

MK24 Series Surface Mount Reed Sensors

DESCRIPTION

The MK24 Series are 5mm ultra-miniature high performance non-contact Reed Sensors which are especially suitable for low power applications.

FEATURES

- Ultra-miniature size (5mm)
- Hermetically sealed
- Dynamically tested contacts
- Millions of reliable operations
- N.O. (Form A) & N.C. (Form B)
- 3 lead designs
- Five different sensitivity ranges
- Suitable for low power
- No external power required
- Tape & Reel packaging (IEC 60286-3)
- Suitable for automatic pick and place
- RoHS compliant

APPLICATIONS

- Contactless sensors
- Low power miniature devices
- Position sensor
- Limit switch
- Space limited
- Hand-held devices
- Cell phones
- Notebook computers
- Medical devices (i.e. insulin pumps, hearing aids, pace makers)

MARKETS

- Automotive, Aviation, Marine,
- Telecommunications, Security
- Test & Measurement, Household
- Medical, Computer



- Ultra-miniature size conquers space limitations allowing high density board population
- Available in SPST-NO (Form A) and SPST-NC (Form B)
- 3 surface mount lead design options
- Available in multiple sensitivity ranges (AT)
- Suitable for low power miniature devices
- No external power required for operation

The MK24 Series achieve a minimum life expectancy of 50 million operations at 5V, 5mA, 100Hz while measuring only 5mm x 1.8mm x 2.2mm. Though ultra miniature, the MK24 is constructed of a rugged overmolded package containing the hermetically sealed 4mm KSK-1A04 reed switch. These sensors are used as a control switch or non-contact magnetic proximity sensor for counting, position, limit and liquid level detection applications. In addition to their high performance and ultra miniature size, the MK24 require no external power to operate making them especially suitable in applications with low power and space limitation requirements such as in portable medical and electronic devices.

Choose from 3 surface mount lead designs in a SPST-NO (Form A) version: lead design 1 (straight cut axial lead), lead design 2 (Gull Wing) and lead design 3 (J Lead). The MK24 is also available in lead design 2 or 3 in a SPST-NC (Form B) version. The normally open (Form A) version sensors come in 5 contact sensitivity ranges (A, B, C, D, & E), while the normally closed (Form B) version is available in a B sensitivity only, (refer to sensitivity specification on page 2 & 3).

The MK24 surface mount sensors are all provided in Tape and Reel packaging suitable for pick and place automation. Consider the MK24 Series Reed Sensors for your next green mechatronic design.

Part Number Example

MK24 - B - 2

B is the magnetic sensitivity class

2 is the lead design

MK24 SERIES (FORM A) CONTACT DATA BY SENSITIVITY CLASS

All Data at 20 ° C	Contact Form →	1 Form A (Normally Open)					Unit
		Sensitivity Class					
Contact Ratings	Conditions	A	B	C	D	E	
Rated Power (max.)	Any DC combination of V & A not to exceed their individual max.'s	1*	3*	3*	3*	3*	W
Switching Voltage (max.)	DC or peak AC	30	30	30	30	30	V
Switching Current (max.)	DC or peak AC	0.1	0.3	0.3	0.3	0.3	A
Carry Current (max.)	DC or peak AC	0.3	0.5	0.5	0.5	0.5	A
Static Contact Resistance (max.)	Measured with 40% overdrive Start value	250	200	200	200	200	mΩ
Insulation Resistance (min.)	RH <45%, 100V test voltage	10 ⁹	10 ⁹	10 ⁹	10 ⁹	10 ⁹	Ω
Breakdown Voltage (min.)	According to IEC 255-5	60	100	100	100	100	VDC
Operate Time incl. Bounce (max.)	Measured with 40% overdrive	0.25	0.2	0.2	0.2	0.2	ms
Release Time (max.)	Measured with no coil excitation	0.15	0.15	0.15	0.15	0.15	ms
Capacitance (typ.)	At 10kHz across open switch	0.1	0.1	0.1	0.1	0.1	pF
Contact Operation							
Pull-In (Test coil MS-150)	Lead Option 1 & 2	22-55	37-71	50-86	61-100	71-114	AT
Pull-In (Standard Helmholtz Coil)	Lead Option 1 & 2	1.8-4.5	3.0-5.8	4.1-7.0	5.0-8.2	5.9-9.2	mT
Pull-In (Test coil MS-150)	Lead Option 3	23-50	33-67	40-83	46-98	50-112	AT
Pull-In (Standard Helmholtz Coil)	Lead Option 3	2.1-5.3	3.3-7.0	4.3-8.6	5.1-10.0	5.8-11.4	mT
Environmental Data							
Shock Resistance (max.)	½ sine wave duration 11ms	30	30	30	30	30	g
Vibration Resistance (max.)	From 10-1200 Hz	20	20	20	20	20	g
Operating Temperature	10°C/ minute max. allowable	-40 up to + 130					°C
Storage Temperature	10°C/ minute max. allowable	-50 up to + 130					°C
Soldering Temperature (max.)	See recommended reflow profile	260	260	260	260	260	°C

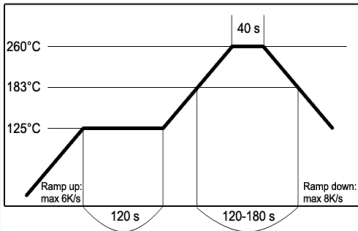
* The indicated electrical data are maximum values and can vary downwards when using a more sensitive switch.

DIMENSIONS FORM A VERSIONS

Lead Option-1 (Axial)	Lead Option-2 (Gull Wing)	Lead Option-3 (J Lead)

Recommended Reflow Profile

Reflow soldering conditions according to JEDEC norm J-STD-020C



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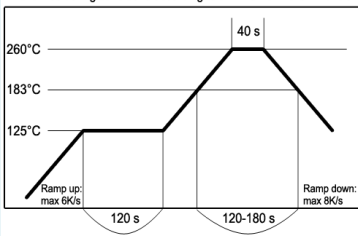
Part Number Example

MK24 - B - 2 - OE

B is the magnetic sensitivity class
2 is the lead design
OE is the normally closed contact version (Form B)

Recommended Reflow Profile

Reflow soldering conditions according to JEDEC norm J-STD-020C



Request Samples Today!

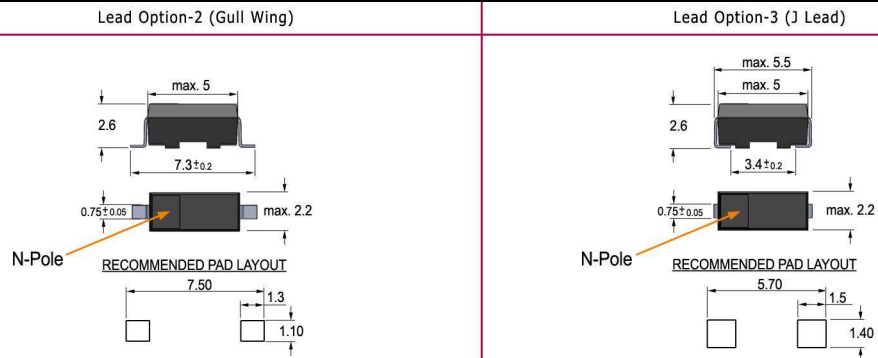
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MK24 SERIES (FORM B) CONTACT DATA BY SENSITIVITY CLASS

All Data at 20° C	Contact Form →	1 Form B (Normally Closed)				Unit
		Sensitivity Class				
Contact Ratings	Conditions	B				
Rated Power (max.)	Any DC combination of V & A not to exceed their individual max.'s	3*				W
Switching Voltage (max.)	DC or peak AC	30				V
Switching Current (max.)	DC or peak AC	0.3				A
Carry Current (max.)	DC or peak AC	0.5				A
Static Contact Resistance (max.)	Measured with 40% overdrive Start value	200				mΩ
Insulation Resistance (min.)	RH <45%, 100V test voltage	10 ⁹				Ω
Breakdown Voltage (min.)	According to IEC 255-5	100				VDC
Operate Time incl. Bounce (max.)	Measured with 40% overdrive	0.2				ms
Release Time (max.)	Measured with no coil excitation	0.15				ms
Capacitance (typ.)	At 10kHz across open switch	0.1				pF
Contact Operation						
Pull-In (Test coil MS-150)	Lead Option 2 & 3	15-30				AT
Environmental Data						
Shock Resistance (max.)	½ sine wave duration 11ms	30				g
Vibration Resistance (max.)	From 10-1200 Hz	20				g
Operating Temperature	10°C/ minute max. allowable	-40 up to + 130				°C
Storage Temperature	10°C/ minute max. allowable	-50 up to + 130				°C
Soldering Temperature (max.)	See recommended reflow profile	260				°C

* The indicated electrical data are maximum values and can vary downwards when using a more sensitive switch.

DIMENSIONS FORM B VERSIONS



NOTE: Marking on top corresponds to North Pole of the internal magnet.