Dual +15V/-48V PIN Diode Switch Driver

603-886-9569

GENERAL DESCRIPTION

The 9720 is a driver featuring high speed suited for driving high speed high power PIN diode switches.

- 1) Input level is low from 0 to 2V, and logic high corresponds to an 8 to 15V input voltage. Low to hi transition occurs from 5 to 7.5V, and hi-to low transition occurs at <7.5V. Inputs are pulled up to +12V nominal by 1K minimum impedance. Output A is inverting and Output B is noninverting.
- 2) Positive (Output A) current is 66 mA nominal into +.815V loads and (Output B) current is 70 mA nominal into +.87V load. Negative outputs are capable of sinking 10 mA.
- 3) The Status output reports the operational status of the driver. It is a bilevel discrete signal with the following characteristics:

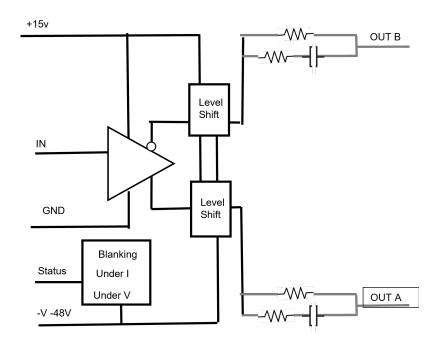
Operational Status: Ground capable of sinking 100 mA inductive. Fault Status: Open Circuit <75K ohms

Fault Conditions: If positive current is less than 30% of nominal currents for A and B

If negative voltage is less negative than -30V, or not present.

Fault Blanking: Fault Status report shall be blanked by 2 microseconds nominal delay following control switching.

FUNCTION BLOCK DIAGRAM

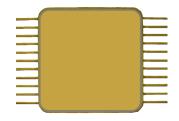


MECHANICAL

The 9720 is sealed in a glass to metal .625" x .625" package.

ECCN Code EAR99

9720 is RoHS 3 (EU 2015/863) compliant.



PIN CONNECTIONS

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

- +V 1
- 2 Input Control
- 3 NC
- 4 NC
- 5 NC
- 6 Ground
- 7 Ground
- 8 Ground
- 9 Status 10 NC
- -48V
- 11
- 12 NC Output A
- 14 NC
- NC 15
- 16 NC
- 17 NC
- 18 NC
- 19 NC
- NC 20
- 21 Output B
- 22 NC



TRUTH TABLE

OUT A OUT B

+V -V

1 -V +V

ELECTRICAL SPECIFICATIONS

Vpos +15V, Vneg -48V, TEMP 25C, PRR 25KHz

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
MAXIMUMS						
Vpos	Supply Voltage Positive				16.5	V
Vneg	Supply Voltage Negative		-75			V
ENTAL						
То	Operating Temperature		-55		+125	Deg C
Ts	Storage Temperature		-55		150	Deg C
VI_hi	Voltage Input High			5	10	V
VI_low	Voltage Input Low		-10	.4		V
VO_hi	Voltage Out High	open load	14.0	14.3	14.9	V
VO_low	Voltage Out Low	open load -V	-47.0	-47.3	-48	V
IO_hi	Current Out High	forward bias PIN diode		70		mA
IO_low	Current Out Low	PIN diode load back bias		-10		mA
lopk	Current Peak Output	sink and source		100		mA
IQC_pos	Quiescent Current Positive				95	mA
IQC_neg	Quiescent Current Negative			-5		mA
TSW_rise	Switching Speed On	1N4148 diode load		200		nS
TSW_fall	Switching Speed Off	1N4148 diode load		200		nS
PRR	Pulse Repetition Rate	Max, 10pF load		10		KHz
	WAXIMUMS Vpos Vneg ENTAL To Ts VI_hi VI_low VO_hi VO_low IO_hi IO_low Iopk IQC_pos IQC_neg TSW_rise TSW_fall	Vpos Supply Voltage Positive Vneg Supply Voltage Negative ENTAL To Operating Temperature Ts Storage Temperature VI_hi Voltage Input High VI_low Voltage Input Low VO_hi Voltage Out High VO_low Voltage Out Low IO_hi Current Out High IO_low Current Out Low Iopk Current Peak Output IQC_pos Quiescent Current Positive IQC_neg Quiescent Current Negative TSW_rise Switching Speed Off	Vpos Supply Voltage Positive Vneg Supply Voltage Negative ENTAL To Operating Temperature Ts Storage Temperature VI_hi Voltage Input High VI_low Voltage Input Low VO_hi Voltage Out High open load VO_low Voltage Out Low open load -V IO_hi Current Out High forward bias PIN diode IO_low Current Out Low PIN diode load back bias lopk Current Peak Output sink and source IQC_pos Quiescent Current Negative TSW_rise Switching Speed On 1N4148 diode load TSW_fall Switching Speed Off 1N4148 diode load	MAXIMUMS Vpos Supply Voltage Positive Vneg Supply Voltage Negative -75 ENTAL To Operating Temperature -55 Ts Storage Temperature -55 VI_hi Voltage Input High -10 VO_hi Voltage Input Low -10 VO_hi Voltage Out High open load 14.0 VO_low Voltage Out Low open load -V -47.0 IO_hi Current Out High forward bias PIN diode IO_low Current Out Low PIN diode load back bias Iopk Current Peak Output sink and source IQC_pos Quiescent Current Positive IQC_neg Quiescent Current Negative TSW_rise Switching Speed On 1N4148 diode load TSW_fall Switching Speed Off 1N4148 diode load	MAXIMUMS Vpos Supply Voltage Positive Vneg Supply Voltage Negative -75 ENTAL -75 To Operating Temperature -55 Ts Storage Temperature -55 VI_hi Voltage Input High 5 VI_low Voltage Input Low -10 .4 VO_hi Voltage Out High open load 14.0 14.3 VO_low Voltage Out Low open load -V -47.0 -47.3 IO_hi Current Out High forward bias PIN diode 70 IO_low Current Out Low PIN diode load back bias -10 Iopk Current Peak Output sink and source 100 IQC_pos Quiescent Current Positive -5 IQC_neg Quiescent Current Negative -5 TSW_rise Switching Speed On 1N4148 diode load 200 TSW_fall Switching Speed Off 1N4148 diode load 200	MAXIMUMS Vpos Supply Voltage Positive 16.5 Vneg Supply Voltage Negative -75 ENTAL To Operating Temperature -55 +125 Ts Storage Temperature -55 150 VI_hi Voltage Input High 5 10 VI_low Voltage Input Low -10 .4 VO_hi Voltage Out High open load 14.0 14.3 14.9 VO_low Voltage Out Low open load -V -47.0 -47.3 -48 IO_hi Current Out High forward bias PIN diode 70 10 IO_low Current Out Low PIN diode load back bias -10 -10 IOC_pos Quiescent Current Positive 95 -5 IQC_neg Quiescent Current Negative -5 -5 TSW_rise Switching Speed On 1N4148 diode load 200 TSW_fall Switching Speed Off 1N4148 diode load 200

ESD Sensitivity HBM Class1B



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

Package Code 5

Type: Housing; Lead Finish: Gold

Length .645 in MAX; Width .645 in MAX; Height .135 in MAX

MARKING SPECIFICATIONS

Logo: IMPELLIMAX Part Number: 9720 Date Code: YYWW

