

Fluorescent Display Drivers

GENERAL DESCRIPTION

The XR-6118 and the XR-6128 are high-voltage display driver arrays which are designed to interface between low-level digital logic and vacuum fluorescent displays. Each circuit consists of eight independent signal channels comprised of Darlington output stages and common-emitter type inputs. All stages on the chip share common power supply and ground connections. Both device types are capable of driving digits and/or segments of fluorescent displays, and all of the eight outputs can be activated simultaneously.

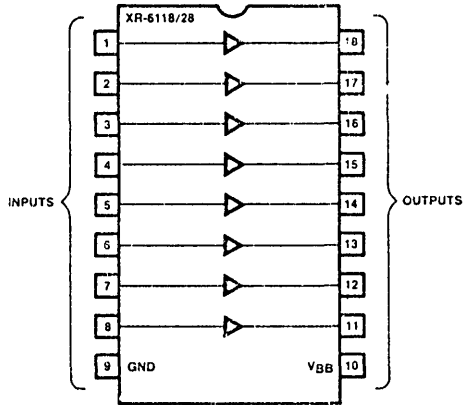
FEATURES

- Direct Replacement for Sprague UDN-6118A, UDN-6128A, and UDN-6118P-2 (60V)
- Digit or Segment Drive Capability
- Low Input Current
- Integral Output Pulldown Resistors
- Low Power
- High Output Breakdown Voltage

ABSOLUTE MAXIMUM RATINGS

Supply Voltage, V_{BB}	85V
Output Voltage, V_{OUT}	85V
Input Voltage, V_{IN}	20V
Output Current, I_{OUT}	40 mA
Power Dissipation, ($T_A \leq 25^\circ\text{C}$)	1 W
Derate Above 25°C	8 mW/ $^\circ\text{C}$
Operating Temperature	0°C to $+85^\circ\text{C}$
Storage Temperature	-55°C to $+150^\circ\text{C}$

FUNCTIONAL BLOCK DIAGRAM



ORDERING INFORMATION

Part Number	Package	Operating Temperature
XR-6118P	Plastic	0°C to $+70^\circ\text{C}$
XR-6128P	Plastic	0°C to $+70^\circ\text{C}$
XR-6118P-2	Plastic	0°C to $+70^\circ\text{C}$

SYSTEM DESCRIPTION

The XR-6118 and XR-6128 fluorescent display drivers can switch up to 85V and 40 mA. Inputs are protected to 20V. The XR-6118 is compatible with TTL, Schottky TTL, DTL and 5 Volt CMOS logic families. The XR-6128 is intended for use with PMOS or CMOS logic families operating with supply voltages of 6V to 15V. The two device types differ only in their input threshold levels (See Figure 1). With either device type, the output load is activated when the inputs are pulled toward positive supply. Output pulldown resistors are included on the die.

XR-6118/6128

ELECTRICAL CHARACTERISTICS

Test Conditions: ($T_A = 25^\circ\text{C}$, $V_{BB} = 80\text{V}$) Full Temp. Range 0°C to $+70^\circ\text{C}$, XR-6118A only.

SYMBOL	PARAMETERS	XR-6118A			XR-6128A			UNIT	CONDITIONS
		MIN	TYP	MAX	MIN	TYP	MAX		
I_{CEX}	Output Leakage Current			15			15	μA	$V_{IN} = 0.4\text{ V}$
V_{OUT}	Output ON Voltage	77			77			V	$I_{OUT} = 25\text{ mA}$ $V_{IN} = 2.4\text{ V (XR-6118)}$ $V_{IN} = 4\text{ V (XR-6128)}$
	Input On Voltage	2.4		15	4.0		15	V	$I_{OUT} = 25\text{ mA}$
	Input ON Current			650			1150	μA	$V_{IN} = 5\text{ V (XR-6118)}$ $V_{IN} = 15\text{ V (XR-6128)}$
$I_{BB(OFF)}$	Supply Current Off Condition			100			100	μA	ALL Inputs Open
$I_{BB(ON)}$	On Condition			9			9	mA	$V_{IN} = 2.4\text{ V (XR-6118)}$ (ALL Inputs)
I_{OUT}	Output Pulldown Current			1100			1100	μA	ALL Inputs Open $V_{OUT} = 80\text{ V}$

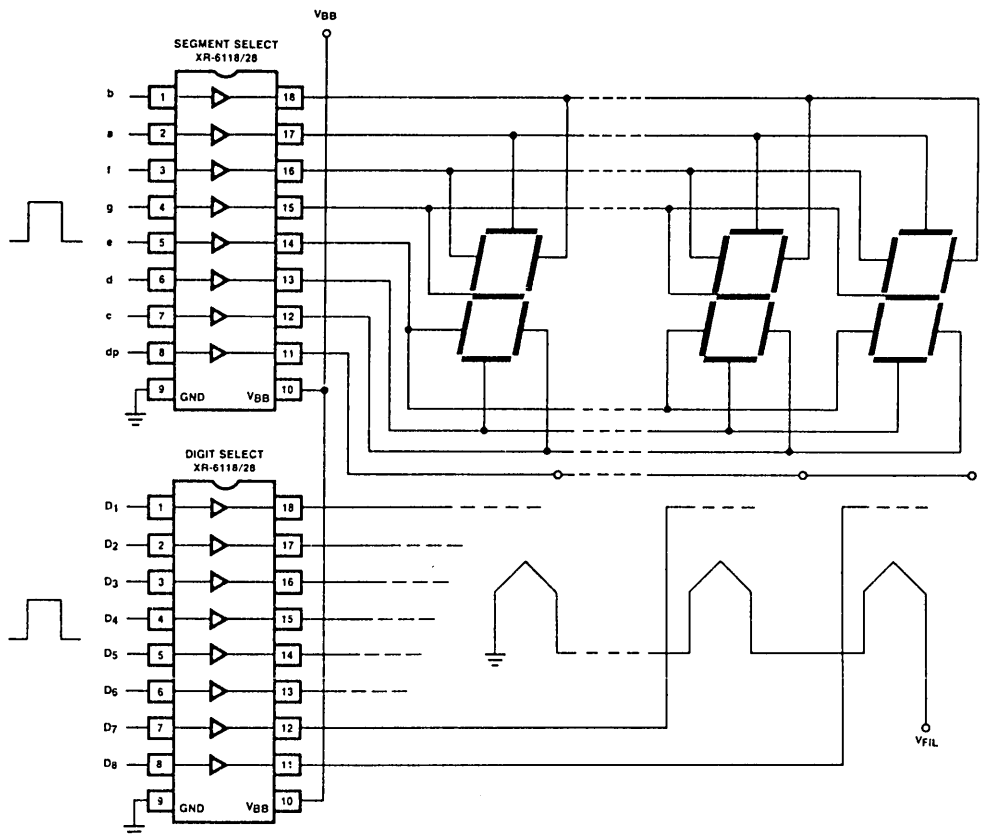
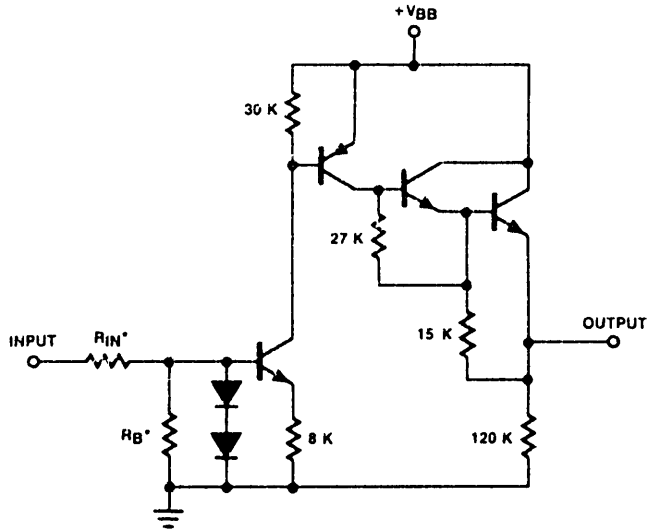


Figure 2. Typical Multiplexed Fluorescent Display Drive Application

XR-6118/6128



One of Eight
Stages

(*) For XR-6118
 $R_{IN} = 10\text{ K}$, $R_B = 30\text{ K}$
For XR-6128:
 $R_{IN} = R_B = 20\text{ K}$

EQUIVALENT SCHEMATIC DIAGRAM