

GENERAL DESCRIPTION

The XS420A4 is a driver featuring high speed suited for driving high speed PIN diode switches.

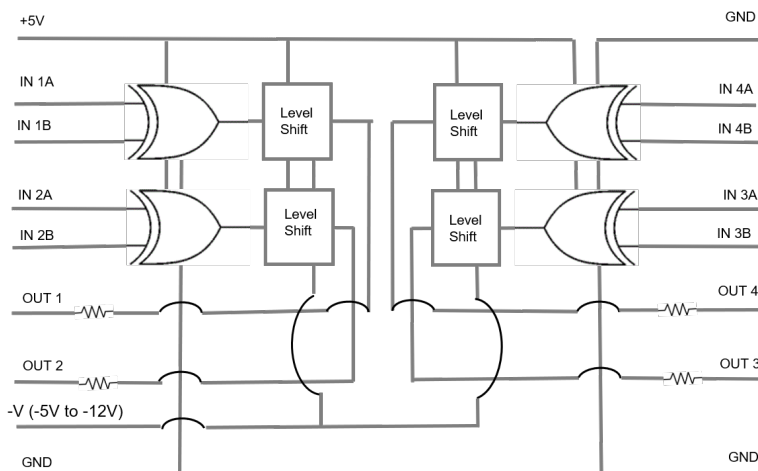
The driver is compatible with TTL logic and has 4 independent channels. Channels are independent and provide Exclusive-Or logic function. Apply logic low to one input to cause the remaining input to be noninverting. Allow one input to float hi (or pull high) to cause the remaining input to be inverting.

Each driver nominally supplies +/-50 mA into 1V load

FEATURES

- high speed <70 nS
- Inverting or Non-Inverting operation with mode control
- * internal current limiting

FUNCTION BLOCK DIAGRAM

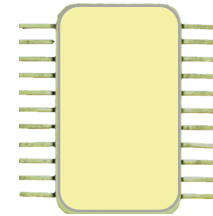


MECHANICAL

The XS420A4 consists of discrete BJT mounted on a laminate with discrete thin film AlN passive components epoxy sealed in a glass to metal .625" x .395" package.

ECCN Code EAR99

XS420A4 is RoHS 3 (EU 2015/863) compliant.



PIN CONNECTIONS

Recommend bypassing Vpos and Vneg with .1 uf capacitor minimum.

Mode control and input pins are interchangeable within one channel

- 1 +5 VDC
- 2 Input 1A
- 3 Input 1B
- 4 Input 2A
- 5 Input 2B
- 6 NC
- 7 Output 1
- 8 NC
- 9 Output 2
- 10 NC
- 11 -V (-5V to -12V)
- 12 Ground
- 13 NC
- 14 Output 4
- 15 NC
- 16 Output 3
- 17 NC
- 18 Input 4B
- 19 Input 4A
- 20 Input 3A
- 21 Input 3B
- 22 Ground

TRUTH TABLE

| IN1A | IN 1B | IN 2A | IN 2B | IN 3A | IN 3B | IN 4A | IN 4B | OUT 4 | OUT 3 | OUT 2 | OUT 1 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | +V | +V | +V | +V |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | -V | -V | -V | -V |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -V | -V | -V | -V |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | +V | +V | +V | +V |

ELECTRICAL SPECIFICATIONS

Vpos +5V, Vneg -12V, TEMP 25C, PRR 5MHz

| | SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNITS |
|----------------|----------|----------------------------|---------------------------------------|--------|-------|-----|-------|
| INPUT | | | | | | | |
| | VI_hi | Voltage Input High | TTL | 2.5 | 3.5 | 5.0 | V |
| | VI_low | Voltage Input Low | TTL | 0 | .8 | 1.8 | V |
| OUTPUT | | | | | | | |
| | VO_hi | Voltage Out High | open load | 4.0 | 4.3 | 4.9 | V |
| | VO_low | Voltage Out Low | open load -V | -11.0 | -11.3 | -12 | V |
| | IO_hi | Current Out High | steady state into 1V diode load +/-5V | | 50 | | mA |
| | IO_low | Current Out Low | steady state into 1V diode load +/-5V | | -50 | | mA |
| | lopk | Current Peak Output | sink and source | +/-300 | | | mA |
| SUPPLY | | | | | | | |
| | IQC_pos | Quiescent Current Positive | | | 25 | 32 | mA |
| | IQC_neg | Quiescent Current Negative | | | -25 | -32 | mA |
| DYNAMIC | | | | | | | |
| | TSW_rise | Switching Speed On | opposed 1N4148 diode load | | 10 | 12 | nS |
| | TSW_fall | Switching Speed Off | opposed 1N4148 diode load | | 12 | 15 | nS |
| | PRR | Pulse Repetition Rate | Max, 10pF load | | .5 | 1 | MHz |

ESD Sensitivity HBM Class1B

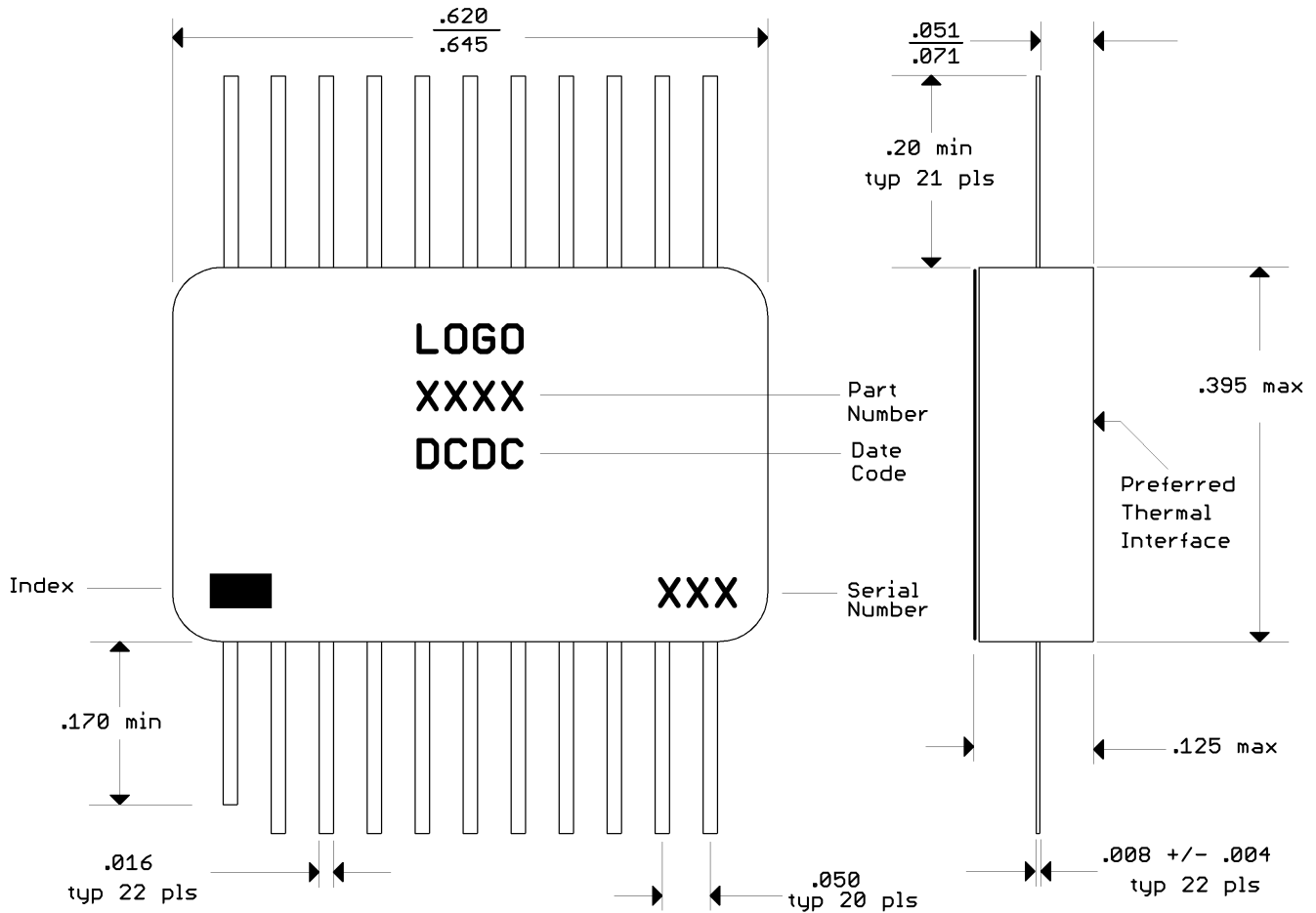
MECHANICAL SPECIFICATIONS

DRAWING NOT TO SCALE. DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE NOTED.

Package Code Q
Type: Housing; Lead Finish: Gold
Length .645 in MAX; Width .395 in MAX; Height .125 in MAX

MARKING SPECIFICATIONS

Logo: IMPELLIMAX
Part Number: VJLNB
Date Code: YYWW



TYPICAL APPLICATION

