



DIONICS INC.

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DI-210 DI-220

DI-210 / DI-220 GAS DISCHARGE DISPLAY SEGMENT DRIVERS AND LEVEL SHIFTERS

The DIONICS DI-200 Series circuits are designed to drive gas discharge display devices from signals originating from MOS or TTL circuitry. Each output is a switched, programmable constant current sink with a voltage compliance of 150 or 225 volts.

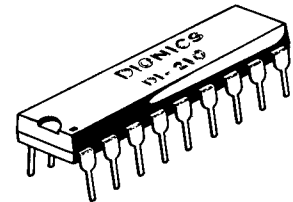
These circuits provide for simple interfaces with displays such as the Beckman, Burroughs Panaplex[®], Cherry or Pantek types.

FEATURES

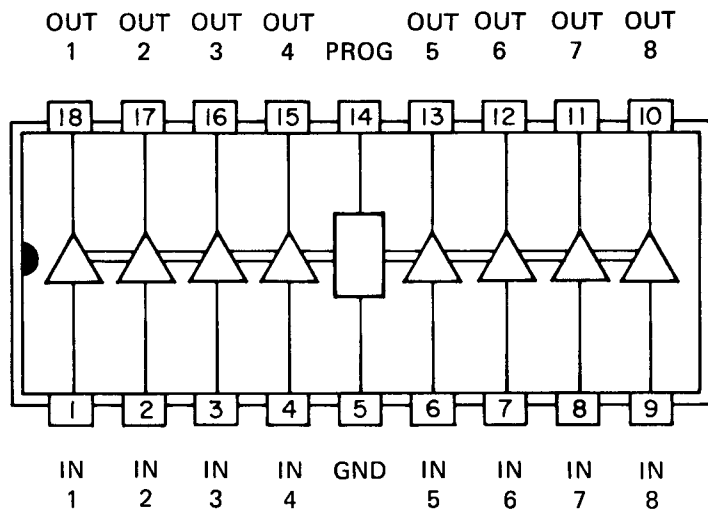
- High Breakdown Voltage: 150 or 225 V.
- TTL or MOS Compatible
- All Output Currents Programmed with Single Resistor
- Requires Few Additional Components

HIGH VOLTAGE

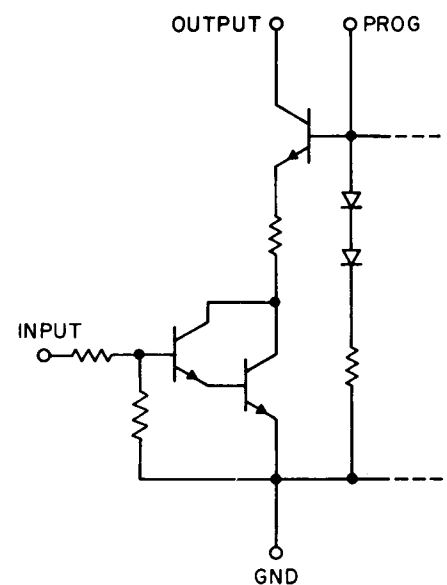
MONOLITHIC SILICON
DIELECTRICALLY ISOLATED
INTEGRATED CIRCUITS



18 LEAD PLASTIC
PACKAGE



PIN CONNECTIONS



CIRCUIT SCHEMATIC

DI-210 DI-220

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

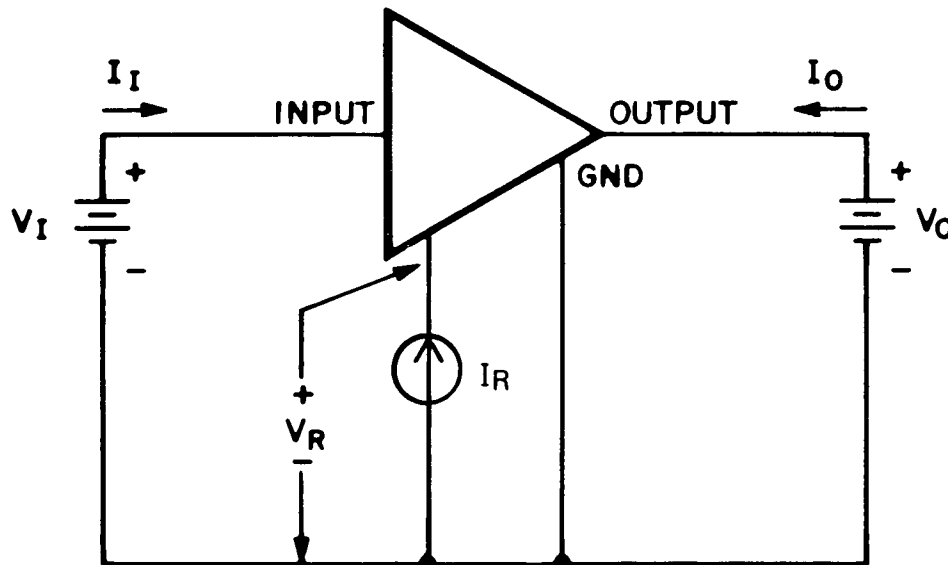
CHARACTERISTIC	SYMBOL	NOTES	LIMITS	UNITS
Input Voltage	$V_{IN} \text{ (max)}$	1	± 7	V
Output Current	$I_O \text{ (max)}$		5	mA
Output Voltage	$V_O \text{ (max)}$		150	V
			225	V
Power Dissipation		2	800	mW
Storage Temperature	T_S		-55 to 125	$^\circ\text{C}$
Operating Temperature	T_O		0 to 70	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

PARAMETER	SYMBOL	NOTES	CONDITION	MIN	TYP	MAX	UNITS
Output Current	$I_O \text{ (on)}$	3	$V_O=60\text{V.}$ $V_I=3.5\text{V.}$	0.85	1.00	1.15	mA
Output Current Match	$\Delta I_O / I_O$	3	$V_O=60\text{V.}$ $V_I=3.5\text{V.}$		5	10	%
Output Leakage	$I_O \text{ (off)}$	3	$V_O = \text{Rated V (all inputs open)}$		0.1	10	μA
Output Saturation Voltage	$V_O \text{ (sat)}$	3	$I_O=1\text{mA}$ $V_I=3.5\text{V.}$		5		V.

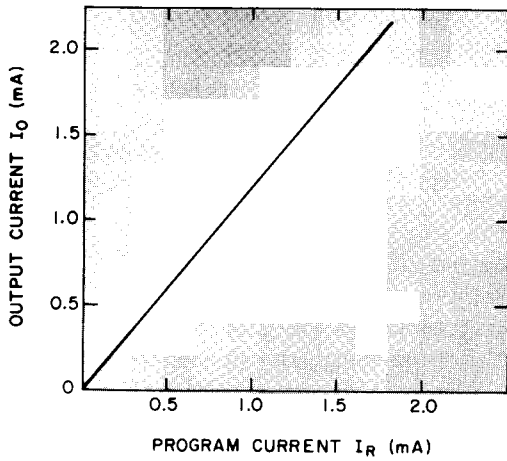
NOTES:

1. Measured with respect to GND terminal.
2. Derate at $8 \text{ mW}/^\circ\text{C}$ above 25°C
3. $I_R = 0.80 \text{ mA}$

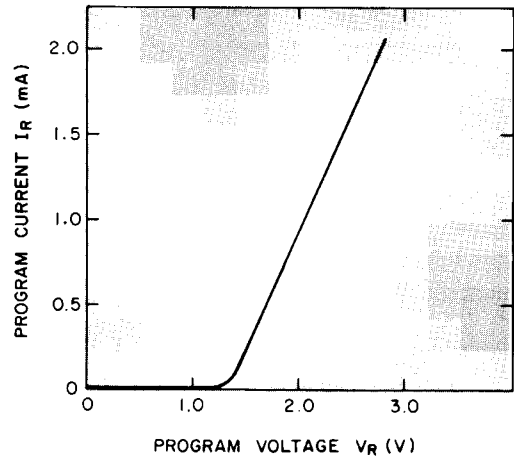


SIMPLIFIED TEST CIRCUIT

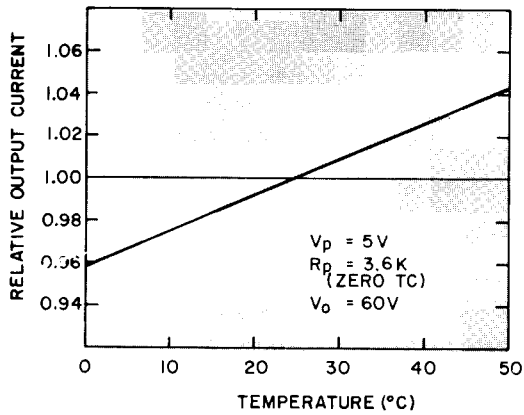
TRANSFER CHARACTERISTICS



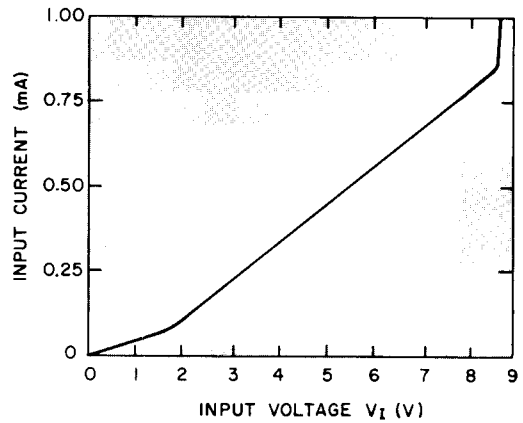
PROGRAM CHARACTERISTICS



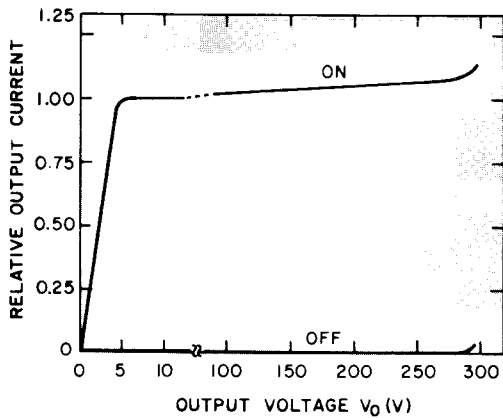
RELATIVE OUTPUT CURRENT VS TEMPERATURE



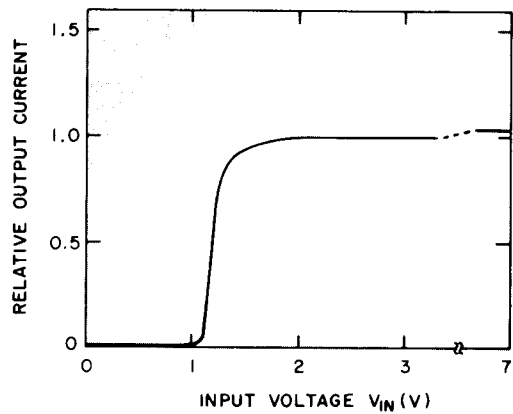
INPUT CHARACTERISTICS

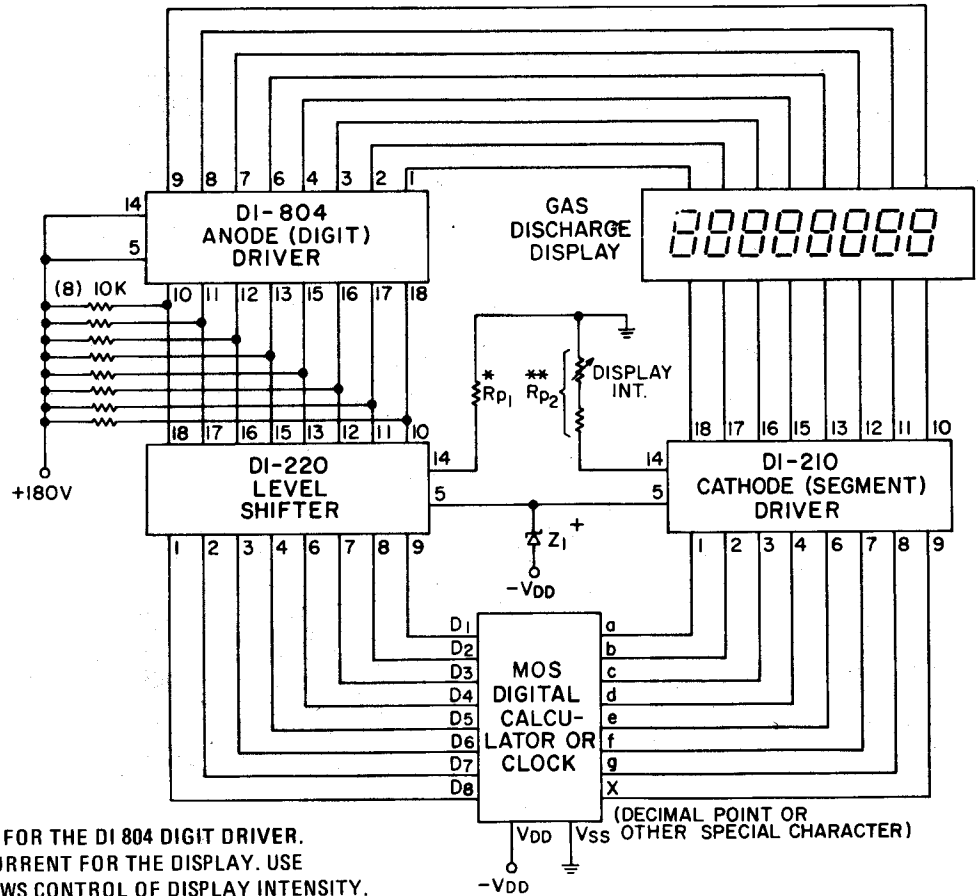


OUTPUT CHARACTERISTICS



CONTROL CHARACTERISTICS





*Rp1 PROGRAMS BASE DRIVE FOR THE DI 804 DIGIT DRIVER.

**Rp2 PROGRAMS SEGMENT CURRENT FOR THE DISPLAY. USE OF A POTENTIOMETER ALLOWS CONTROL OF DISPLAY INTENSITY.

+Z1 ZENER VOLTAGE SELECTED TO LIMIT DI-210 AND DI-220 INPUT VOLTAGE TO ±7V.