Range: -4.2V to -5.7V, LOADING: 50 Ohms to -2.0V, VCC=VCCA=GND

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
T _{PLH} /T _{PHL} (1)	Propagation Delay	VEE=-4.2/-5.7V	2, 4	An, Bn to Zn	0.6	2.3	ns	9
			2, 4	An, Bn to Zn	0.7	3.0	ns	10
			2, 4	An, Bn to Zn	0.5	2.4	ns	11
t _{PLH} /t _{PHL} (2)	Propagation Delay	VEE=-4.2/-5.7V	2, 4	Sn to Zn	0.9	2.8	ns	9
			2, 4	Sn to Zn	0.8	3.4	ns	10
			2, 4	Sn to Zn	0.8	3.0	ns	11
t _{TLH} /t _{THL}	Transistion Time	VEE=-4.2/-5.7V	6	Qn	0.3	1.8	ns	9
			6	Qn	0.3	2.1	ns	10
			6	Qn	0.3	1.9	ns	11

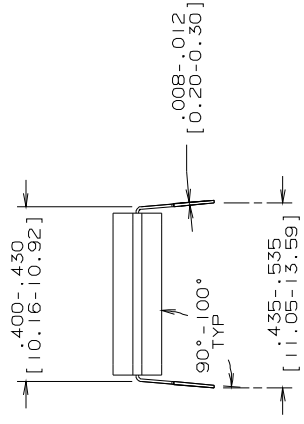
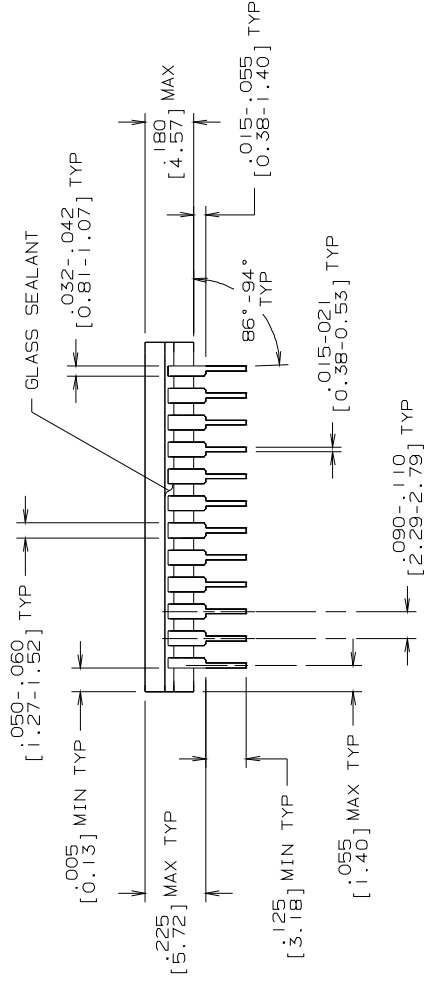
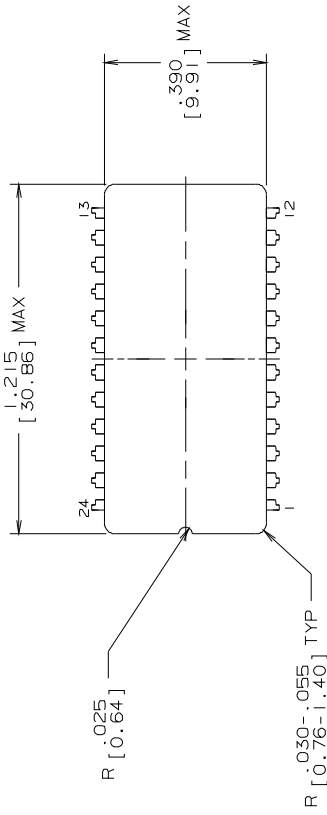
- Note 1: Screen tested 100% on each device at -55 C, +25 C and +125 C temp., subgroups 1, 2, 3, 7 & 8.
- Note 2: Screen tested 100% on each device at +25 C temp only, subgroup A9.
- Note 3: Sample tested (Method 5005, Table 1) on each MFG. lot at +25 C, +125 C & -55 C temp., subgroups A1, 2, 3, 7 & 8.
- Note 4: Sample tested (Method 5005, Table 1) on each MFG. lot at +25 C, subgroup A9, and at +125 C & -55 C temp., subgroups A10 & 11.
- Note 5: Sample tested (Method 5005, Table 1) on each MFG. lot at +25 C temp. only, subgroup A9.
- Note 6: Not tested at +25 C, +125 C & -55 C temp. (DESIGN CHARACTERIZATION DATA).
- Note 7: Guaranteed by applying specified input condition and testing VOH/VOL.

Graphics and Diagrams

GRAPHICS#	DESCRIPTION
J24ERJ	CERDIP(J), 24LD .400 CENTERS (P/P DWG)
P000086A	CERDIP (J), 24LD .400 CENTERS (PIN OUT)
P000087A	CERPAC, QUAD, 24 LEAD (PIN OUT)
W24BRE	CERPAC, QUAD, 24 LEAD (P/P DWG)

See attached graphics following this page.

REVISIONS			
LTR	DESCRIPTION	E.C.N.	DATE
J	REVISE AND REDRAW	09044	03/05/92 DEG/



MIL/AERO MIL-M-38510 CONFIGURATION CONTROL CONFIGURATION CONTROL

CONTROLLING DIMENSION: INCH	
APPROVALS	DATE
DRAWN D.E. GRADY	03/05/92
DTG. CHK.	
ENGR. CHK.	
APPROVAL	
NATIONAL SEMICONDUCTOR CORPORATION 2900 Semiconductor Drive, Santa Clara, CA 95052-8090	
CERDIP (J), 24 LEAD, .400 CENTERS	
SCALE	DRAWING NUMBER
N/A	C MKT-J24E
FORMERLY:	SHEET
	1 OF 1

NOTES: UNLESS OTHERWISE SPECIFIED

- LEAD FINISH: SOLDER DIPPED WITH Sn60 OR Sn63 SOLDER CONFORMING TO MIL-M-38510 TO A MINIMUM THICKNESS OF 200 MICRONS/5.08 MICROMETERS. SOLDER MAY BE APPLIED OVER LEAD BASIS METAL OR Sn PLATE.
- LEAD THICKNESS MAY BE INCREASED BY .003 [0.08] MAXIMUM AFTER LEAD FINISH APPLIED.
- BUMPERS ARE AVAILABLE ON CERTAIN PRODUCTS. BUMPERS WILL ADD .040 [1.02] MAX TO THE LENGTH OF THE PACKAGE.
- NO JEDEC REGISTRATION AS OF 2/17/92.

