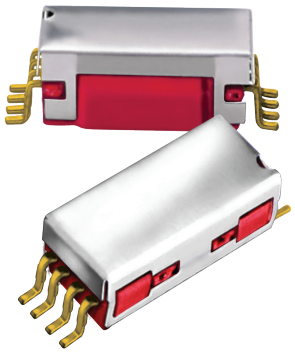
1 Description

Ideally suited to the needs of Automated Test Equipment, Instrumentation and Telecommunications requirements, Coto's 9814/H & 9852 Series is a miniature Surface Mount Reed Relay that combines small size with exceptional RF performance. The 9814/H extends life at ATE loads 3X or more utilizing Coto's proprietary switch technology. The external Magnetic Shield reduces interaction between parts in high density boards. The 9852 adds Form C capability. Small size plus added features allow for high density packing, and make these relays ideal for designs such as high speed, high pin count VLSI testers where high speed, small size and high performance are all needed.

Device Packages



2 Features

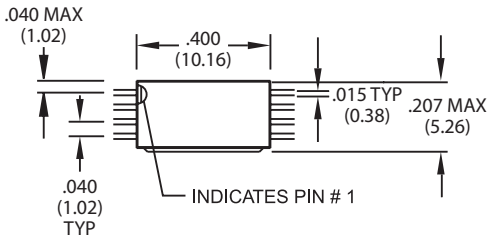
- High Power - 10 Watt version available on model 9814H
- Available in Gull wing and "J" bend lead configurations
- Coaxial shield for 50 Ω
- High insulation resistance - 10^{12} Ω (Form A)
- Gold plated terminals
- External Magnetic Shield
- Tape and Reel packaging available
- High reliability, hermetically sealed contacts for long life
- High speed switching compared to electromechanical relays
- Molded thermoset body on integral lead frame design
- RoHS Compliant

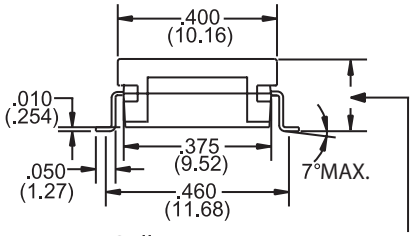
3 Applications

- Automated Test Equipment (ATE)
- Instrumentation
- Telecommunications

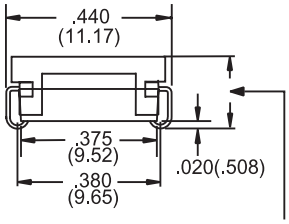
4 Dimensions

In Inches (Millimeters)

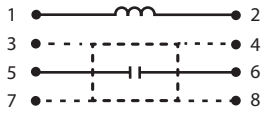




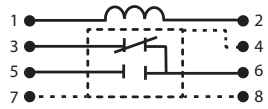
Gull Wing .180 (4.57) [Model 9814/H]
.210 (5.33) [Model 9852]



J-Lead .200 (5.08) [Model 9814/H]
.220 (5.58) [Model 9852]

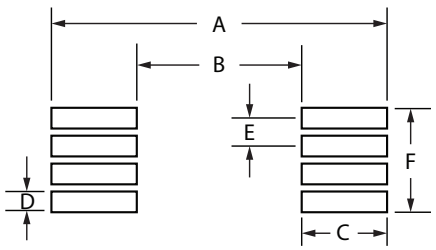


Schematic (9814/H)



Schematic (9852)

RECOMMENDED PAD LAYOUT



Leads	J Bend	Gull Wing
A	.490 (12.4)	.560 (14.2)
B	.240 (6.1)	.400 (10.2)
C	.125 (3.2)	.080 (2.0)
D	.030 (0.8)	
E	.040 (1.0)	
F	.150 (3.8)	

5 Ordering Information

Part Number 98XX-XX-XXH

Model Number
9814 9852

Coil Voltage
03 = 3.3 volts
05 = 5 volts

Version
H = High Power
(Available only on Model 9814)

Lead Style
00 = Gull Wing
20 = J-Lead

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6 Parameters - Model Number 9814/H & 9852 Series

Parameters	Test Conditions	Units	9814	9814H[2]	9852
Relay Configuration			**Traditional**	**High Power**	**1 Form C**
			1 Form A, 50 Ω Coaxial		**50 Ω Coaxial**
Coil Specs.					
Nom. Coil Voltage		VDC	3.3	5.0	3.3 / 5.0
Max. Coil Voltage		VDC	4.0	6.0	4.0 / 6.0
Coil Resistance	+/- 10%, 25°C	Ω	70	150	70 / 110
Operate Voltage	Must Operate By	VDC - Max.	2.5	3.8	2.50 / 3.8
Release Voltage	Must Release By	VDC - Min.	0.4	0.4	0.4 / 0.4
Contact Ratings					
Switching Voltage	Max DC/Peak AC Resist.	Volts	100	170	30
Switching Current	Max DC/Peak AC Resist.	Amps	0.25	0.25	0.1
Carry Current	Max DC/Peak AC Resist.	Amps	0.5	1.0	0.2
Contact Rating	Max DC/Peak AC Resist.	Watts	3	10	3
Life Expectancy - Typical[1]	Signal Level 1.0V, 10mA	x 10^6 Ops.	1000	1000	100 N/C | 200 N/O
Static Contact Resistance (Max. Init.)	50mV, 10mA	Ω	0.125	0.125	0.200
Dynamic Contact Resistance (Max. Init.)	0.5V, 50mA at 100Hz, 1.5msec.	Ω	0.150	0.150	0.200
Relay Specifications					
Insulation Resistance (Min.)	Between all Isolated Pins at 100V, 25°C, 40%RH	Ω	10^{12}		10^9
Capacitance - Typical Across Open Contacts	No Shield Shield Floating Shield Guarding	pF	- - 0.2		- - 1.0
Capacitance - Typical Open Contact to Coil	No Shield Shield Floating Shield Guarding	pF	- - 0.5		- - 1.0
Capacitance - Typical Closed Contact to Coil	Shield Guarding	pF	0.5		0.5
Capacitance - Typical Contact to Shield	Contacts Open, Shield Floating	pF	-		-
Dielectric Strength (Min.)	Between Contacts Contacts to Shield Contacts / Shield to Coil	VDC/peak AC	200 1500 1500		200 1000 1000
Operate Time - Including Bounce - Max.	At Nominal Coil Voltage, 30Hz, Square Wave	msec.	0.25		1.0
Release Time - Typical		msec.	0.05		1.0

General Notes:

1. Consult factory for life expectancy at other switching loads. Resistance > 2.0 ohms defines end of life.
2. Part number 9814-XX-XXH is the high power version of our traditional 9814 series.

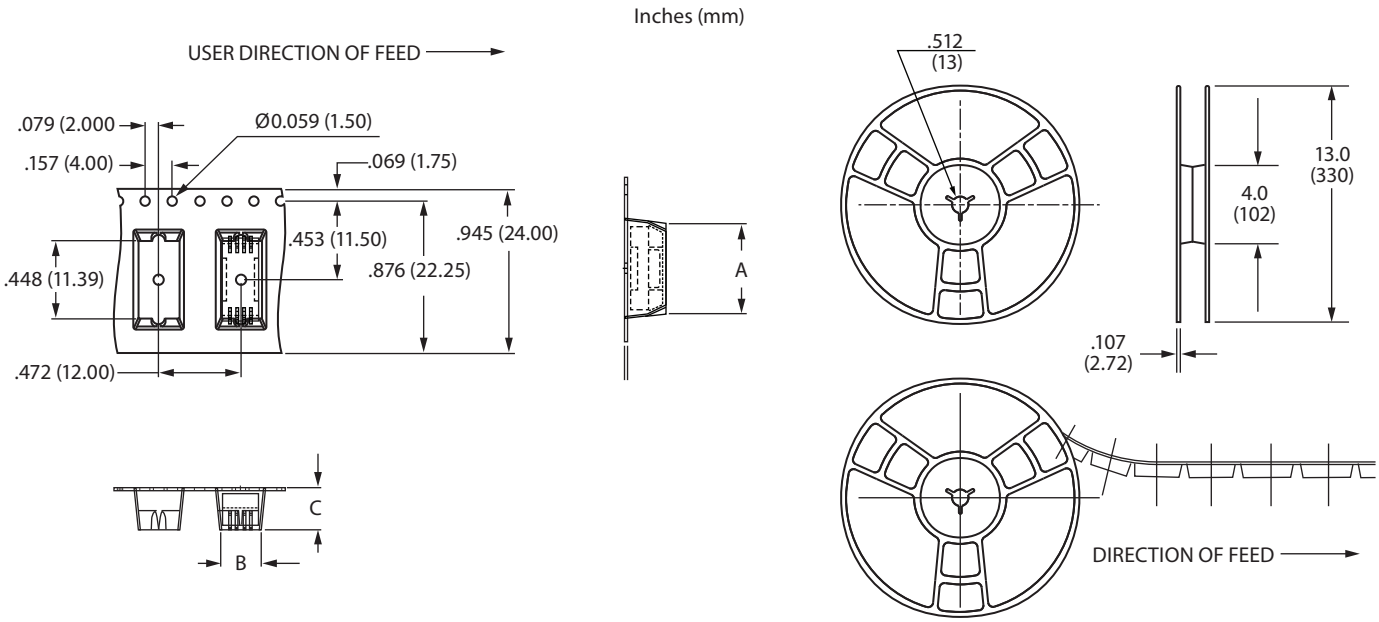
Environmental Ratings:

Storage Temp:-35°C to + 100°C; Operating Temp: -20°C to +85°C
Vibration: 20 G's to 2000 Hz; Shock: 50 G's
All electrical parameters measured at 25°C unless otherwise specified.

7 Package Information

Tape & Reel Dimensions

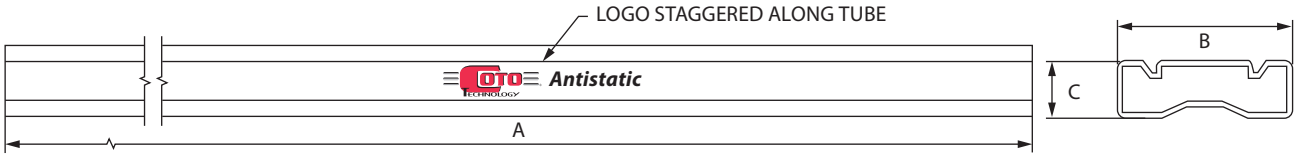
- 1000 relays per reel when ordered as 9814-XX-XXTR, 9814-XX-XXHTR or 9852-XX-XXTR



MODEL	9814/H		9852	
Leads	Gull Wing	J Bend	Gull Wing	J Bend
A	0.52 (13.2)	0.44 (11.2)	0.52 (13.2)	0.44 (11.2)
B	0.19 (4.83)	0.19 (4.83)	0.20 (5.08)	0.20 (5.08)
C	0.19 (4.83)	0.19 (4.83)	0.23 (5.84)	0.23 (5.84)

Plastic Tube Dimensions

- 98 relays per tube when ordered as 9814-XX-XX and 9814-XX-XXH
- 97 relays per tube when ordered as 9852-XX-XX



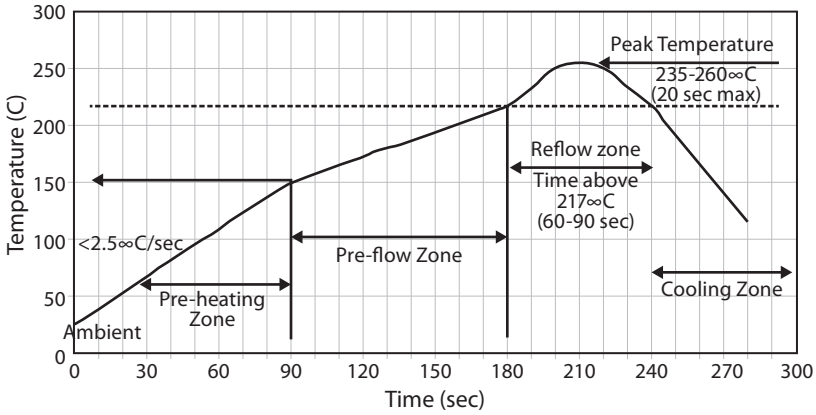
MODEL	9814/H	9852
A	20.2 (51.3)	20.2 (51.3)
B	1.022 (26)	1.022 (26)
C	0.306 (7.8)	0.322 (8.2)

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8 Relay Processing Notes

8.1 Soldering

Coto Technology uses a higher temperature solder for all internal connections. We recommend that the max relay temperature during the solder reflow process does not exceed 260°C for 10 seconds maximum. Temperature and time more than the recommended levels may result in damage to the relay. Recommended solder profile as below.



8.2 Cleaning

9814/H & 9852 are designed and manufactured to provide an adequate seal from external conditions. However, caution must be taken during the cleaning process not to expose the relays to conditions that will allow moisture to permeate into the package. Caution should be taken with dwell time between reflow and cleaning, high pressure spraying, and time in cleaning solvent/aqueous solutions, as these cleaning process parameters can contribute to moisture permeation. Board level bake out may be required after wash to remove moisture that has been introduced during cleaning operations.

8.3 Relay Storage

Relay parametric specifications are specified at 25°C and 40% RH. Reduced relay performance may result if storage or use environments significantly exceed these conditions. If high insulation resistance is required, Coto Technology recommends that relay storage, processing, and use environments are adequate to achieve the desired results. Relays should be stored in similar environmental conditions as other high-reliability active and passive electronic components. Proper storage of relays is also important to maintain solderability over an extended period of time.

8.4 Handling

Relays should be handled with care. Dropping or mishandling relays may result in damage that can contribute to a direct failure or, even worse, a latent field failure. If relays are dropped, Coto Technology recommends that they should be discarded.

Coto Technology does not recommend use of ultrasonic activated equipment with relays. The use of ultrasonic equipment may change the characteristics of the relay and can contribute to failure.

For more **technical and application information**, please refer to the following QR code:

For **Recommendations and Best Practices for Form C Relays** refer to the following QR code:

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