



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





Features

- 1.5A Peak Output Current
- Wide Operating Voltage Range: 4.5V to 35V
- -40°C to +125°C Operating Temperature Range
- Latch-up Protected to 1.5A
- TTL and CMOS Compatible Inputs
- Fast Rise and Fall Times
- Low Power Consumption

Applications

- MOSFET Driver
- Switching Power Supplies
- Motor Controls
- DC to DC Converters
- Pulse Transformer Driver

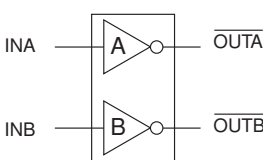
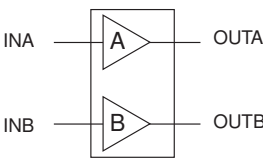
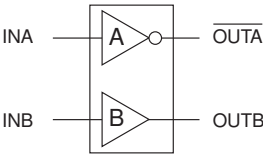
Description

The IX4426, IX4427, and IX4428 are dual high-speed, low-side gate drivers. Each of the two outputs can source and sink 1.5A of peak current with rise and fall times of less than 10ns. The inputs of each driver are TTL and CMOS compatible, and are virtually immune to latch-up. Low propagation delay times and fast, matched rise and fall times make the IX4426, IX4427, and IX4428 ideal for high-frequency and high-power applications.

The IX4426 is configured as a dual inverting driver; the IX4427 is configured as a dual non-inverting driver; and the IX4428 is configured with one inverting driver and one non-inverting driver. All three devices are available in a standard 8-pin SOIC package (N suffix) and an 8-pin DFN package (M suffix).



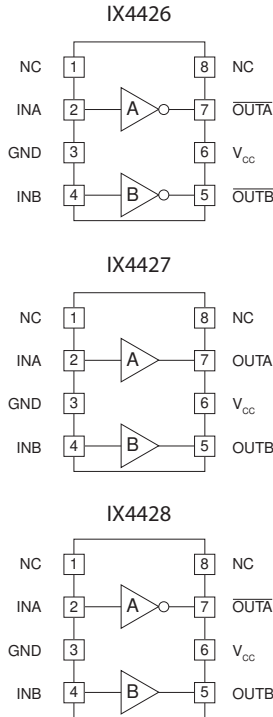
Ordering Information

Logic Configuration	Part Number	Package Type	Packing Method	Quantity
	IX4426N	8-Pin SOIC	Tube	100
	IX4426NTR	8-Pin SOIC	Tape & Reel	2000
	IX4426MTR	8-Pin DFN	Tape & Reel	2000
	IX4427N	8-Pin SOIC	Tube	100
	IX4427NTR	8-Pin SOIC	Tape & Reel	2000
	IX4427MTR	8-Pin DFN	Tape & Reel	2000
	IX4428N	8-Pin SOIC	Tube	100
	IX4428NTR	8-Pin SOIC	Tape & Reel	2000
	IX4428MTR	8-Pin DFN	Tape & Reel	2000

1. Specifications	3
1.1 Pin Configurations	3
1.2 Pin Definitions	3
1.3 Absolute Maximum Ratings	3
1.4 Recommended Operating Conditions	3
1.5 Electrical Characteristics: $T_A = 25^{\circ}\text{C}$	4
1.6 Electrical Characteristics: $T_A = -40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$	5
1.7 Thermal Characteristics	6
2. IX4426-27-28 Performance	6
2.1 Timing Diagrams	6
2.2 Characteristics Test Diagram	6
3. Block Diagrams & Truth Tables	7
3.1 IX4426	7
3.2 IX4428	7
3.3 IX4427	7
4. Performance Data	8
5. Manufacturing Information	11
5.1 Moisture Sensitivity	11
5.2 ESD Sensitivity	11
5.3 Reflow Profile	11
5.4 Mechanical Dimensions	12

1 Specifications

1.1 Pin Configurations



1.2 Pin Definitions

Pin Name	Description
INA	Channel A Logic Input
INB	Channel B Logic Input
$\overline{\text{OUTA}}$	Channel A Output - Sources or sinks current to turn-on or turn-off a discrete MOSFET or IGBT
$\overline{\text{OUTB}}$	Channel B Output - Sources or sinks current to turn on or turn off a discrete MOSFET or IGBT
V_{CC}	Supply Voltage - Provides power to the device
GND	Ground - Common ground reference for the device
NC	No Connection

1.3 Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Supply Voltage	V_{CC}	-0.3	35	V
Input Voltage	V_{IN}	-5.0	$V_{CC}+0.3$	V
Output Current	I_{OUT}	-	± 1.5	A
Junction Temperature	T_J	-55	+150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-65	+150	$^{\circ}\text{C}$

Unless otherwise specified, absolute maximum electrical ratings are at 25°C

Absolute maximum ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. Functional operation of the device at conditions beyond those indicated in the operational sections of this data sheet is not implied.

1.4 Recommended Operating Conditions

Parameter	Symbol	Minimum	Maximum	Units
Supply Voltage	V_{CC}	4.5	30	V
Operating Temperature Range	T_A	-40	+125	$^{\circ}\text{C}$

1.5 Electrical Characteristics: $T_A = 25^\circ\text{C}$

Test Conditions: $4.5\text{V} \leq V_{CC} \leq 18\text{V}$.

Parameter	Conditions	Symbol	Minimum	Typical	Maximum	Units
Input Voltage, High	-	V_{IH}	2.4	-	-	V
Input Voltage, Low	-	V_{IL}	-	-	0.8	
Input Current	$0\text{V} \leq V_{IN} \leq V_{CC}$	I_{IN}	-	-	± 1	μA
Output Voltage, High	-	V_{OH}	$V_{CC}-0.025$	-	-	V
Output Voltage, Low	-	V_{OL}	-	-	0.025	
Output Resistance, High State	$V_{CC}=18\text{V}, I_{OUT}=-100\text{mA}$	R_{OH}	-	4	8	Ω
Output Resistance, Low State	$V_{CC}=18\text{V}, I_{OUT}=100\text{mA}$	R_{OL}	-	2	4	
Latch-Up Protection	With Reverse Current	I	>500	-	-	mA
Rise Time	$V_{CC}=18\text{V}, C_{LOAD}=1000\text{pF}$	t_R	-	10	20	ns
Fall Time	$V_{CC}=18\text{V}, C_{LOAD}=1000\text{pF}$	t_F	-	8	20	
On-Time Propagation Delay	$V_{CC}=18\text{V}, C_{LOAD}=1000\text{pF}$	t_{on}	-	35	60	
Off-Time Propagation Delay	$V_{CC}=18\text{V}, C_{LOAD}=1000\text{pF}$	t_{off}	-	35	60	
Power Supply Current	$V_{INA}=V_{INB}=3\text{V}$	I_{CC}	-	2.5	4	mA
	$V_{INA}=V_{INB}=0\text{V}$		-	0.6	0.8	

1.6 Electrical Characteristics: $T_A = -40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$

 Test Conditions: $4.5\text{V} \leq V_{CC} \leq 18\text{V}$.

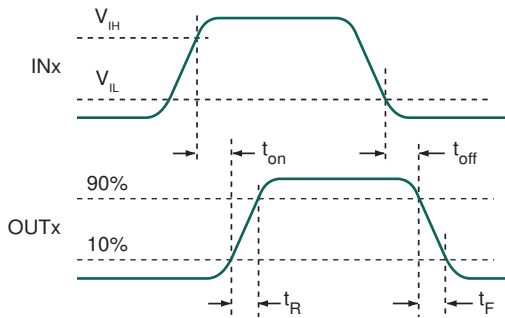
Parameter	Conditions	Symbol	Minimum	Maximum	Units
Input Voltage, High	-	V_{IH}	2.4	-	V
Input Voltage, Low	-	V_{IL}	-	0.8	
Input Current	$0\text{V} \leq V_{IN} \leq V_{CC}$	I_{IN}	-	± 1	μA
Output Voltage, High	-	V_{OH}	$V_{CC}-0.025$	-	V
Output Voltage, Low	-	V_{OL}	-	0.025	
Output Resistance, High State	$V_{CC}=18\text{V}, I_{OUT}=-100\text{mA}$	R_{OH}	-	12	Ω
Output Resistance, Low State	$V_{CC}=18\text{V}, I_{OUT}=100\text{mA}$	R_{OL}	-	8	
Latch-Up Protection	With Reverse Current	I	>500	-	mA
Rise Time	$V_{CC}=18\text{V}, C_{LOAD}=1000\text{pF}$	t_R	-	30	ns
Fall Time	$V_{CC}=18\text{V}, C_{LOAD}=1000\text{pF}$	t_F	-	30	
On-Time Propagation Delay	$V_{CC}=18\text{V}, C_{LOAD}=1000\text{pF}$	t_{on}	-	70	
Off-Time Propagation Delay	$V_{CC}=18\text{V}, C_{LOAD}=1000\text{pF}$	t_{off}	-	70	
Power Supply Current	$V_{INA}=V_{INB}=3\text{V}$	I_{CC}	-	6	mA
	$V_{INA}=V_{INB}=0\text{V}$		-	1	

1.7 Thermal Characteristics

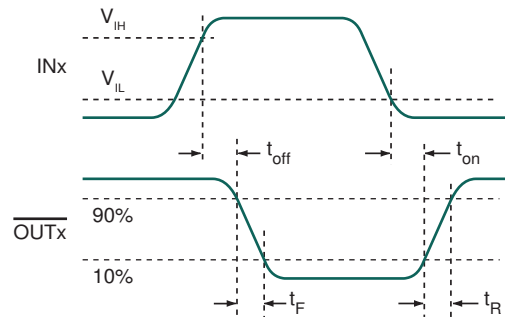
Package	Parameter	Symbol	Rating	Units
8-Pin SOIC	Thermal Resistance, Junction-to-Ambient	θ_{JA}	120	$^{\circ}\text{C}/\text{W}$
8-Pin DFN	Thermal Resistance, Junction-to-Ambient	θ_{JA}	68	$^{\circ}\text{C}/\text{W}$

2 IX4426-27-28 Performance

2.1 Timing Diagrams

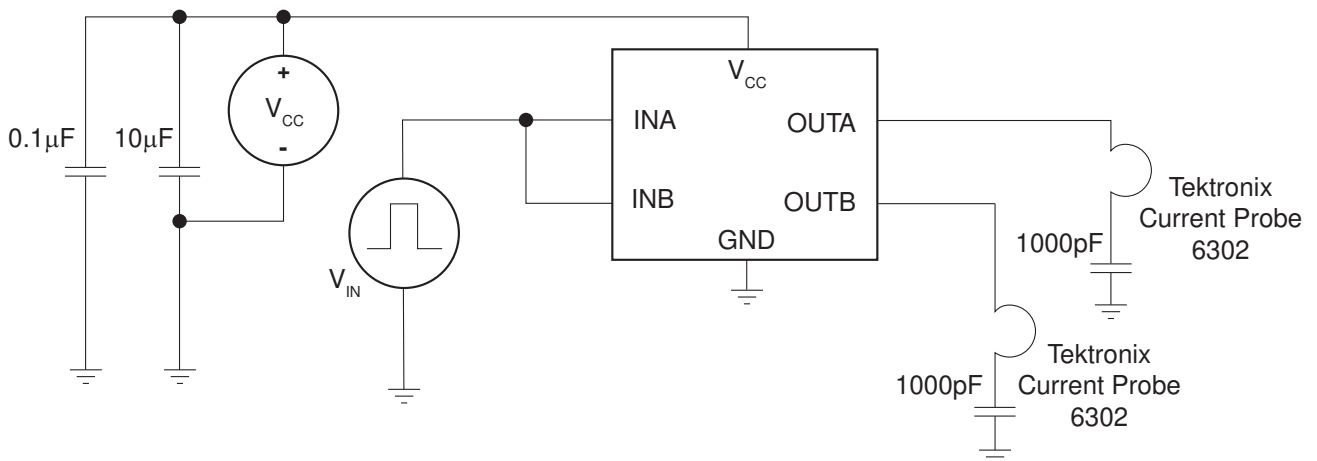


Non-Inverting Driver Waveforms



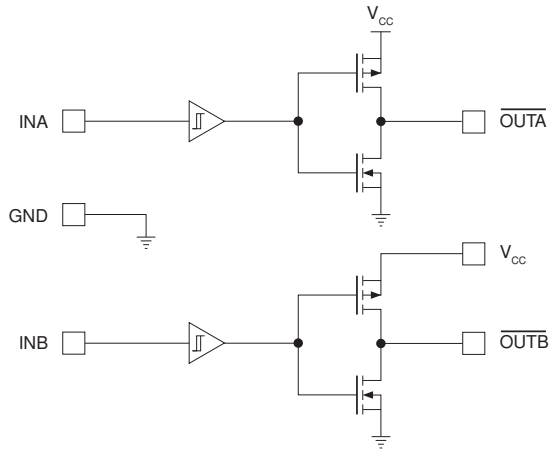
Inverting Driver Waveforms

2.2 Characteristics Test Diagram



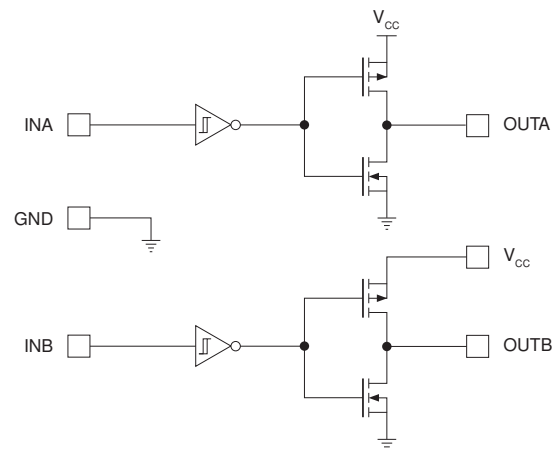
3 Block Diagrams & Truth Tables

3.1 IX4426



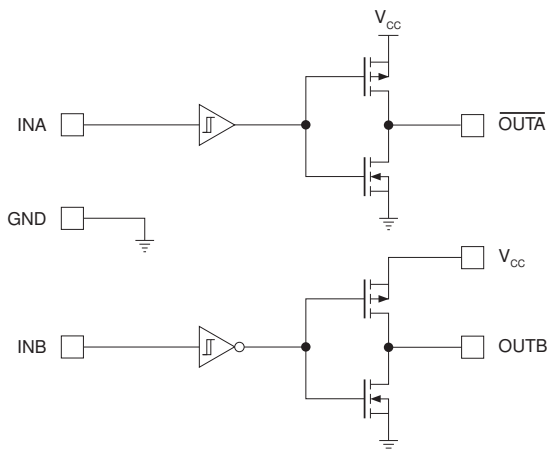
IN_x	$\overline{OUT_x}$
0	1
1	0

3.3 IX4427



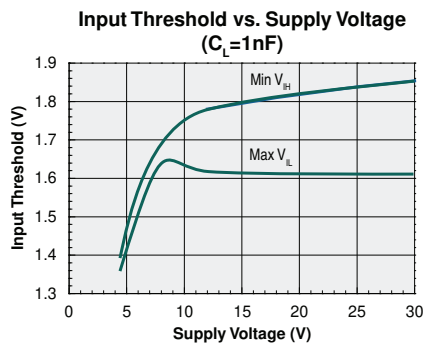
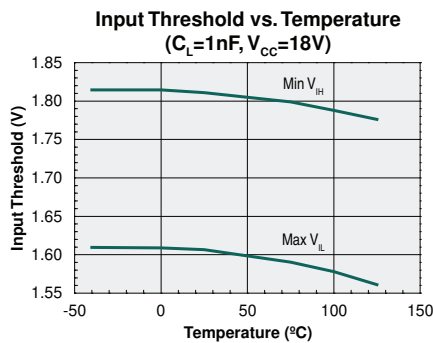
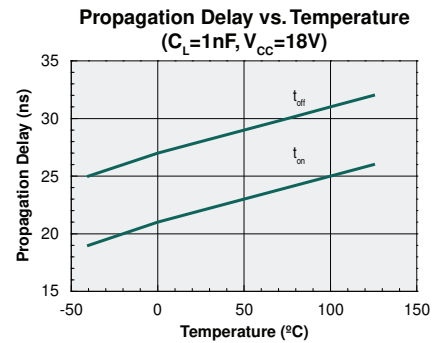
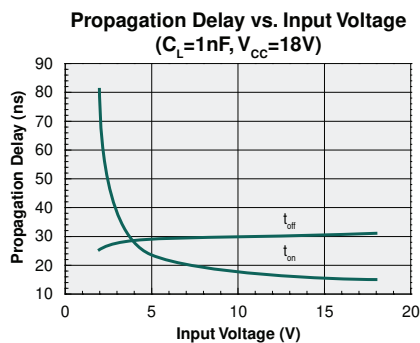
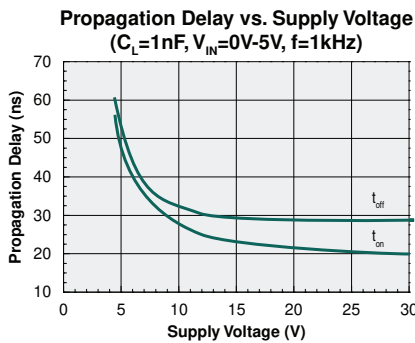
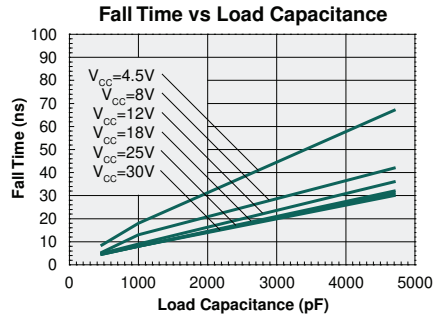
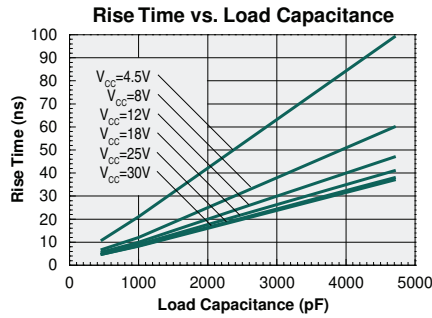
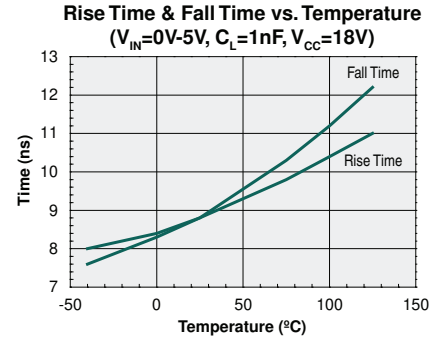
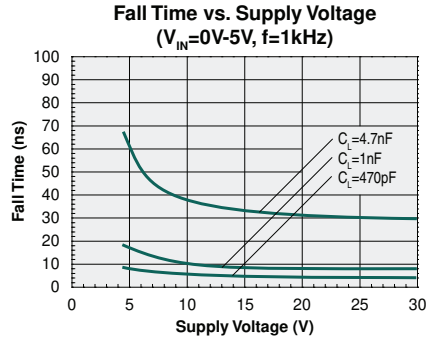
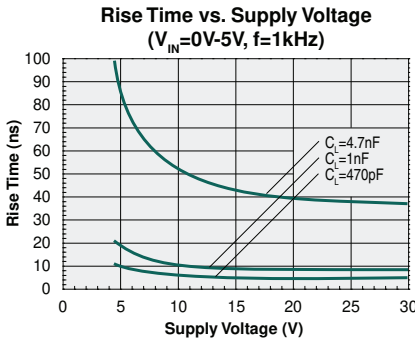
IN_x	OUT_x
0	0
1	1

3.2 IX4428

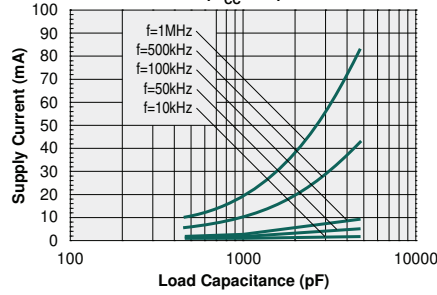


INA	\overline{OUTA}
0	1
1	0
INB	OUTB
0	0
1	1

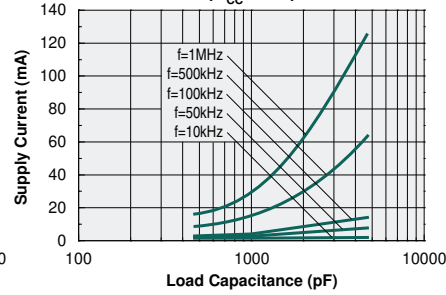
4 Performance Data



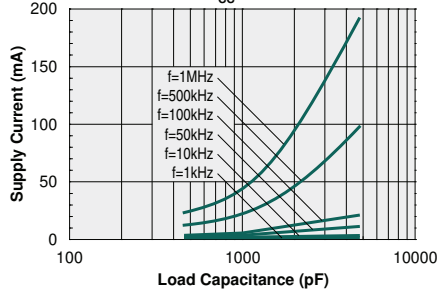
Supply Current vs. Load Capacitance
A&B Outputs Active
($V_{CC}=8V$)



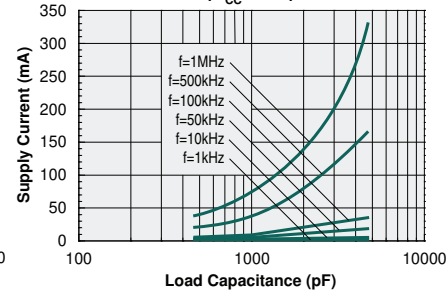
Supply Current vs. Load Capacitance
A&B Outputs Active
($V_{CC}=12V$)



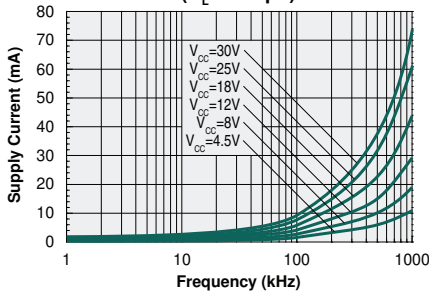
Supply Current vs. Load Capacitance
A&B Outputs Active
($V_{CC}=18V$)



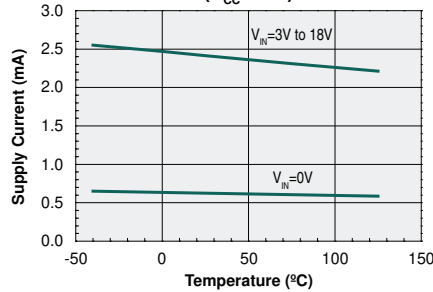
Supply Current vs. Load Capacitance
A&B Outputs Active
($V_{CC}=30V$)



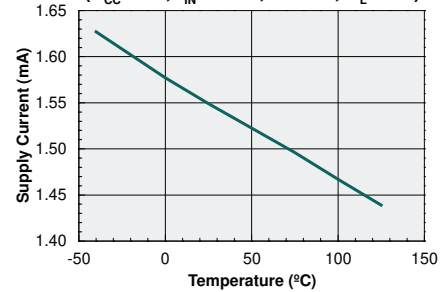
Supply Current vs. Frequency
A&B Outputs Active
($C_L=1000pF$)



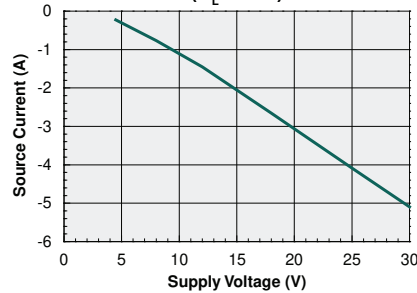
Quiescent Supply Current vs. Temperature
($V_{CC}=18V$)



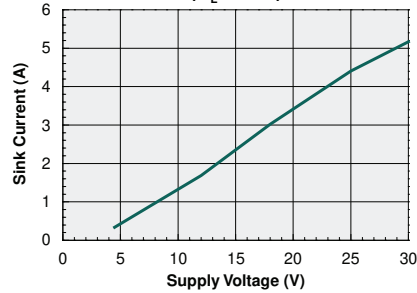
Dynamic Supply Current vs. Temperature
Both Outputs Active
($V_{CC}=18V, V_{IN}=0V-5V, f=1kHz, C_L=1nF$)

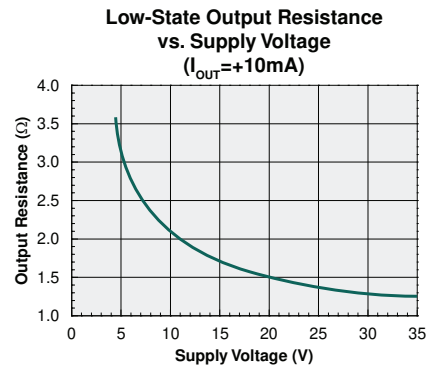
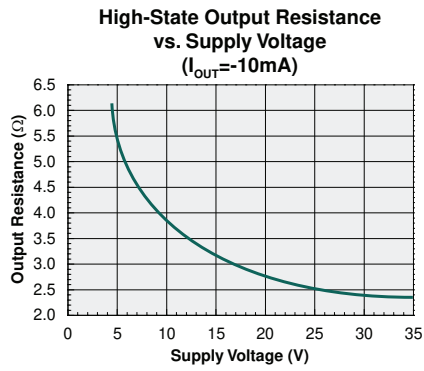
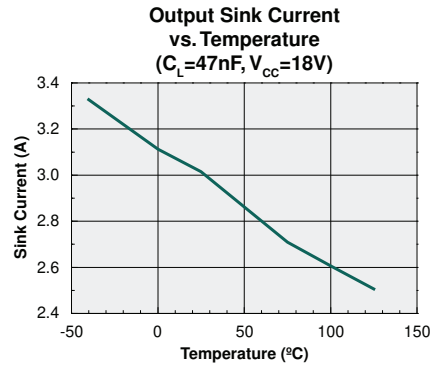
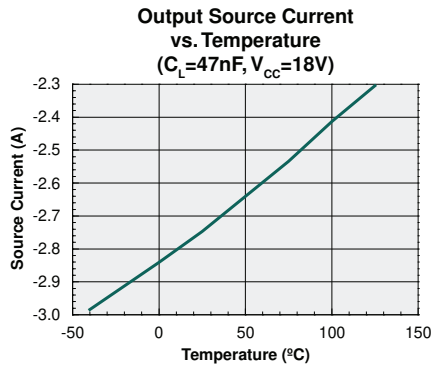


Output Source Current vs. Supply Voltage
($C_L=47nF$)



Output Sink Current vs. Supply Voltage
($C_L=47nF$)





5 Manufacturing Information

5.1 Moisture Sensitivity



All plastic encapsulated semiconductor packages are susceptible to moisture ingress. IXYS Integrated Circuits Division classified all of its plastic encapsulated devices for moisture sensitivity according to the latest version of the joint industry standard, **IPC/JEDEC J-STD-020**, in force at the time of product evaluation. We test all of our products to the maximum conditions set forth in the standard, and guarantee proper operation of our devices when handled according to the limitations and information in that standard as well as to any limitations set forth in the information or standards referenced below.

Failure to adhere to the warnings or limitations as established by the listed specifications could result in reduced product performance, reduction of operable life, and/or reduction of overall reliability.

This product carries a **Moisture Sensitivity Level (MSL) rating** as shown below, and should be handled according to the requirements of the latest version of the joint industry standard **IPC/JEDEC J-STD-033**.

Device	Moisture Sensitivity Level (MSL) Rating
IX4426 / IX4427 / IX4428 All Versions	MSL 1

5.2 ESD Sensitivity



This product is **ESD Sensitive**, and should be handled according to the industry standard **JESD-625**.

5.3 Reflow Profile

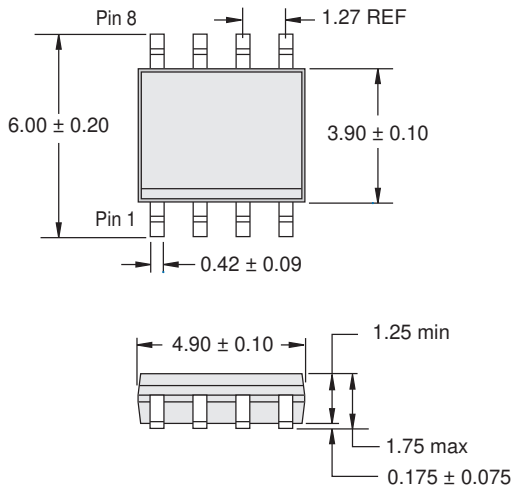
This product has a maximum body temperature and time rating as shown below. All other guidelines of **J-STD-020** must be observed.

Device	Maximum Temperature x Time
IX4426 / IX4427 / IX4428 All Versions	260°C for 30 seconds

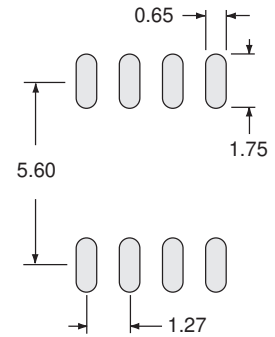


5.4 Mechanical Dimensions

5.4.1 "N" Package (8-Pin SOIC)



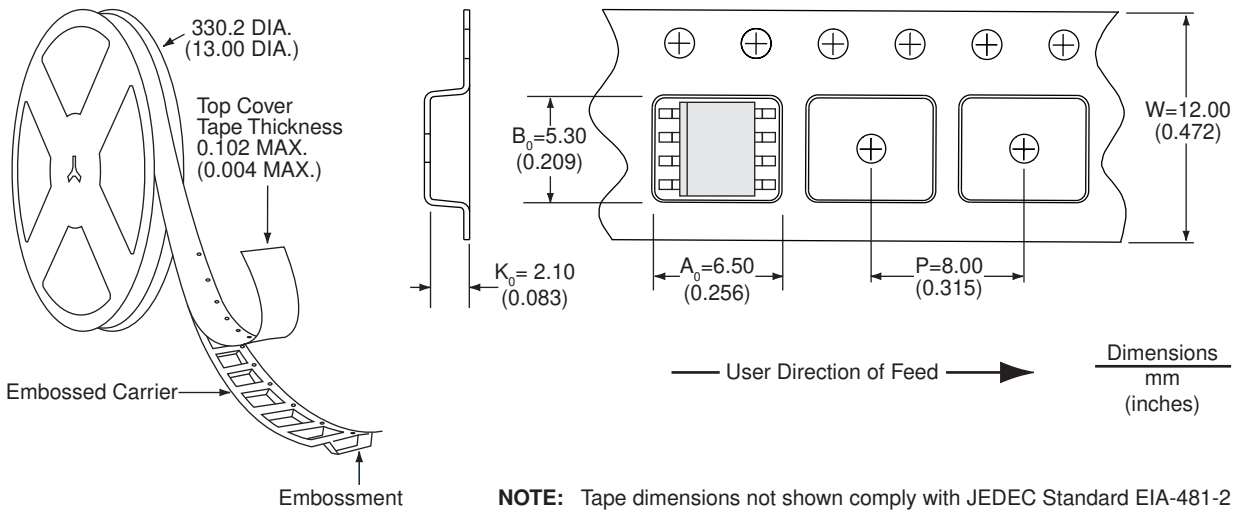
PCB Land Pattern



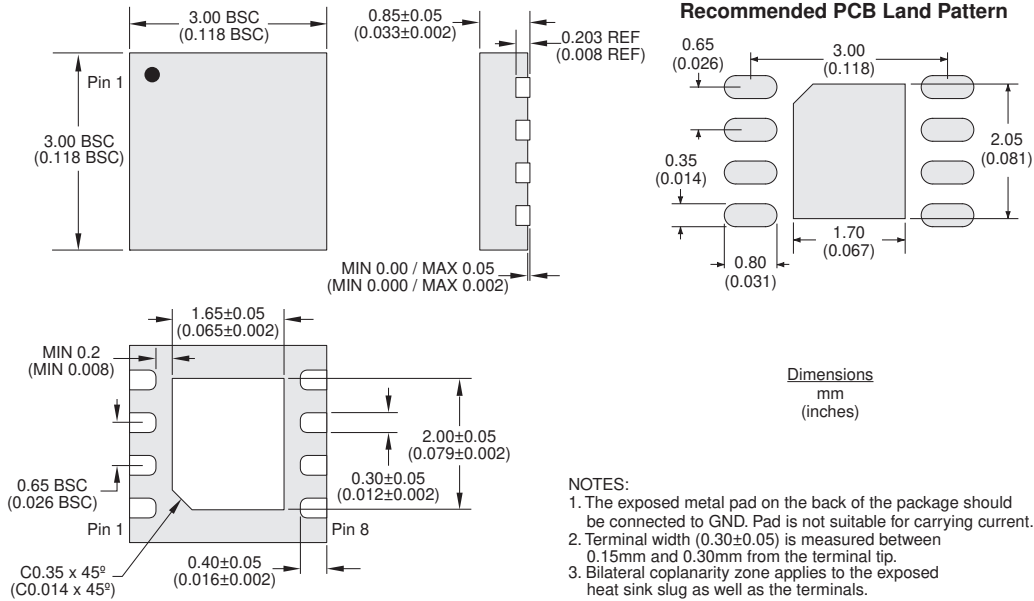
NOTES:

1. Complies with JEDEC Standard MS-012.
2. All dimensions are in millimeters.
3. Dimensions do not include mold flash or burrs

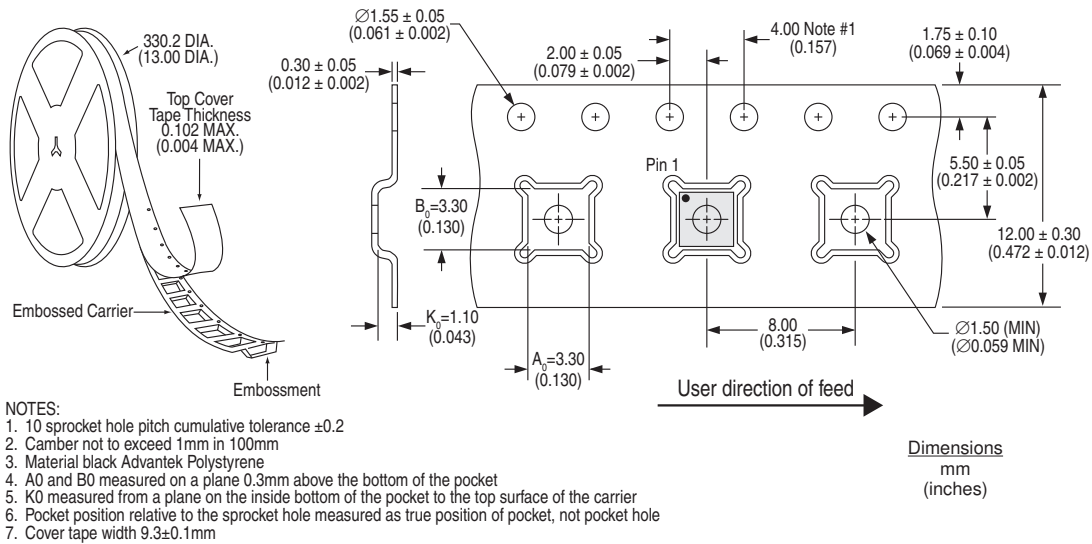
5.4.2 "N" Package Tape & Reel



5.4.3 "M" Package (8-Pin DFN)



5.4.4 "M" Package Tape & Reel



For additional information please visit our website at: www.ixysic.com

IXYS Integrated Circuits Division makes no representations or warranties with respect to the accuracy or completeness of the contents of this publication and reserves the right to make changes to specifications and product descriptions at any time without notice. Neither circuit patent licenses nor indemnity are expressed or implied. Except as set forth in IXYS Integrated Circuits Division's Standard Terms and Conditions of Sale, IXYS Integrated Circuits Division assumes no liability whatsoever, and disclaims any express or implied warranty, relating to its products including, but not limited to, the implied warranty of merchantability, fitness for a particular purpose, or infringement of any intellectual property right.

The products described in this document are not designed, intended, authorized or warranted for use as components in systems intended for surgical implant into the body, or in other applications intended to support or sustain life, or where malfunction of IXYS Integrated Circuits Division's product may result in direct physical harm, injury, or death to a person or severe property or environmental damage. IXYS Integrated Circuits Division reserves the right to discontinue or make changes to its products at any time without notice.

Specification: DS-IX4426-27-28_R05
 ©Copyright 2015, IXYS Integrated Circuits Division
 All rights reserved. Printed in USA.
 8/20/2015