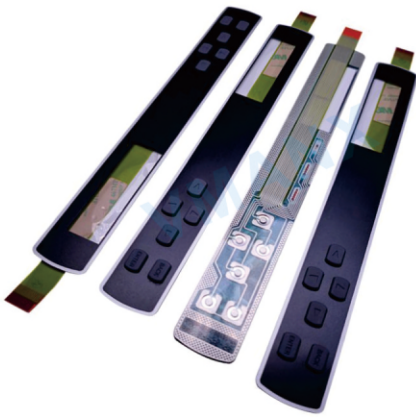


Silicone Membrane Switch Technical Datasheet



1. Layer Structure

- PC Graphic Overlay
- Double sided adhesive layer
- Silicone Keypad Layer
- Double sided adhesive layer
- PET Circuit Layer (Integrated Metal Domes/LEDs/Resistors)
- Rear adhesive layer



2. Electrical Specifications

Parameter	Specification	Test Standard
Operating Voltage	5-24V DC	IEC 61000
Contact Resistance	≤100mΩ	MIL-STD-202
Insulation Resistance	≥100MΩ (500VDC)	IPC-9201
Rated Current	50mA (LED)/100mA (Switch)	UL 508
Circuit Resistance	≤1Ω	EIA-364-06
Breakdown Voltage	≥500V AC (1 min)	IEC 60112
LED Lifespan	≥50,000 hours	IES LM-80

3. Mechanical Properties & Durability

Item	Specification
Key Travel	0.2–0.6mm (customizable)
Actuation Force	180±50gf (Standard)
Operating Life	≥1,000,000 cycles (Metal Dome)
Return Time	≤10ms
Overlay Hardness	3H (PC surface, pencil hardness)

4. Environmental Resistance

Test Item	Requirement	Compliance Standard
Operating Temperature	-40°C ~ +85°C	IEC 60068-2-1/14
IP Rating	IP54 (Dust/Water Splash Proof)	IEC 60529
Damp Heat	95% RH, 48h no failure	MIL-STD-810G
Salt Spray Test	48h no corrosion	ASTM B117
Chemical Resistance	Resists alcohol, weak acids, cleaners	ISO 2812-2

5. Optical Performance (Integrated LED)

▶ Luminance	: ≥800mcd (White, 20mA)
▶ Colors	: Red/Green/Blue/White/Yellow (selectable)
▶ Uniformity	: >85% (silicone light-guide design)
▶ Light Transmission	: ≥92% (Laser-Etched PC Overlay)

6. Key Advantages

6.1 Triple-Sealed Structure	
▶ UV-coated PC overlay resists scratches; laser-cut silicone gasket; fully encapsulated PET circuit. Achieves IP54 protection.	
6.2 Ultra-Thin Integration	
▶ Total thickness ≤1.5mm. Unified PET circuit with metal domes + LEDs + resistors minimizes failure points.	
6.3 Extreme Environment Reliability	
▶ Maintains elasticity at -40°C; no deformation at 85°C. Passes 85°C/85% RH, 500h test.	
6.4 Optimized Tactility & Longevity	
▶ Linear force feedback; metal domes rated for 1,000,000 cycles (tested ≥500,000 cycles).	
6.5 Customization Flexibility	
▶ Supports backlit icons/logos; IP67 upgrade; optional EMI shielding layer.	

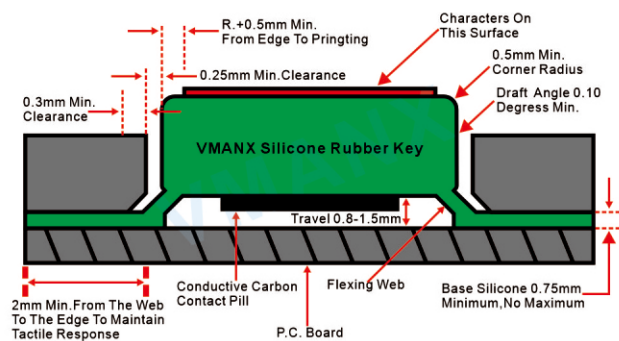
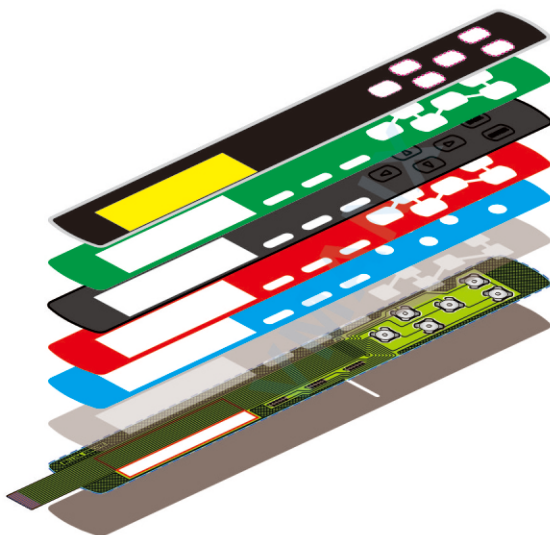
7. Certifications & Compliance

▶ Safety	: RoHS 3.0, REACH SVHC, UL 94 V-0 (Flame-Retardant PC)
▶ Warranty	: 2 years (Normal operating conditions)
▶ Production Standard	: ISO 9001:2015 QMS

8. Applications

▶ Industrial control panels, medical devices, outdoor instrumentation, automotive dashboards, smart home interfaces.

9. Product diagram



RoHS COMPLIANT

