

GENERAL DESCRIPTION

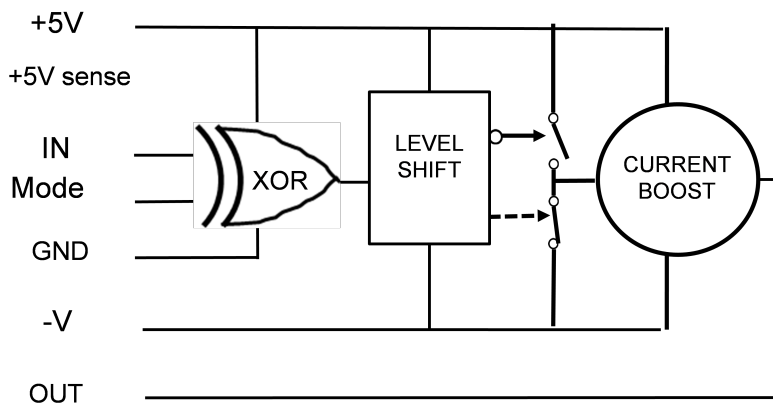
The 5541 is a single channel high-speed driver that level shifts standard logic-level TTL into +4V at 500 mA output high and -500V at 1mA output low.

The 5541 has a TTL buffer stage, a high-speed level shift, dual stage current boost.

FEATURES

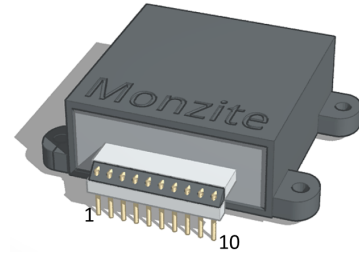
- Fused -500 V rail
- <1 uS switching speed
- Drives high capacitive loads 30,000 pF
- High current 500 mA

FUNCTION BLOCK DIAGRAM



MECHANICAL

The 5541 is constructed on a 1.4" square FR4 substrate with discrete semiconductors and custom hybrid microcircuit encased in thermally conductive potting and plastic shell. Unit mounts to baseplate with integrated 4-40 clearance holes for easy integration into a subassembly.



PIN CONNECTIONS

- | | |
|----|---------------|
| 1 | +5V |
| 2 | +5V |
| 3 | +5V Sense |
| 4 | Ground |
| 5 | Input Logic |
| 6 | Input Mode |
| 7 | Output |
| 8 | Output |
| 9 | Ground |
| 10 | -20V to -500V |

TRUTH TABLE

INPUT	MODE	OUT1
0	0	+500mA
1	0	-500V
0	1	-500V
1	1	+500mA

ELECTRICAL SPECIFICATIONS

Vpos +5V, Vneg -500V, TEMP 25C, PRR 1KHz

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
ABSOLUTE MAXIMUMS						
Vpos	Logic Supply Positive		0		+7	V
Vneg	Supply Voltage Negative				-550	V
To	Operating Temperature		-54		+105	Deg C
Ts	Storage Temperature		-65		+150	Deg C
INPUT						
VI_hi	Voltage Input High	TTL/CMOS	2.8	4.5	5.5	V
VI_low	Voltage Input Low	TTL/CMOS	0	.5	1.8	V
OUTPUT						
VO_hi	Voltage Out High	open load	4.0	4.2	4.8	V
VO_low	Voltage Out Low	open load	-498.8	-499.2	-500	V
IO_hi	Current Out High	steady state into 40micron diode load 10ohm		400	750	mA
IO_low	Current Out Low ** (see note)	steady state into 40micron diode load 10ohm			1	mA
Iopk	Current Peak Output	sink		3.0		A
SUPPLY						
IQC_pos	+5V Quiescent Current	2KHz 50% duty cycle		10		mA
IQC_neg	-500V Quiescent Current	2KHz 50% duty cycle		6		mA
DYNAMIC						
Trise	Time Rise	1 shunt 40micron PIN diode 100pF bypass capacitor		400		nS
Tfall	Time Fall	1 shunt 40micron PIN diode 100pF bypass capacitor		800		nS
Td_rise	Delay Rise	1 shunt 40micron PIN diode 100pF bypass capacitor		400		nS
Td_fall	Delay Fall	1 shunt 40micron PIN diode 100pF bypass capacitor		500		nS
TSW_rise	Switching Speed Rise	1 shunt 40micron PIN diode 100pF bypass capacitor		1200		nS
TSW_fall	Switching Speed Fall	1 shunt 40micron PIN diode 100pF bypass capacitor		1000		nS
PRR	Pulse Repetition Rate	1 shunt 40micron PIN diode 100pF bypass capacitor		2		KHz

******-500V operation intended for back bias on diodes

MECHANICAL SPECIFICATIONS

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

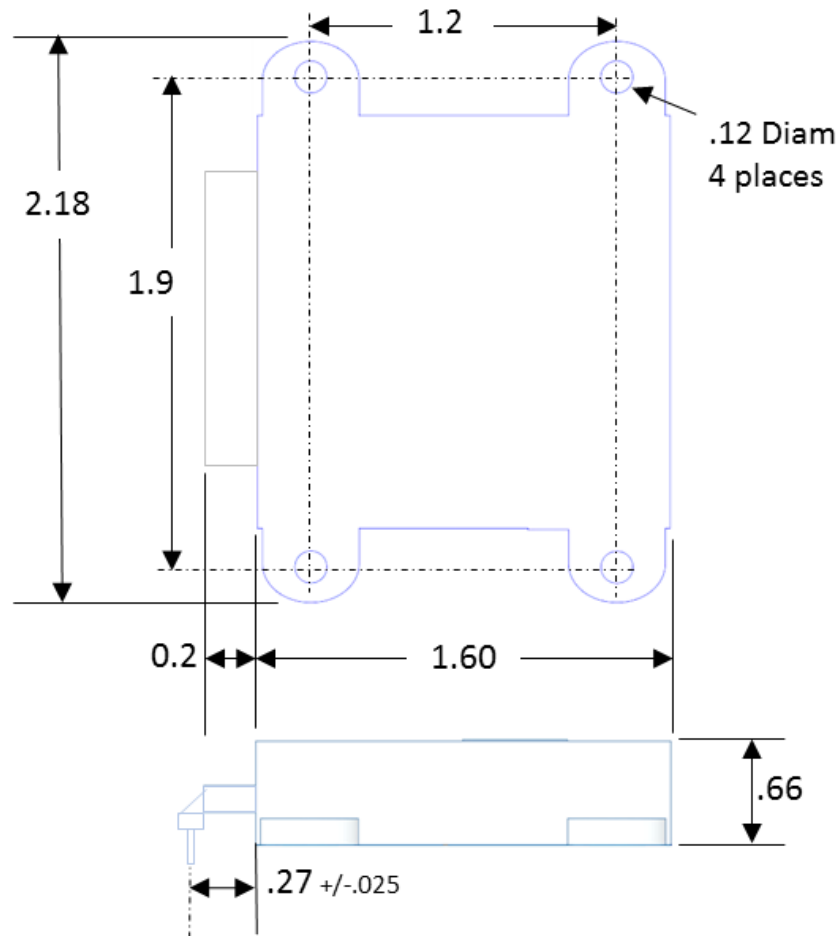
Type: Board

Length 1.9 in TYP; Width 1.7 in TYP; Height .45 in TYP

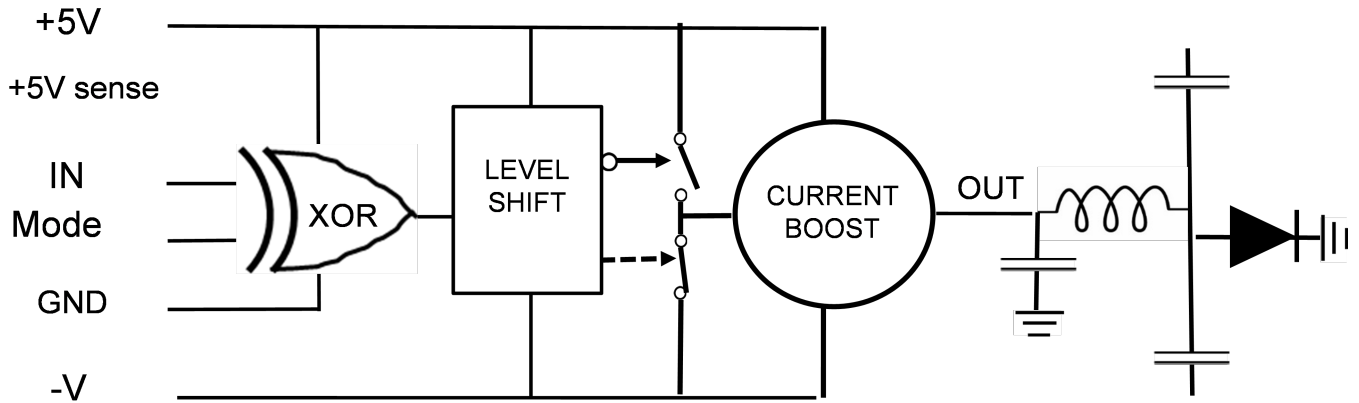
MARKING SPECIFICATIONS

Logo: MONZITE

Part Number: 5541

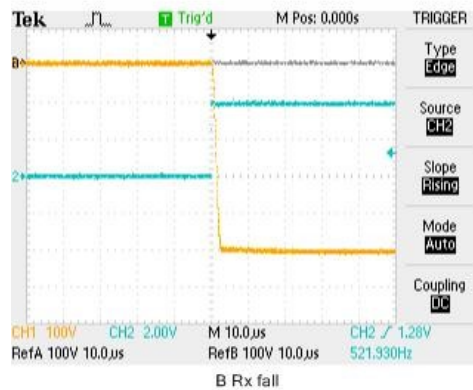


TYPICAL APPLICATION



TYPICAL SWITCHING SPEED

B Rx Fall



TYPICAL SWITCHING SPEED

B Rx Rise

