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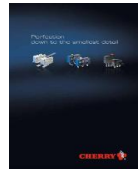
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# MX Series

Desktop Profile 0.60 Inch Keyswitches

- FEATURES
- Desktop profile, 0.60 inch (15.2mm) from PCB (no keycap)
  - Choice of feel: linear, soft tactile, click tactile
  - PCB or frame mount
  - Long life 50 million operations
  - 4mm travel
  - LED, diode or jumper option
  - 12V [= Typical car battery] maximum AC/DC
  - Current Rating: 10mA
  - Insulation Resistance: <100MΩ at 100V DC



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SPECIFICATIONS

<b>Electrical</b>	
Voltage:	12 VAC/DC max. 2 VDC min.
Current:	10mA AC/DC max. 10μA DC min.
Insulation Resistance:	100MΩ at 100V
Initial Contact Resistance:	200mΩ (25mΩ typical)
Bounce Time:	≤5msec (at 16 in/sec. actuation speed)
Capacitance:	<2pF (at 1kHz)
Operating Temperature:	-10°C to +70°C

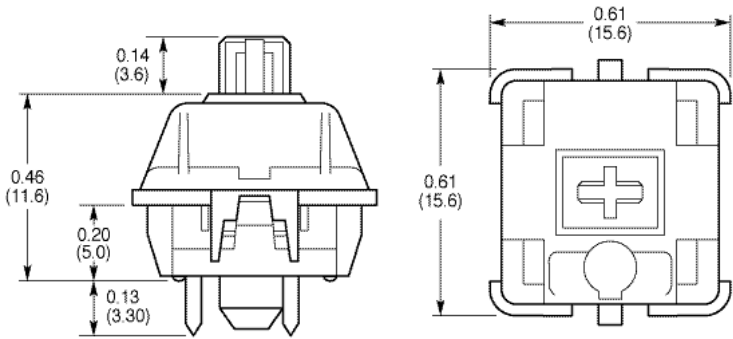
Storage Temperature: -40°C to +70°C  
Flammability Rating: UL94HB

**Materials**  
Case: Thermoplastic  
Contacts: Silver-Gold?? (AuAg 10)  
Spring: Stainless Steel  
Solderability: Wave solder, 5 seconds at 500°F

APPROVALS

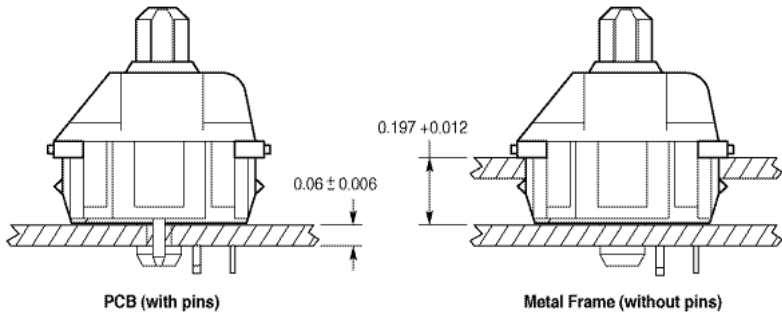


DIMENSIONS



Inches (mm)

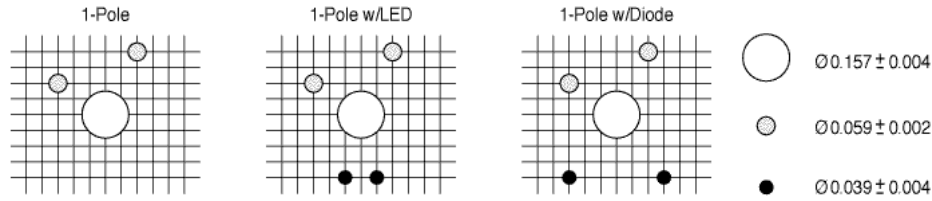
MOUNTING OPTIONS



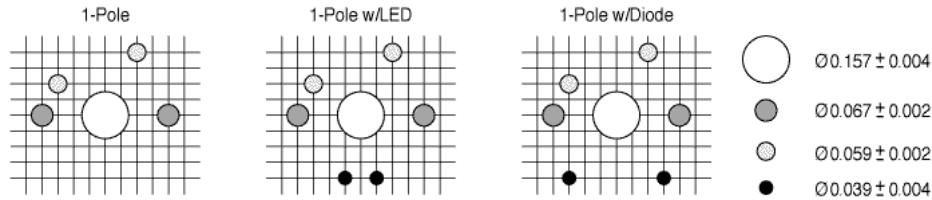
Inches (mm)

CIRCUIT BOARD LAYOUTS

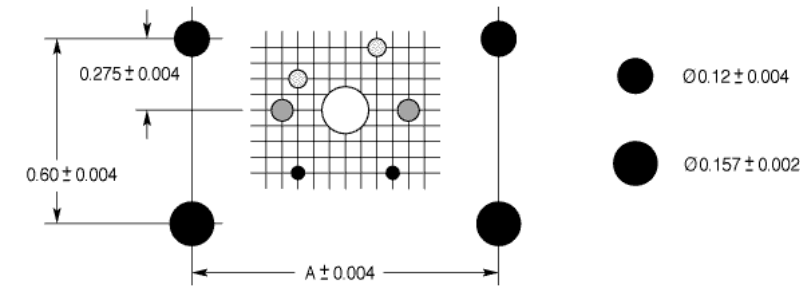
Keyswitch without Fixation Pins



Keyswitch with Fixation Pins



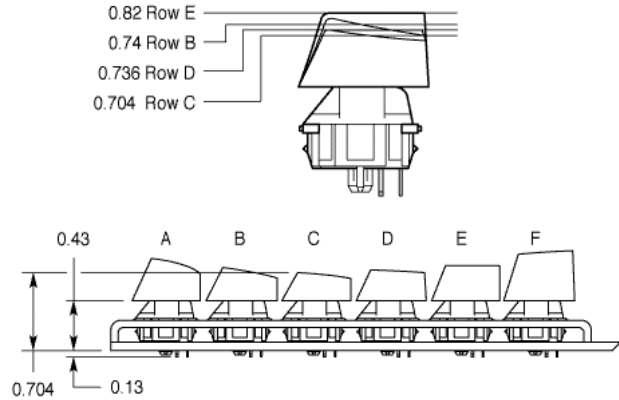
Spacebar without Frame



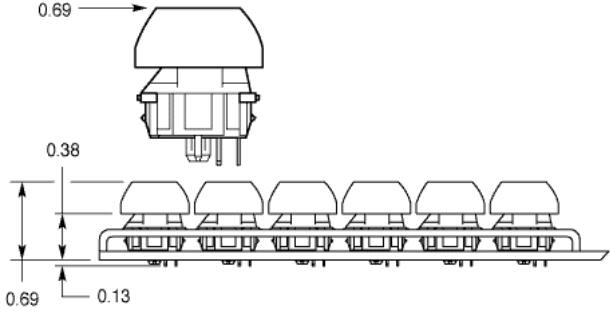
grid line spacing = 0.05 inch (1.27mm)

KEYCAP DIMENSIONS

Cylindrical Type (7mm)



Standard Type (8mm)

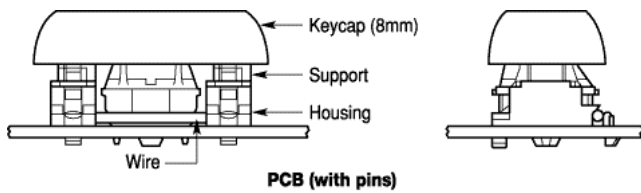


ACTUATION SPECIFICATIONS

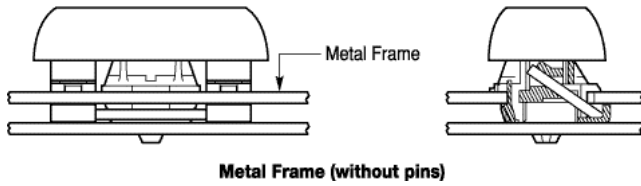
Mechanical Motion	Linear Feel	Soft Tactile Feel	Click Tactile Feel
Operating Force	2.1 oz. ±0.7 oz.	2.0 oz. ±0.7 oz.	1.8 oz. ±0.5 oz.
Pretravel	0.08 in. ±0.024 in.	0.08 in. ±0.024 in.	0.09 in. ±0.024 in.
Total Travel	0.16 in. - 0.015 in.	0.16 in. - 0.02 in.	0.16 in. - 0.02 in.
Tactile Force	N/A	2.3 oz. ±0.7 oz.	2.1 oz. ±0.5 oz.

SPACEBAR MOUNTING OPTIONS

PCB (with pins)

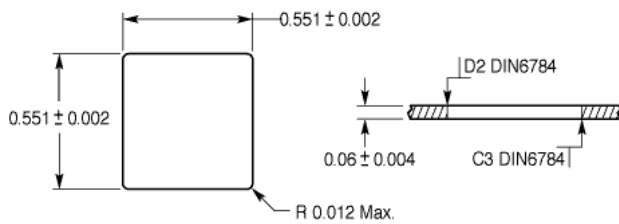


Metal Frame (without pins)

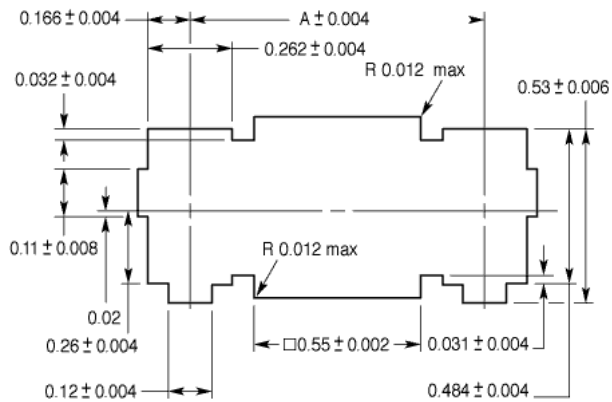


## METAL FRAME CUTOUT DIMENSIONS

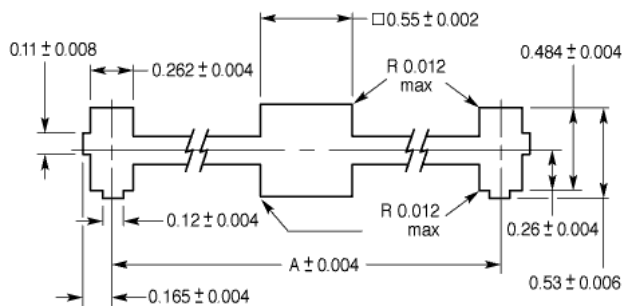
Keyswitch



Spacebar (Keycap sizes 1x2, 1x2.5, 1x2.75)



Spacebar (Keycap sizes 1x3, 1x7, 1x8, 1x9, 1x10)



For dimension "A" refer to chart below. All dimensions shown are in inches.

## LEVELING MECHANISM KITS

Keycap Size	1x2 1x2.5 1x2.75	1x3	1x8	1x8 1x9 1x10	1x7
Keycap Type	Standard & Cylindrical	Standard & Cylindrical	Standard	Cylindrical	Cylindrical
Dimension "A" (inches)	0.94	1.50	5.25	5.25	4.5
Part Number with Frame	G99-0224	G99-0225	G99-0226	G99-0226	G99-0379
Part Number without Frame	G99-0742	G99-0743	G99-0744	G99-0744	G99-0745

ORDERING INFORMATION

Part Number Examples	Description
MX1A-11DN	Standard force, momentary, face plate mount with diode
MX1A-11NN	Standard force, linear, face plate mount
MX1A-11NW	Standard force, linear, PCB mount
MX1A-21NW	Higher force, linear, PCB mount
MX1A-C1NN	Standard force, soft tactile, face plate mount
MX1A-C1NW	Standard force, soft tactile, PCB mount
MX1A-E1NN	Standard force, click tactile, face plate mount
MX1A-E1NW	Standard force, click tactile, PCB mount

ORDERING INFORMATION — BUILD A PART NUMBER

MX		1		A		1		1		N		N	
Keyswitch Series	Code	Contact Material	Code	Contact Config.	Code	Operating Characteristics, Actuating Force and Key Style	Code	Keystem Config.	Code	LED Diode	Code	PCB Mountg Pins	
10mA, 12V [= Typical car battery] max.	1	AuAg10, 10mA, 12V [= Typical car battery] max.	A	SPST NO	0	Special	1	Standard straight for cylindrical and standard keycaps	N	No LED, No diode	N	No pins (metal frame required)	
			C	Special	1	Momentary, single-pole, 2.1 oz., standard keyswitch, black keystem			R	Red LED, No diode	W	With pins	
					2	Momentary, single-pole, 2.8 oz., spaceba, grey 37 keystem			G	Green LED, No diode			
					C	Momentary, single-pole, tactile feel, 2.3 oz., clear keystem			Y	Yellow LED, with diode			
					D	Momentary, single-pole, tactile feel, 2.8 oz., spacebar, grey 39 keystem			D	No LED, with diode			
					E	Momentary, single-pole, tactile feel, 2.1 oz., "click"differential movement, blue keystem			J	With Jumper Wire, no LED, no diode			
5	Special				F	Momentary, single-pole, tactile feel, 2.8 oz., "click"differential movement, spacebar, green keystem							

Specifications subject to change without notice.



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