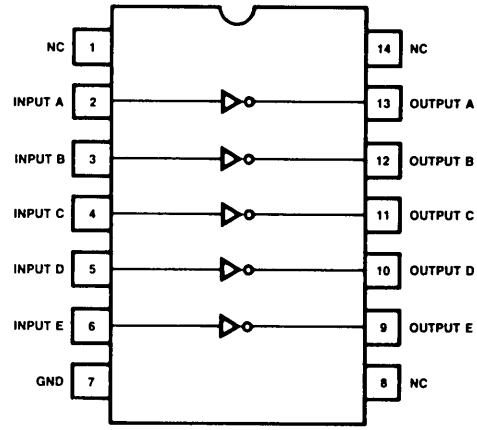
Hammer Driver

GENERAL DESCRIPTION

The XR-2200 is an array of five Darlington transistor pairs which are capable of driving high-current loads such as solenoids, relays, and LED's. Each of the five circuits contained on the XR-2200 is capable of sinking up to 400 mA. The XR-2200 was specifically designed for use with 14 V to 25 V PMOS devices.

FUNCTIONAL BLOCK DIAGRAM



FEATURES

Output Capability of 400 mA for Each Driver
Drivers may be used in parallel for increased output drive capability.
Input is directly compatible with PMOS outputs

APPLICATIONS

Printing Calculator Hammer Driver
High Current LED Driver
Solenoid and Relay Driver
Tungsten Lamp Driver
High Current Switch

ORDERING INFORMATION

Part Number	Package Type	Operating Temperature
XR-2200 CP	Plastic	−25°C to +70°C

ABSOLUTE MAXIMUM RATINGS

Collector to Base Voltage	30V
Collector to Emitter Voltage	30V
Emitter to Base Voltage	5.5V
Collector Current	450 mA
Input Terminal Breakdown Voltage (plus)	30V
Input Terminal Breakdown Voltage (minus)	−0.5V
Power Dissipation	550 mW

SYSTEM DESCRIPTION

The XR-2200 hammer driver contains five Darlington connected transistor pairs, each capable of switching 30V. All five emitters are connected to a common ground (Pin 7). With a guaranteed current gain of 2000, each section of the XR-2200 can sink 400 mA.

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

PARAMETERS	LIMITS MIN	LIMITS TYP	LIMITS MAX	UNITS	CONDITIONS
Power Supply Voltage			26	Vdc	
Output Leakage Current			100	μA	V_{CE} = 26 V, V_{IN} = 0 V
Output Current One Driver			400	mA	
Output Current 5 Drivers					See Figure 2
Output Saturation Voltage			2.2	Vdc	I_{OUT} = 400 mA V_{IN} = 17 V I_{OUT} = 200 mA V_{IN} = 17 V
Current Gain	2000				V_{CE} = 3 V I_{OUT} = 200 mA
Input Current		0.7		mA	V_{IN} = 17 V I_{OUT} = 0 mA

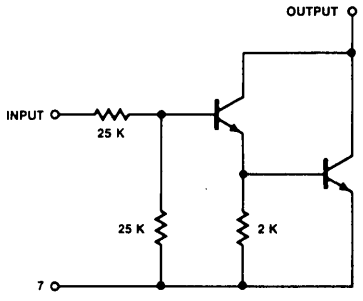


Figure 1. Schematic Diagram (1 of 5 Circuits Shown)

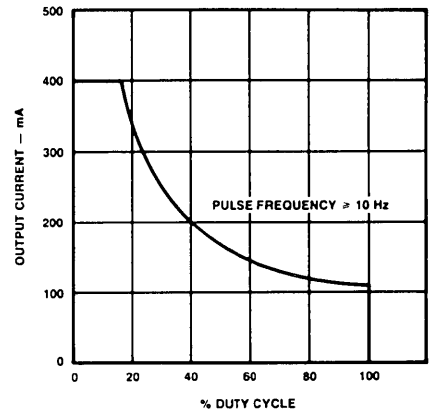


Figure 2. Maximum Permissible Output Current per Driver vs Duty Cycle with 5 Drivers Pulsed Simultaneously.

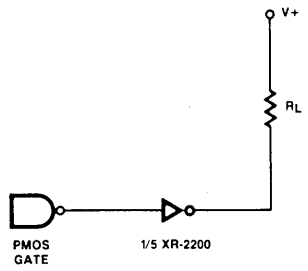


Figure 3. Circuit Connection for Driving Non-Inductive Loads

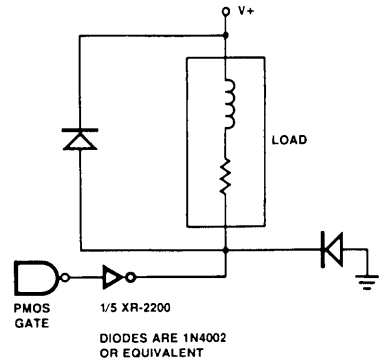


Figure 4. Circuit Connection for Driving Inductive Loads. NOTE: The XR-2200 may be damaged if the diodes are omitted when driving an inductive load.