# imall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

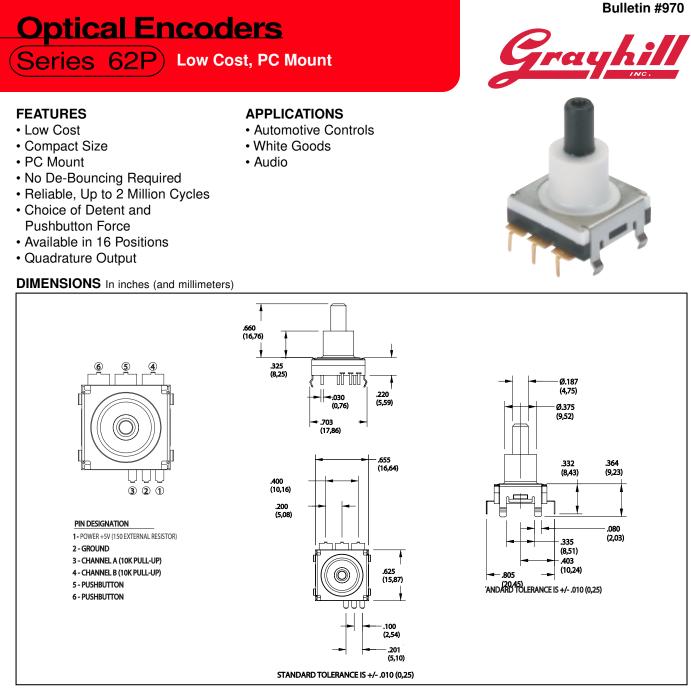
We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



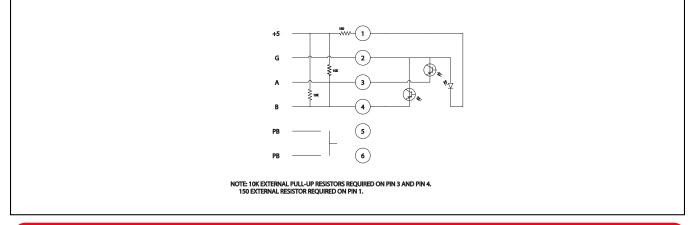
# Contact us

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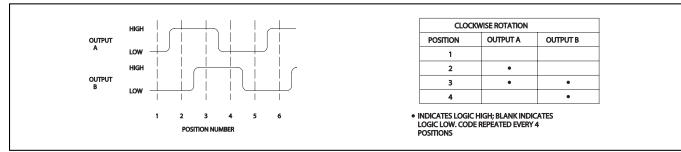




## CIRCUITRY AND JOYSTICK OPERATION Standard Quadrature 2-Bit Code



#### WAVEFORM AND TRUTH TABLE Standard Quadrature 2-Bit Code



# **SPECIFICATIONS**

#### **Electrical Ratings**

Operating Voltage: 5 Vdc +/-.25 Vdc Supply Current: 30mA maximum at 5 Vdc Logic High: 3.0V minimum Logic Low: 1.0V maximum Logic Rise and Fall: less than 30 Ms

#### **Pushbutton Switch Ratings**

Rating: 5.0 Vdc at 10mA resistive Contact Resistance: less than 10 ohms (TTL or CMOS compatible) Voltage Breakdown: 250 Vac between mutually insulated parts Contact Bounce: less than 4 mS at make and less than 10 mS at break Actuation Life: 3,000,000 operations Actuation Force: 6: 600 +/- 200 grams 4: 450 +/- 150 grams

# **Mechanical Ratings**

**Operating Torque:** H: 1.4 in-oz +/- 0.6 in-oz initial L: 0.6 in-oz +/- 0.3 in-oz initial **Rotational Life:** H&L: 500,000 cycles N: 2 million cycles (1 cycle = 360 degree rotation and return) Shaft Push Out Force: 20 lbs minimum Operating Speed: 100 RPM maximum Axial Shaft Play: .010 maximum

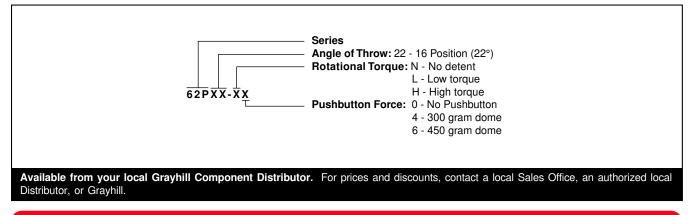
#### **Environmental Ratings**

**Operating Temperature Range:** -40°C to 85°C Storage Temperature Range: -55°C to 100°C Relative Humidity: 90-95% at 40°C for 96 hours Vibration Resistance: Harmonic motion with Amplitude of 15g, within a varied 10 to 2000 Hz frequency for 12 hours per MIL-STD-202, Method 204 Shock Resistance: Test 1: Tested at 100g for 6mS, half sine, 12.3 ft/s Test 2: 100g for 6mS, Sawtooth, 9.7 ft/s

#### **Materials and Finishes**

Code/Pushbutton Housing: Thermoplastic Shaft: Thermoplastic Code/Detent Rotor: Reinforced Thermoplastic Bushing: Thermoplastic Terminal Pins: Brass, Tin plated Detent Spring: Stainless Steel Dome: Stainless Steel Pushbutton Contact: Nickel plated brass Phototransistor: Planar Silicon Detent Balls: .0625 dia. Stainless Steel Infrared Emitter: Gallium Aluminum Arsenide Label: White Thermal Transfer Cast Film. Adhesive Coated Bracket: Stainless Steel, Tin plated

## **ORDERING INFORMATION**



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