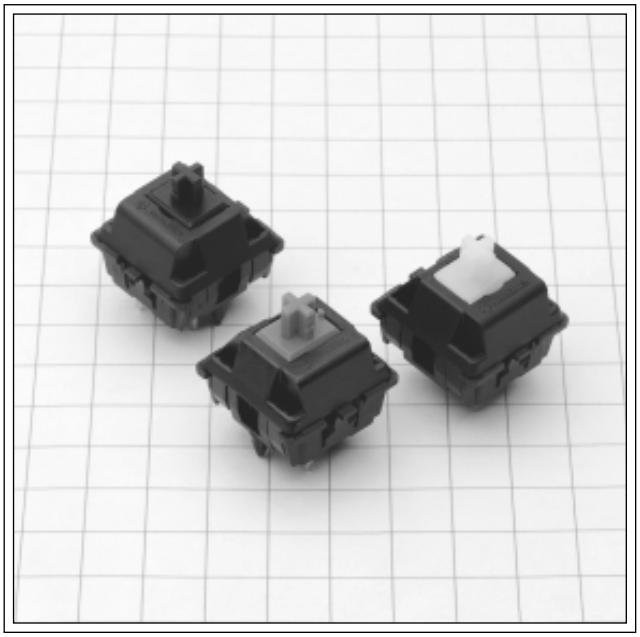
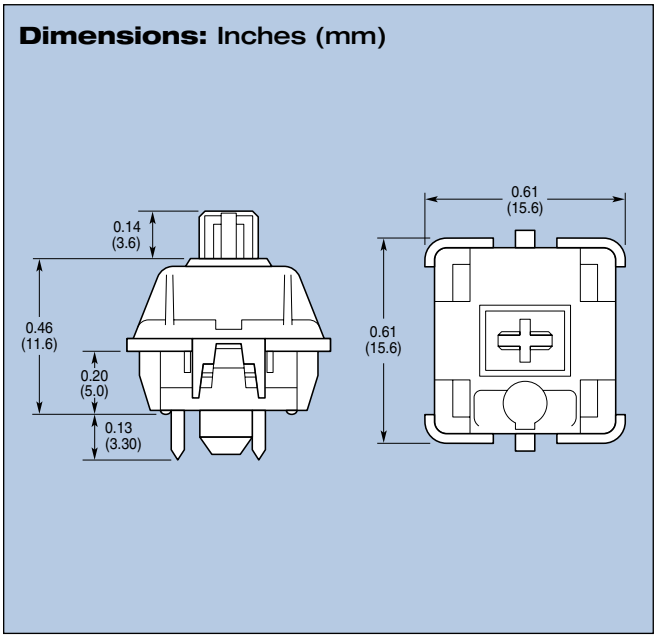
MX Series Keyswitch

MX Desktop Profile





Specifications

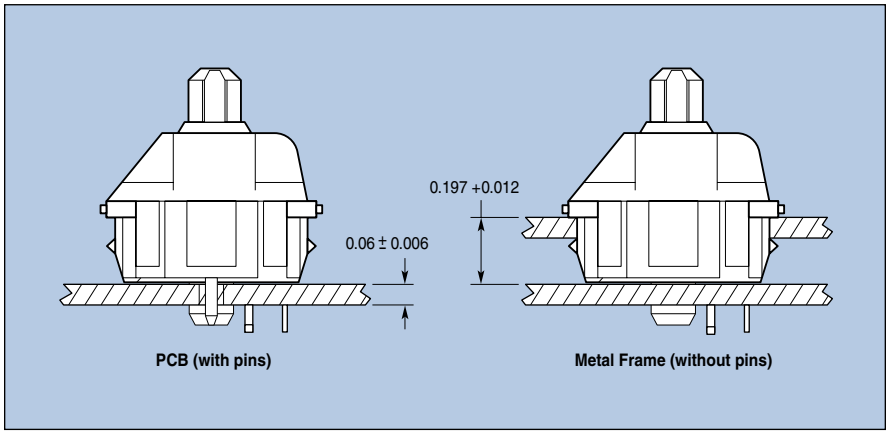
Voltage	12 VAC/DC max. 2 VDC min.
Current	10mA AC/DC max. 10µA DC min.
Insulation Resistance	100 M Ω at 100 VDC
Capacitance	<2pF (at 1kHz)
Bounce Time	≤5 msec (at 16 in/sec actuation speed)
Life	(at 5 V, 1mA, no load)
MX Linear	50 x 10^6 cycles
MX Soft Tactile	20 x 10^6 cycles
MX Click Tactile	20 x 10^6 cycles
MX Alternate Action	50 x 10^5 cycles
Initial Contact Resist.	200 m Ω (25 m Ω typical)
Materials	
Plastics	Thermoplastic, UL-rated
Contacts	AuAg 10
Spring	Stainless steel
Flammability Rating	UL94HB
Solderability	Wave solder 5 seconds at 500°F
Environmental	
Operating Temp. Range	-10° to +70°C
Storage Temp. Range	-40° to +70°C
Relative Humidity	5% to 95%, non-condensing

Mechanical Motion

	Linear Feel	Soft Tactile Feel
Operating Force	2.1 oz ±0.7 oz	2.0 oz ±0.7 oz
Pretravel	0.08" ±0.24"	0.08" ±0.24"
Total Travel	0.16" -0.015"	0.16" -0.2"
Tactile Force	N/A	2.3 oz ±0.7 oz

	Click Tactile Feel	Alternate Action
Operating Force	1.8 oz ±0.5 oz	2.1 oz ±0.7 oz
Pretravel	0.09" ±0.24"	0.05" ±0.015"
Total Travel	0.16" -0.02"	0.16" ±0.01"
Tactile Force	2.1 oz ±0.5 oz	N/A

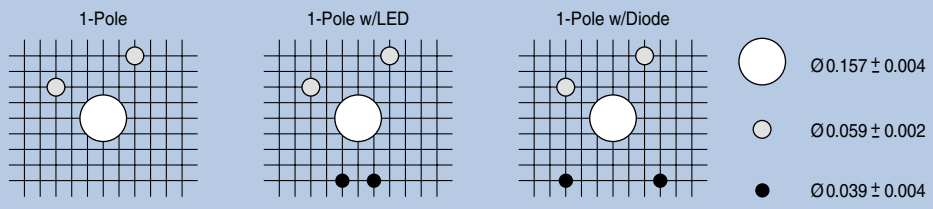
Mounting Options



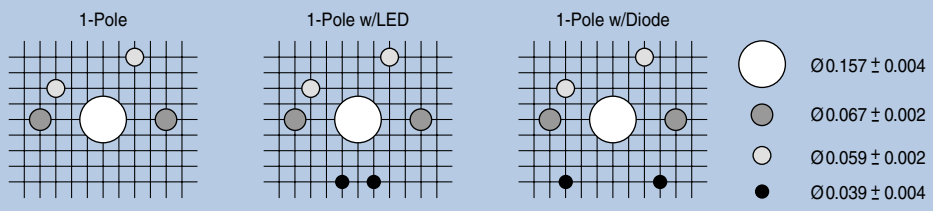
Circuit Board Layouts

Grid line spacing = 0.05 inch

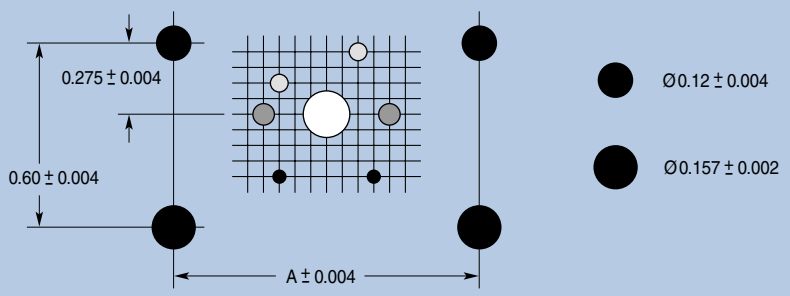
Keyswitch without fixation pins



Keyswitch with fixation pins

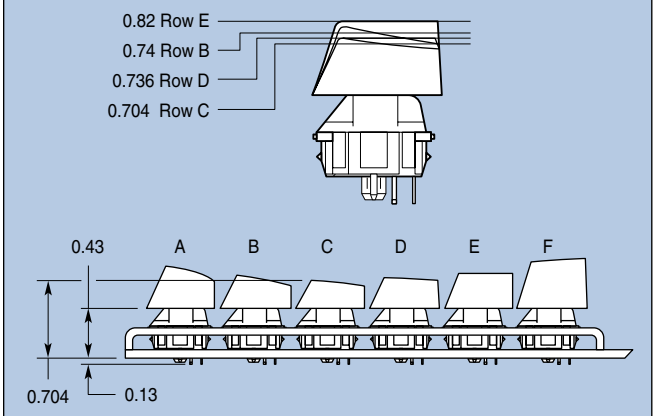


Spacebar without frame

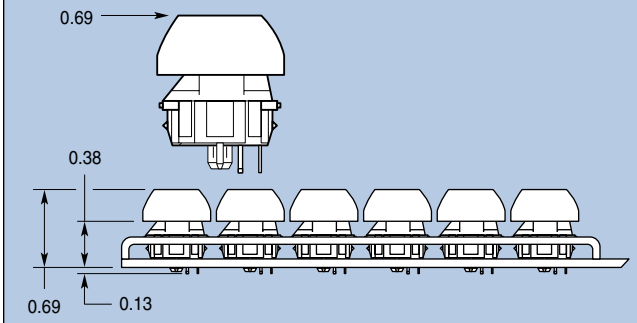


Keycap Dimensions

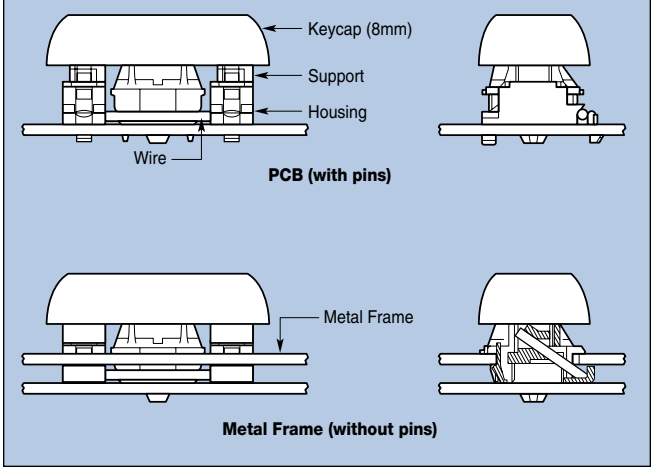
Cylindrical Type (8 mm)



Standard Type (8 mm)

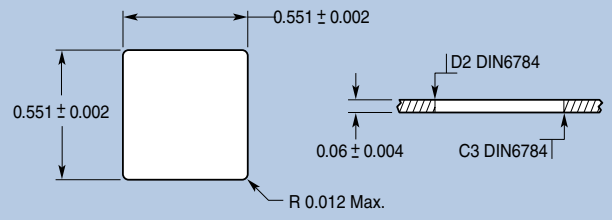


Spacebar Mounting Options

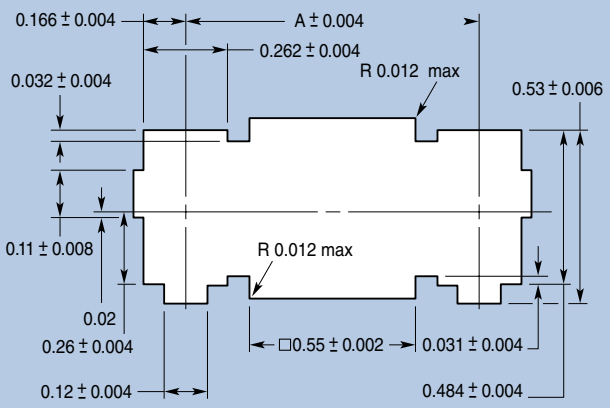


Metal Frame Cutout Dimensions

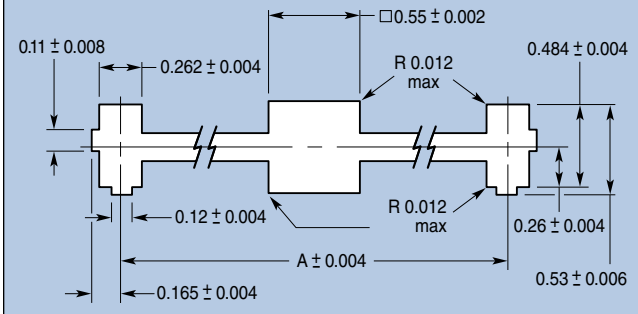
Keyswitch



Spacebar
(Keycap sizes 1 x 2, 1 x 2.25, 1 x 2.75)



Spacebar
(Keycap sizes 1 x 3, 1 x 7, 1 x 8, 1 x 9, 1 x 10)



Leveling Mechanism Kits

Keycap Size	1 x 2 1 x 2, 2.5 1 x 2, 2.75	1 x 3	1 x 8	1 x 8 1 x 9 1 x 10	1 x 7
Keycap Type	Std & Cylin	Std & Cylin	Std	Cylin	Cylin
A (inches)	0.94	1.5	5.25	5.25	4.5
P/N w/frame	G99-0224	G99-0225	G99-0226	G99-0226	G99-0379
P/N w/o frame	G99-0742	G99-0743	G99-0744	G99-0744	G99-0745

Soldering Parameters

1. Flux Station

A. Flux – Fry type GR8

B. Applied by foaming

C. Specific gravity – 0.820 g/cm3

2. Conveyor Speed

A. 2.3 meters/min.

3. Pre-heat Temperature

A. +88°C measured on top surface of PCB

4. Solder

A. 63/37 alloy

B. Dry wave – no oil

C. Approximate contact with wave – 2 seconds

5. Cleaning

A. Fry GR8 is non-hygroscopic flux and does not require cleaning

B. If cleaning is required on isolated areas such as finger connector, cold cleaning by hand with Alpha 564 is recommended. Care must be taken to avoid solvent entering the keymodule.

Ordering Information

Part Number	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-31NN	Alternate action, face plate mount
MX1A-31NW	Alternate action, 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

MX | **1** | **A** | **1** | **1** | **N** | **N**

Keyswitch/Type

Code	Contact Material
1	AuAg10 10mA/12V max
2	—
3	—
4	—
5	Special

Code	Contact Config.
A	SPSTNO
B	—
C	Special
D	—

CODE	Operating Characteristics, Actuating Force and Key Style
0	Special
1	Momentary, single pole, 2.1 oz, standard keyswitch, black keystem
2	Momentary, single pole, 2.8 oz, spacebar, grey 37 keystem
3	Alternate action, single pole, 2.1 oz
C	Momentary, single pole, tactile feel, 2.3 oz, clear keystem
D	Momentary, single pole, tactile feel, 2.8 oz, spacebar, grey 39 keystem
E	Momentary single pole, tactile feel 2.1 oz, “click” differential movement, blue keystem
F	Momentary, single pole, tactiel feel, 2.8 oz, “click” differential movement, space bar, green keystem

CODE	Keystem Configuration
1	Std straight for cylin & std keycaps

Code	LED Diode
N	No LED No diode
R	Red LED no diode
G	Green LED no diode
Y	Yellow LED w/diode
D	No LED w/diode
J	w/jumper wire no LED no diode

CODE	PCB Mounting Pins
N	No pins (metal frame req)
W	With pins