DIONICS, INC.
65 Rushmore Street
Westbury, NY 11590

Phone: (516) 997-7474
Fax: (516) 997-7479
Website: www.dionics-usa.com

LEVEL-SHIFTED VACUUM FLUORESCENT DISPLAY DRIVERS

DI-512BR* DI-513BR DI-514BR

(Also directly applicable as gas discharge display digit driver. Pin for pin replacement for SPRAGUE UDN6184A)*

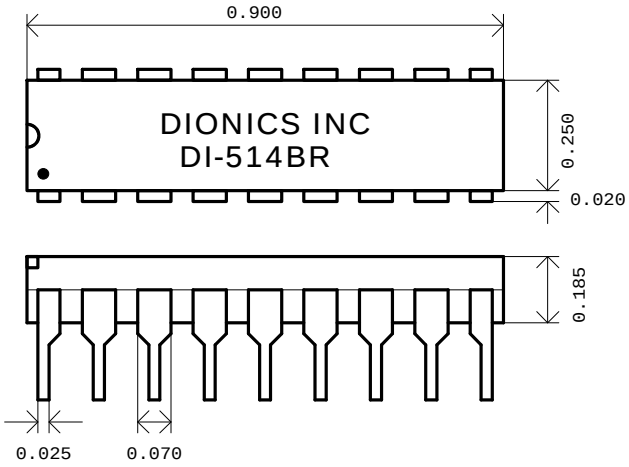
General Description:

The DIONICS DI-512BR, DI-513BR and DI-514BR circuits are designed for interfacing between MOS or TTL logic circuitry and vacuum fluorescent display panels. Each section of these devices consists of a switched constant current level shifter (capable of 50 Volt, 80 Volt or 110 Volt 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.

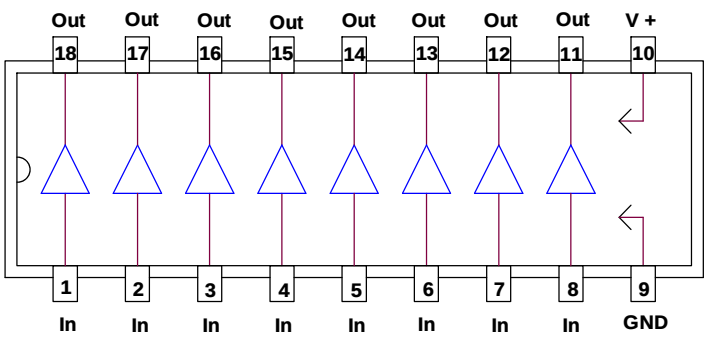
Features:

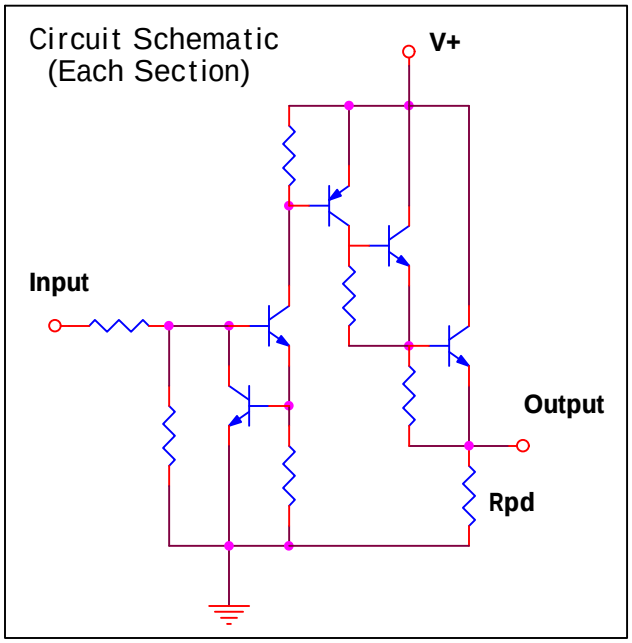
- ✓ 50V, 80V and 110VLevel Shift Capability
- ✓ MOS and TTL Compatibility
- ✓ Segment and Digit Drivers
- ✓ Low Power Dissipation
- ✓ Reliable Silicon Dielectrically IC Process
- ✓ Pin for Pin replacement for SPRAGUE UDN6118A, UDN6128A

Package Layout:



DI-512BR DI-513BR DI-514BR





03/2002

Absolute Maximum Ratings (T_A = 25 ^{0}C)

Characteristic	Symbol	Note	Limit			Unit
			DI-514BR	*DI-513BR*	*DI-512BR*	
Supply Voltage	V_{CC}	Measured with respect to GND terminal	50	80	110	V
Input Voltage	V_I	Measured with respect to GND terminal	30	30	30	V
Output Voltage	V_O	Measured with respect to V+ terminal	50	80	110	V
Output Current	I_O		30	30	30	mA
Power Dissipation	P_D	Derate at 8mW/ ^{0}C, above 25 ^{0}C ambient	800	800	800	mW
Storage Temperature	T_S		-55 ^{0}C	To	+125 ^{0}C	^{0}C
Operating Temperature	T_O		0 ^{0}C	To	+70 ^{0}C	^{0}C

Electrical Characteristics (T_A = 25 ^{0}C)

Parameter	Symbol	Note	Condition	Typ.	Max.	Unit
Output Saturation Voltage	$V_{OS\ (ON)}$	Measured with respect to V+ terminal	I_O =20mA; V_I =2.4V; V_{CC} = 40V	3	5	V
Supply Leakage	$I_{CC\ (OFF)}$	Derate at 8mW / ^{0}C; above 25 ^{0}C ambient				
❖ DI-514BR			V_I = 0.4V; V_{CC} = 50V	10	15	µA
❖ DI-513BR			V_I = 0.4V; V_{CC} = 80V	10	15	µA
❖ DI-512BR			V_I = 0.4V; V_{CC} = 110V	10	15	µA
Input Current	$I_{O\ (ON)}$		V_I =2.4V	300	400	µA
Supply Current	I_{CC}	One Input at 2.4V, Other at 0.4V	I_O = 0mA; V_I = 0.4V; V_{CC} = 50V	0.5	1.0	mA
				Min.	**Max.**	**Unit**
Pull down Current	I_{PD}		I_O = 0mA; V_I = 0.4V; V_O = 40V	200	500	µA
Pull down Resistors	R_{PD}			80	200	kΩ

Typical Application: