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## LEVEL-SHIFTED GAS DISCHARGE DISPLAY DIGIT DRIVERS

### DI-500B                      DI-502B

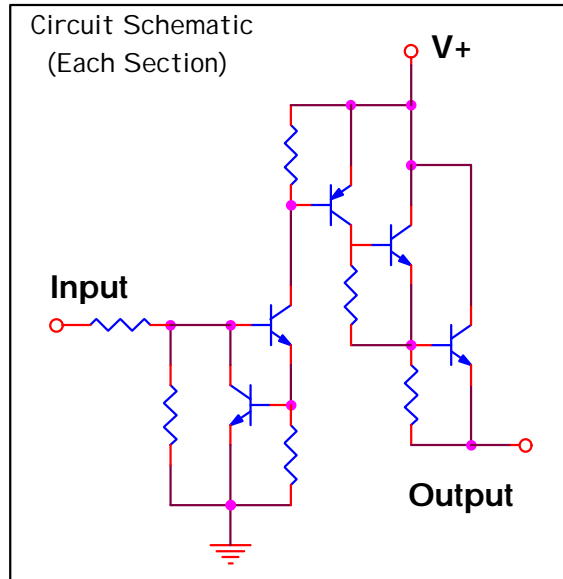
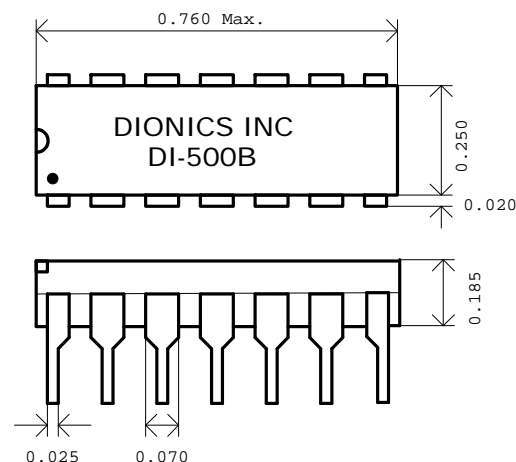
#### General Description:

The DIONICS DI-500B and DI-502B circuits are designed for interfacing between MOS or TTL circuitry and gas discharge display panels. Each section of these devices is made up of a switched constant current level shifter-capable of high voltage operation-and a pnp-npn driver transistor pair. The constant current operation of the level shifter stage results in low power dissipation. Input circuitry is suitable for open drain PMOS, CMOS, open-collector or standard TTL.

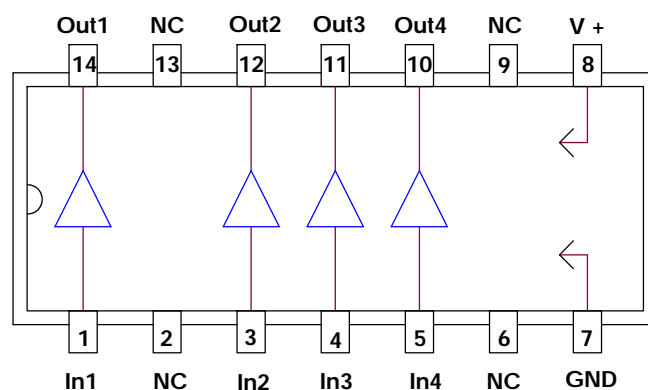
#### Features:

- ✓ Level Shift Capability: 125V For DI-502B  
200V For DI-500B
- ✓ MOS and TTL Compatibility
- ✓ Pin For Pin Replacements For Sprague UDN-6144A
- ✓ Low Power Dissipation
- ✓ Reliable Dielectric Isolation Process

#### Package Layout:



#### Pin Connections



### Absolute Maximum Rating (Ta = 25 °C)

Characteristic	Symbol	Notes	Limits	Units
Supply Voltage DI-500B	V +	Measured With Respect to GND	200	V
DI-502B	V +	Measured With Respect to GND	125	V
Input Voltage	V <sub>in</sub>	Measured With Respect to GND	35	V
Output Voltage	V <sub>out</sub>	Measured With Respect to V + Terminal	90	V
Output Current	I <sub>out</sub>		40	mA
Power Dissipation DI-500B	P <sub>D</sub>	Derate at 6 mW/ °C Above 25°C Ambient	600	mW
DI-502B	P <sub>D</sub>	Derate at 6 mW/ °C Above 25°C Ambient	600	mW
Storage Temperature	T <sub>s</sub>		-55 to +125	°C
Operating Temperature	T <sub>o</sub>		0 to +70	°C

### Electrical Characteristics (Ta = 25 °C)

Parameter	Symbol	Notes	Conditions	Typ.	Max.	Units
Output Saturation Voltage	V <sub>out</sub> (SAT)	V + = 180V (DI-500B); V + = 100V (DI-502B); Measured With Respect to V+ Terminal.	I <sub>o</sub> = 25mA; V <sub>i</sub> = 2.4V	3	10	V
Output Leakage Current	I <sub>out</sub> (OFF)	V + = 180V (DI-500B); V + = 100V (DI-502B).	V <sub>o</sub> = 90V; V <sub>i</sub> = 0.4V	0.1	10	μA
Input Current	I <sub>in</sub> (ON)		V <sub>i</sub> = 2.4V	340	400	μA
Supply Current	I+	V + = 180V (DI-500B); V + = 100V (DI-502B); One Input at 3.5V, Others at 0.4V.	V <sub>i</sub> = 2.4 V; I <sub>o</sub> = 0	0.5	2.0	mA

### Typical Application:

