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DI-300

DI-302

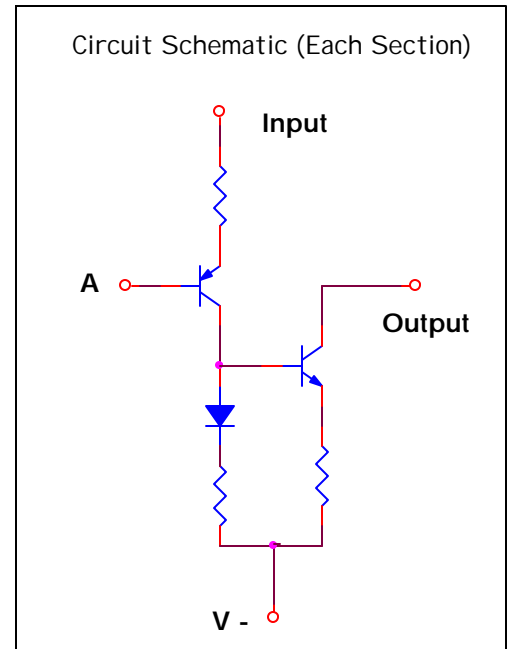
LEVEL-SHIFTED GAS DISCHARGE DISPLAY SEGMENT DRIVER

General Description:

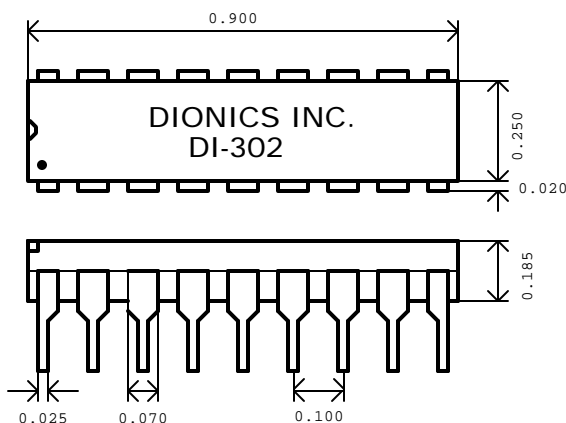
The DIONICS DI-300 and DI-302 are designed to drive gas discharge digital display devices from signals developed in MOS or TTL circuitry. Each output constitutes a switched constant current sink with a compliance of up to 100V. This output level can absorb large fluctuation of supply voltage. The signal is boosted in level by up to 200V (DI-300) or 125V (DI-302). This eases interfacing between logic circuitry and display, thus reduces costs.

Features:

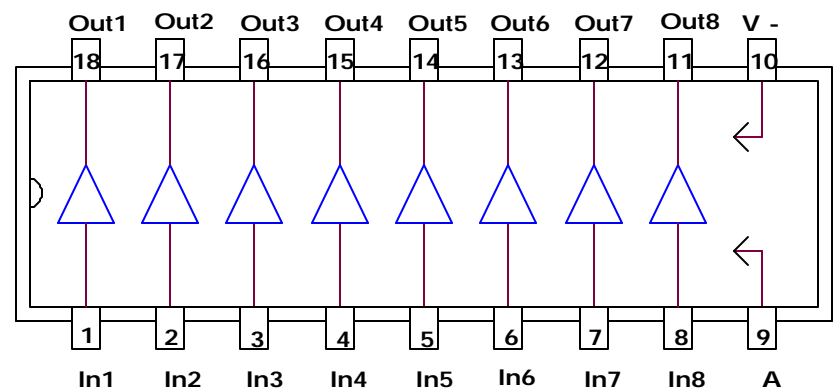
- ✓ Monolithic Silicon Dielectrically Isolated Integrated Circuit
- ✓ Programmable Constant Current Output
- ✓ Current Output Range: 0.1 - 2.5mA
- ✓ 200V (DI-300) or 125V (DI-302) Operation
- ✓ Plastic 18-Pin DIP Package
- ✓ Level Shifted For Ease Of Use
- ✓ MOS and TTL Compatibility
- ✓ Eight-Channel Operation
- ✓ Pin For Pin Replacement For
Sprague UDN 7183A, UDN 7184A or UDN 7186A



Package Layout:



Pin Connections



Absolute Maximum Rating ($T_a = 25^{\circ}\text{C}$)

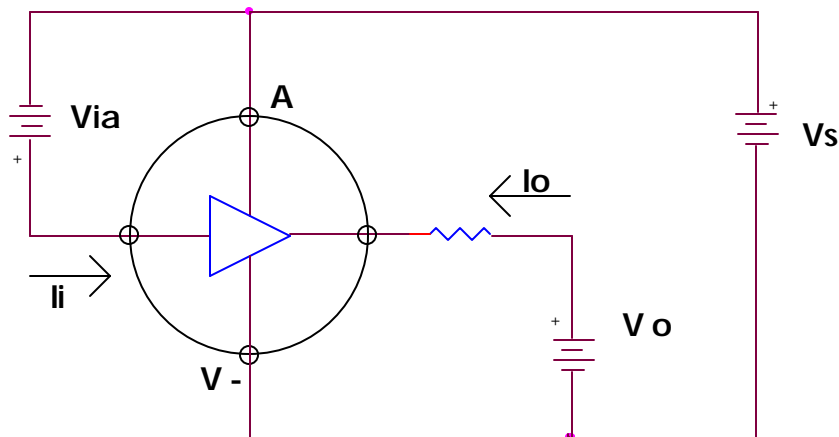
Characteristic	Symbol	Notes	Limits		Units
			DI-300	DI-302	
Supply Voltage	V -	Measured With Respect to Terminal "A"	-200	-125	V
Input Voltage	V_{in}	Measured With Respect to Other Terminal	± 20	± 20	V
Input Voltage	V_{IA}	Measured With Respect to Terminal "A"	20	20	V
Output Voltage	V_o	Measured With Respect to V -	100	100	V
Output Current	I_o		2.5	2.5	mA
Power Dissipation	P_D	Above 25°C Ambient, Derate at $8\text{ mW} / ^{\circ}\text{C}$	800	800	mW
Storage Temp.	T_s		-55 to +125	-55 to +125	$^{\circ}\text{C}$
Operating Temp.*	T_o		0 to +70	0 to +70	$^{\circ}\text{C}$

* Ceramic (-20°C to $+85^{\circ}\text{C}$)

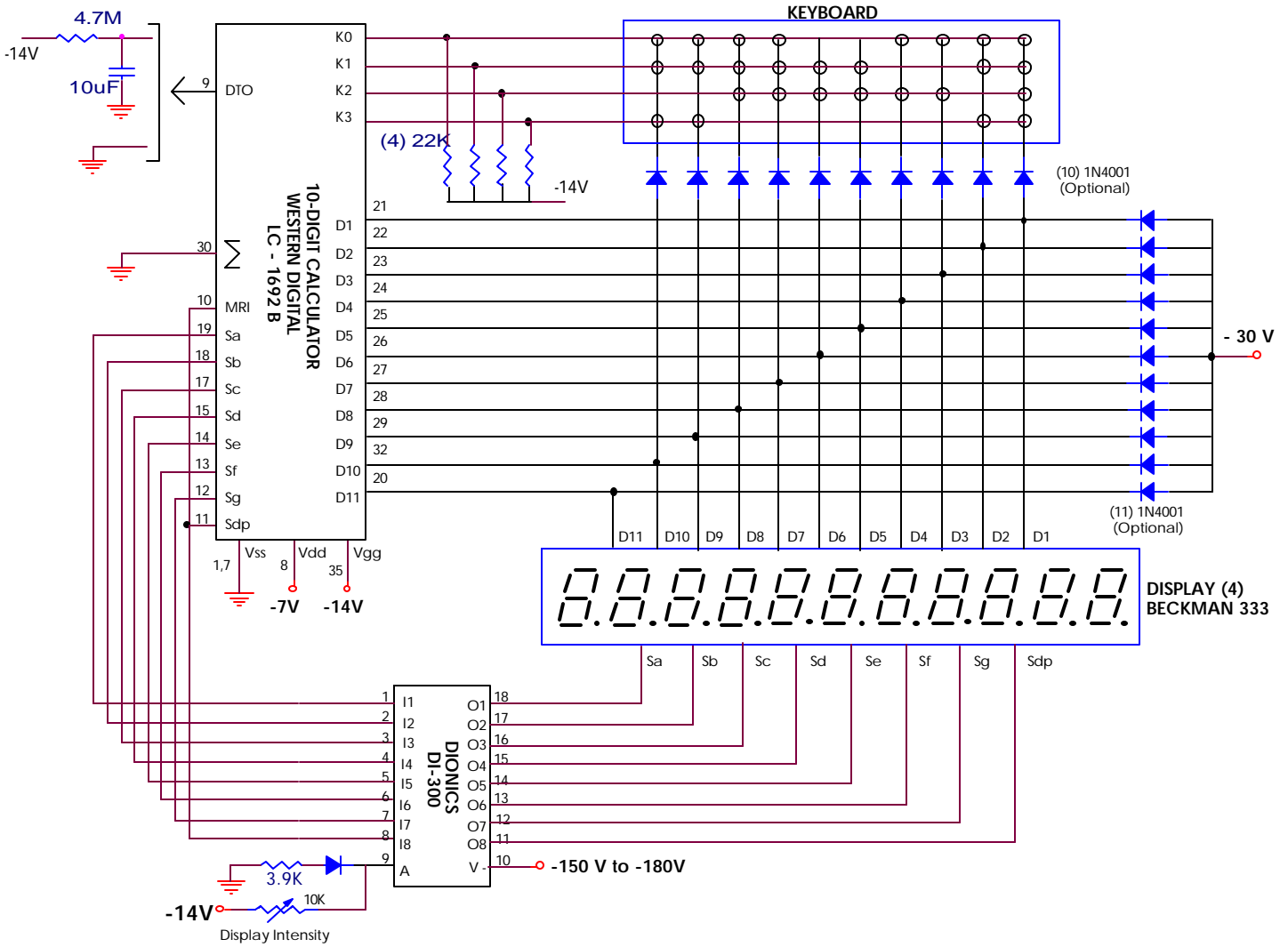
Electrical Characteristics ($T_a = 25^{\circ}\text{C}$)

Parameter	Symbol	Conditions	DI-302			Units
			Min.	Typ.	Max.	
Output Saturation Voltage	V_o (SAT)	$I_o = 1\text{mA}; V_s = 100\text{V}$	-	15	-	V
Output Leakage Current	I_o (OFF)	$V_s = 125\text{V}; V_o = 100\text{V}; V_{IA} = 0\text{V}$	-	1	10	μA
Output Current Match	$\Delta I_o / I_o$	$V_s = 100\text{V}; V_o = 60\text{V}; V_{IA} = 1.2\text{V}$	-	± 10	± 20	%
Output Current	I_o (ON)	$V_s = 100\text{V}; V_o = 60\text{V}; V_{IA} = 1.2\text{V}$	0.5	0.85	1.2	mA
			DI-300			
Output Saturation Voltage	V_o (SAT)	$I_o = 1\text{mA}; V_s = 100\text{V}$	-	15	-	V
Output Leakage Current	I_o (OFF)	$V_s = 200\text{V}; V_o = 100\text{V}; V_{IA} = 0\text{V}$	-	1	10	μA
Output Current Match	$\Delta I_o / I_o$	$V_s = 200\text{V}; V_o = 60\text{V}; V_{IA} = 2\text{V}$	-	10	20	%
Output Current	I_o (ON)	$V_s = 200\text{V}; V_o = 60\text{V}; V_{IA} = 2\text{V}$	0.5	0.85	2.5	mA

Simplified Test Circuit



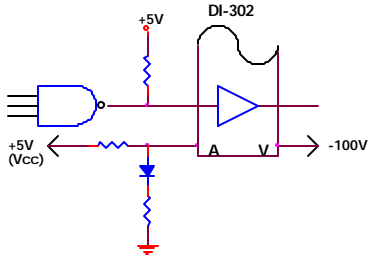
DI-300 Typical Application



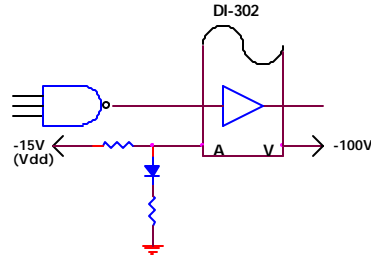
DI-302 Typical Application

These diagrams depict typical methods for setting output (Cathode) current levels. In some cases, resistor values should be varied to adjust output current to a proper level for the particular display device used

TTL Interface



MOS Interface



MOS Interface

