

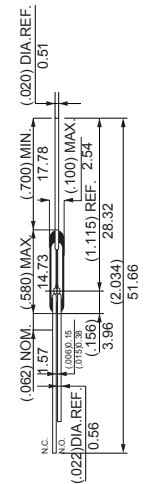
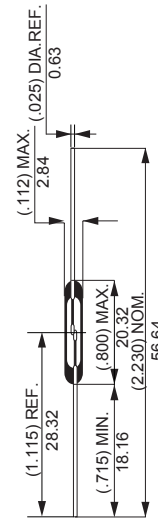
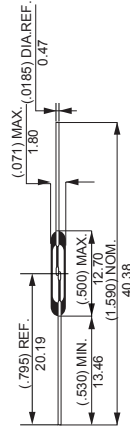
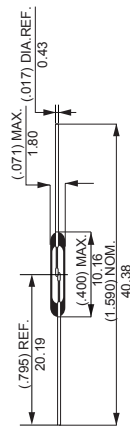
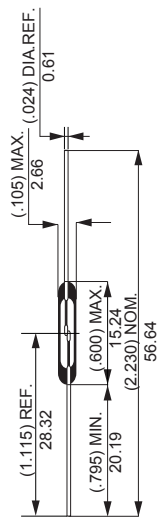
REED SWITCHES

HCH Reed Switches

Specifications



File No.:E75887



HCH25

HCH211

HCH219

HCH229

HCH551

Electrical Ratings

Contact Form		A	A	A	A	C
Contact Rating	Watt-max.	20	10	10	50	5
Voltage [V]	Switching Vdc-max.	200	200	200	265Vac rms (250Vdc)	175
	Breakdown Vdc-min.	250	250	250	750	200
Current [A]	Switching A-max.	1.0	0.5	0.5	1.0	0.25
	Carry A-max.	1.2	1.0	0.8	2.5	1.5
Resistance [Ω]	Contact, Initial Ω-max.	0.100	0.120	0.100	0.100	0.100
	Insulation Ω-min.	10 ¹⁰	10 ¹²	10 ¹²	10 ¹⁰	10 ⁶
Capacitance Contact	pF-typ	0.4	0.2	0.3	0.2	1.0
Temperature [°C]	Operating °C	-40 ~ +125	-40 ~ +125	-40 ~ +125	-20 ~ +125	-40 ~ +125
	Storage °C	-65 ~ +125	-65 ~ +125	-65 ~ +125	-65 ~ +125	-65 ~ +125

OPERATING CHARACTERISTICS

Operating Time	ms-max.	0.7	0.5	0.6	0.75	0.7
Release Time	ms-max.	0.2	0.1	0.2	0.3	1.0
Shock	11ms 1/2 Sine Wave G-max.	100	100	100	100	50
Vibration	50-2000 Hertz G-max.	30	30	30	30	30
Resonant Frequency	Hz-typ	6250	8500	9500	2100	11000

MAGNETIC CHARACTERISTICS

Pull-in Range	Ampere Turns	17-38	10-25	10-25	22-43	15-30
		Miniature CD	Sub-Miniature	Sub-Miniature	Miniature HV	Miniature Changeover

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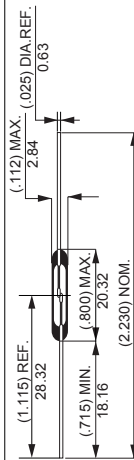
REED SWITCHES

HCH Reed Switches

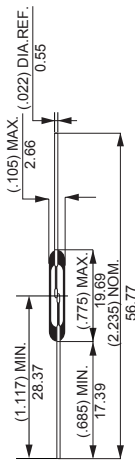
Specifications



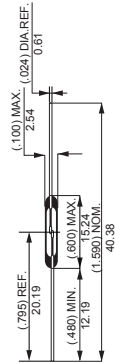
File No.:E75887



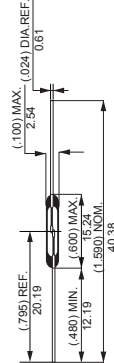
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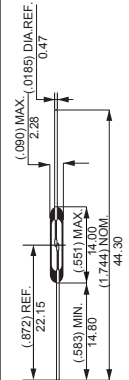
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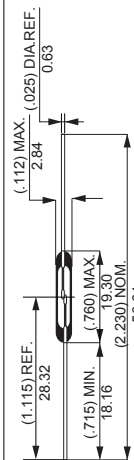
HCH2212



HCH9215



HCH9216



HCH50WD

Electrical Ratings

Contact Form		A	A	A	A	A	A	
Contact Rating		Watt-max.	50	10	20	10	10	50
Voltage [V]	Switching	Vdc-max.	200	200	200	200	200	200
	Breakdown	Vdc-min.	300	2000	250	250	250	300(400)
Current [A]	Switching	A-max.	1.5	0.5	1.0	0.5	0.5	1.0,0.7
	Carry	A-max.	3.0	1.3	1.0	1.2	1.2	3.0,2.1
Resistance [Ω]	Contact, Initial	Ω-max.	0.100	0.100	0.100	0.100	0.100	0.100
	Insulation	Ω-min.	10 ¹⁰	10 ¹²	10 ¹²	10 ¹⁰	10 ¹⁰	10 ¹⁰
Capacitance Contact		pF-typ	0.2	0.2	0.4	0.2	0.2	0.2
Temperature [°C]	Operating	°C	-40 ~ +125	-75 ~ +125	-40 ~ +125	-40 ~ +125	-40 ~ +125	-40 ~ +125
	Storage	°C	-65 ~ +125	-75 ~ +125	-65 ~ +125	-65 ~ +125	-65 ~ +125	-65 ~ +125

OPERATING CHARACTERISTICS

Operating Time	ms-max.	0.75	0.75	0.6	0.6	0.6	
Release Time	ms-max.	0.3	0.3	0.2	0.2	0.2	
Shock	11ms 1/2 Sine Wave	G-max.	100	100	100	100	100
Vibration	50-2000 Hertz	G-max.	30	30	30	30	30
Resonant Frequency	Hz-typ		2100	3200	6250	3900	5200

MAGNETIC CHARACTERISTICS

Pull-in Range	Ampere Turns	22-43	17-38	17-38	12-38	10-30	
		Miniature Power	Miniature HV	Sub-Miniature	Sub-Miniature	Sub-Miniature	

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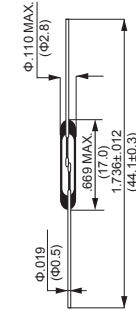
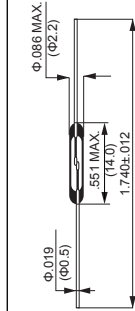
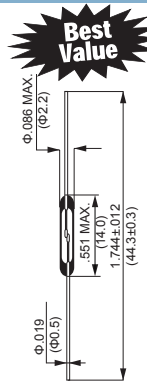
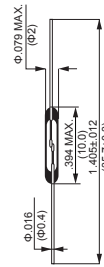
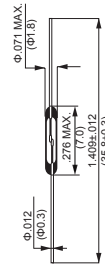
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REED SWITCHES

Specifications



File No.:E75887



		ORD213	ORD211	ORD324	ORD228	ORD9215	
Electrical	Contact	1A	1A	1A	1A	1A	
Characteristics	Pull-in Available in ± 5 AT ranges	10 ~ 40	10 ~ 40	10 ~ 50	10 ~ 50	10 ~ 50	
	Drop-out	[AT] min.	5	5	5	4	
	Contact resistance(Initial)	[m Ω] max.	200	100	100	100	150
	Breakdown voltage	[VDC] min.	150	150	200	200	200
	Insulation resistance	[Ω] min.	10 ⁹	10 ⁹	10 ¹⁰	10 ⁹	10 ⁹
	Electrostatic capacitance	[pF] max.	0.4	0.2	0.3	0.3	0.3
	Contact rating	[VA,W]	1.0	1.0	10	10	10
	Maximum switching voltage	[V]	AC24 / DC24	AC24 / DC24	AC140 / DC200	AC110 / DC100	AC110 / DC100
	Maximum switching current	[A]	DC 0.1	DC 0.1	DC 0.5	DC 0.4	0.3
	Maximum carry current	[A]	0.3	0.3	1.0	1.0	1.0
Operating Characteristics	Operating time	[ms] max.	0.3	0.3	0.3	0.4	
	Bounce time	[ms] max.	0.3	0.3	0.3	0.4	
	Release time	[ms] max.	0.05	0.05	0.05	0.05	
	Resonant frequency	[Hz]	1100 \pm 500	7500 \pm 500	5000 \pm 400	5300 \pm 300	3700 \pm 300
	Maximum operating frequency	[Hz]	500	500	500	500	500
Standard coil	Coil resistance	[Ω]	600	600	450	450	450
	No. of turns	[T]	5000	5000	5000	5000	5000
	Dimensions	[mm]	$\phi 3.3 \times 10$	$\phi 3.3 \times 10$	$\phi 3.7 \times 15$	$\phi 3.7 \times 15$	$\phi 3.7 \times 15$
	Type No.	8	8	6	6	6	
Features (Contact material)		Ultra-miniature (RH)	Ultra-miniature (RH)	General purpose miniature(RH)	General purpose miniature(RH)	General purpose miniature(RH)	

*Magnets also available, Available Cut and Bent as Well as on Reed.

Notes:

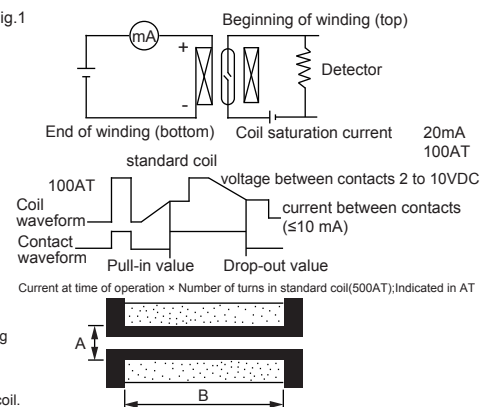
- 1.Pull-in & drop-out were measured by using OKI standard coil.*This value of drop-out is prescribed when pull-in is over 20AT. When pull-in is less than 20AT, drop-out are 5 MIN & RLS/OP >0.7. Tolerance at measurement is ± 2 AT. (Fig.1)
- 2.Measurements are made by the four-terminal voltage reduction method where the 100AT excitation is given to the switch using the OKI standard coil to close the contacts, and 10mA current is applied.
- 3.This value varies depending on the pull-in value (contact gap). In this measurement, the pull-in value is about 20AT.(MIL-STD-202D METHOD 301)
- 4.Measurement is made by using a DC 100V super megger.(MIL-STD-202D METHOD 302)
- 5.The value shows the time required for the contacts to cause the first contact bounce after applying the voltage to the OKI standard test coil. The times is shown at top in Fig.2

- 6.Bouncing is caused when the contact close. Bounce time means the time when opening and closing of the contacts are being repeated before the contacts are completely closed. Shown by T bounce.
- 7.Release time means the time from the moment the voltage applied to the test coil as removed to the moment the contacts open. Shown by Tris.
- 8.Resonant frequency is a vibrating frequency inherent to the reed switch. Avoid application of vibration at this frequency to the switch, otherwise it will cause misoperation.
- 9.The reed switch can be operated with a frequency higher than the maximum operating frequency. However, operation with such a frequency will often cause an endless chattering at the time of ON operation. It is recommended for the designer to take the maximum operating frequency into consideration when designing systems and circuits.
- 10.Dimensions of standard coil.

A:Inner diameter of standard coil.

B:Length of standard coil.

Fig.1



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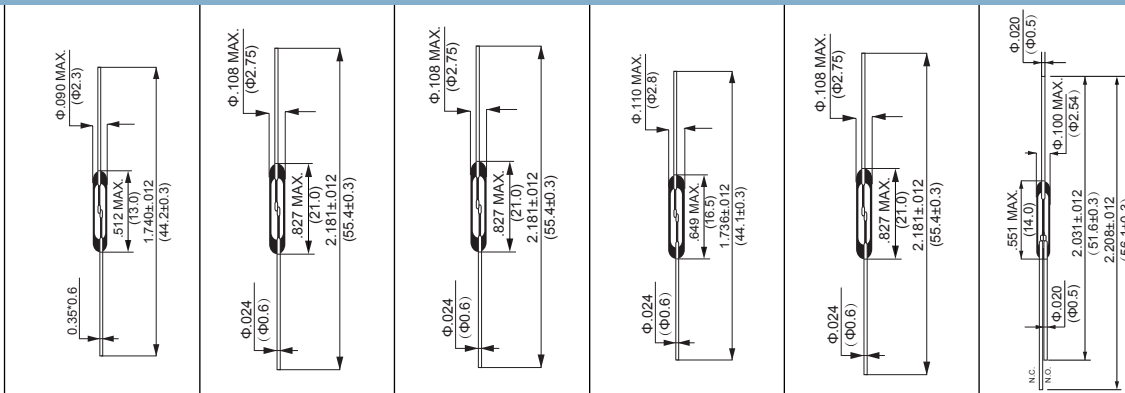


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REED SWITCHES



	ORD221	ORD229	ORD2210	ORD2211	ORD2210V	ORT551
	1A(offset)	1A	1A	1A	1A	1C
	1 ~ 40	15 ~ 40	15 ~ 60	15 ~ 60	20 ~ 60	10 ~ 30
	5	6	7	8	7	5
	100	100	100	100	100	100
	200	600	250	200	1000	200
	10 ⁹	10 ¹⁰	10 ¹⁰	10 ⁹	10 ¹⁰	10 ⁹
	0.3	0.5	0.5	0.3	0.5	1.5
	10	50	AC70(VA) / DC50(W)	50	100	3
	AC100 / DC100	AC300 / DC350	AC150 / DC200	AC100 / DC100	AC300 / DC350	AC30 / DC30
	DC 0.3	DC 0.5	AC0.7 / DC1.0	0.5 In rush 3A	DC 1.0 max.	DC 0.2
	1.0	2.5	2.5	2.5	2.5 max.	0.5
	0.3	0.6	0.5	0.6	0.5	1.0
	0.5	0.5	0.5	0.4	0.5	(NC)1.5 / (NO)1.0
	0.5	0.05	0.05	0.05	0.05	0.5
	2750 ± 250	2500 ± 250	2500 ± 250	4600 ± 500	2500 ± 250	6000 ± 4000
	500	500	500	500	500	200
	450	500	500	450	450	550
	5000	5000	5000	5000	5000	5000
	Φ3.7 × 15	Φ4.6 × 21	Φ4.6 × 21	Φ3.7 × 15	Φ3.7 × 15	Φ4.6 × 10
	6	3	3	6	6	10
	Miniature offset (RH)	High breakdown voltage (RH)	High power (RH)	Lamp load 3.4W Low sound (RH)	Vacuum (RH)	Ultra-miniature transfer (RH)

11. If a shock of more than 30G is applied to a reed switch, the pull-in value of the switch will be often caused to change from the standard specification. Therefore, it is recommended not to use the reed switch which has been given such a shock.

12. If a vibration of more than 1 kHz is applied to a reed switch, even a very small acceleration to it will easily cause the switch to misoperate to close due to its resonant frequency.

13. In practice the reed switch can operate beyond the specified range. In case of magnet driving, however, some magnets show decrease of magnetic flux even at the lowest temperature of the range depending on their temperature characteristics. Therefore, it is recommended to consider the range as a general guide line.

14. The actual tensile strength is more than 5 kg (breakdown). However, considering the lead not to get out of position, the value for the static load is shown here.

Environmental Characteristics Table 2

	Characteristics(Common to All Types)	Test Conditions	Notes
Shock	Shall not misoperate with shock of 30G(11ms) applied	MIL-STD-202E METHOD 213B	13
Vibration	Shall not misoperate with max. 20G(10-55Hz)	MIL-STD-202E METHOD 210A	14
Temperature range	Shall be operational in the range of -40~125°C	MIL-STD-202E METHOD 107D	15
Lead tensile strength	Shall withstand against 2Kg static load	MIL-STD-202E METHOD 211A	16

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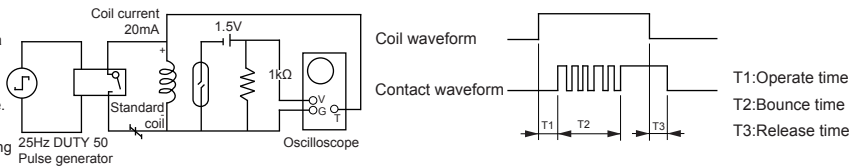


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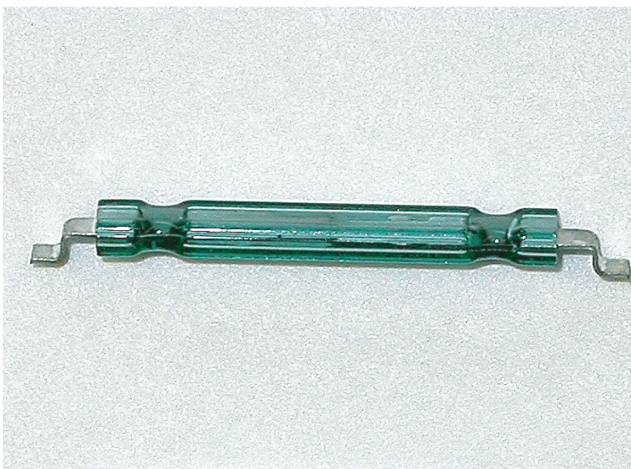
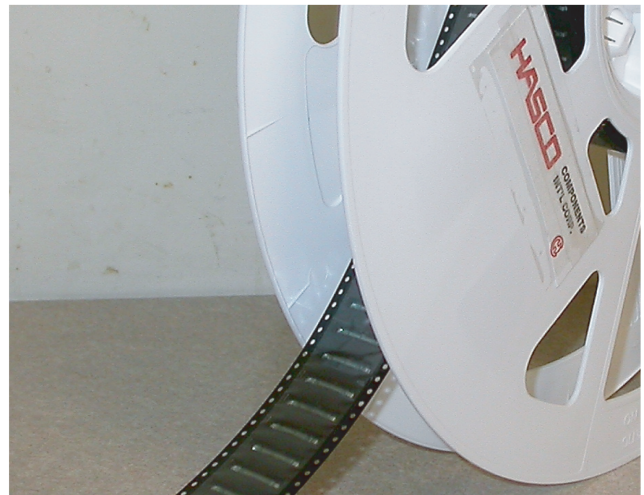
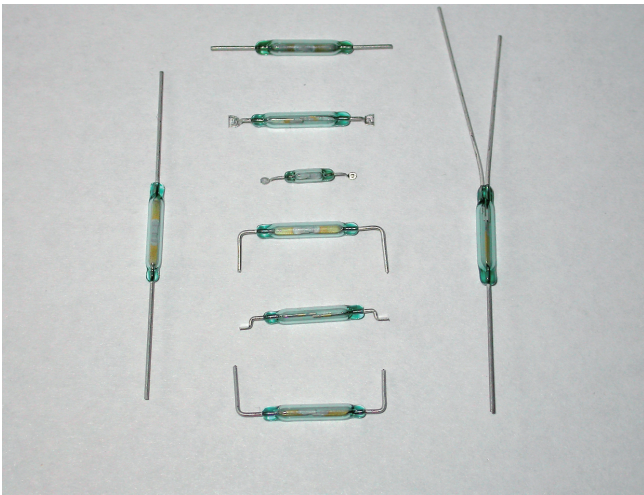
Fig.2



REED SWITCHES

Our reed switches are available in multiple styles and housing types in either SMT or through hole designs. We can custom bend and produce any reed configuration either bare or in a housing. Simply send us your specs for us to quote.

Please note: HASCO can produce and/or stuff any PC board with a reed switch or relay in house at our state of the art production facility.



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