

# AZ853

## MICROMINIATURE POLARIZED RELAY

### FEATURES

- Conforms to IEC60950/UL1950/EN60950 spacing and high breakdown voltage  
Clearance: 1.0 mm (between coil and contacts)  
Creepage: 1.6 mm (between coil and contacts)  
Basic Insulation: 150 V Working Voltage, Pollution Degree 2
- Monostable and bistable (latching) versions available
- High dielectric and surge voltage:  
2.5 KV surge (per Bellcore TA-NWT-001089)  
1.5 KV surge (per FCC Part 68)  
1,000 Vrms, open contacts
- Low power consumption: 79 mW pickup
- Stable contact resistance for low level signal switching
- Epoxy sealed for automatic wave soldering and cleaning
- UL file E43203; CSA file 212940
- All plastics meet UL94 V-0, 30 min. oxygen index



### CONTACTS

<b>Arrangement</b>	DPDT (2 Form C) Bifurcated crossbar contacts
<b>Ratings</b>	Resistive load: Max. switched power: 60 W or 62.5 VA Max. switched current: 2.0 A Max. switched voltage: 220 VDC or 250 VAC
<b>Rated Load UL/CSA</b>	0.5 A at 125 VAC 2.0 A at 30 VDC 0.3 A at 110 VDC
<b>Material</b>	Silver alloy; gold clad
<b>Resistance</b>	< 75 milliohms initially at 6 V, 1 A

### COIL (Polarized)

<b>Power At Pickup Voltage (typical)</b>	79 mW (3–12 VDC) 130 mW (24 VDC)
<b>Max. Continuous Dissipation</b>	1.0 W at 20°C (68°F) 0.78 W at 40°C (104°F)
<b>Temperature Rise</b>	At nominal coil voltage 18°C (32°F) (3–12 VDC) 25°C (45°F) (24 VDC)
<b>Temperature</b>	Max. 115°C (239°F)

### NOTES

1. All values at 20°C (68°F).
2. Relay may pull in with less than "Must Operate" value.
3. Relay has fixed coil polarity.
4. Specifications subject to change without notice.

### GENERAL DATA

<b>Life Expectancy</b> <b>Mechanical</b> <b>Electrical</b>	Minimum operations 1 x 10 <sup>8</sup> at 3Hz 1 x 10 <sup>5</sup> at 0.5 A, 125 VAC, Res. 2 x 10 <sup>5</sup> at 1.0 A, 30 VDC, Res.
<b>Operate Time (typical)</b>	3 ms at nominal coil voltage
<b>Release Time (typical)</b>	3 ms at nominal coil voltage (with no coil suppression)
<b>Bounce (typical)</b>	At 10 mA contact current 1 ms at operate or release
<b>Capacitance</b>	< 1 pF at 10 KHz—open contacts < 1 pF at 10 KHz—adjacent contact sets
<b>Dielectric Strength (at sea level)</b>	See table
<b>Dropout</b>	Greater than 10% of nominal coil voltage
<b>Insulation Resistance</b>	10 <sup>9</sup> ohms min. at 25°C, 500 VDC, 50% RH
<b>Ambient Temperature Operating Storage</b>	At nominal coil voltage -40°C (-40°F) to 85°C (185°F) -40°C (-40°F) to 115°C (239°F)
<b>Vibration</b>	Operational, 20 g, 10–55 Hz Non-destructive, 30 g, 10–55 Hz
<b>Shock</b>	Operational, 50 g min., 11 ms Non-destructive, 100 g min., 11 ms
<b>Max. Solder Temp. Temp./Time</b>	350°C (662°F) for 3 seconds 260°C (500°F) for 10 seconds
<b>Max. Solvent Temp.</b>	80°C (176°F)
<b>Max. Immersion Time</b>	30 seconds
<b>Weight</b>	1.0 grams
<b>Enclosure</b>	P.B.T. polyester
<b>Terminals</b>	Tinned copper alloy, P.C.



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## RELAY ORDERING DATA

NON-LATCHING VERSION				ORDER NUMBER		
Nominal Coil VDC	Max. Continuous VDC	Coil Resistance $\pm 10\%$	Must Operate VDC	THT	SMT*	SMTss*
1.5	2.25	16.1	1.13	AZ853-1.5	AZ853S-1.5	AZ853S1-1.5
3	4.5	64.3	2.25	AZ853-3	AZ853S-3	AZ853S1-3
4.5	6.75	145	3.38	AZ853-4.5	AZ853S-4.5	AZ853S1-4.5
6	9	257	4.5	AZ853-6	AZ853S-6	AZ853S1-6
9	13.5	579	6.75	AZ853-9	AZ853S-9	AZ853S1-9
12	18	1028	9.00	AZ853-12	AZ853S-12	AZ853S1-12
24	36	2504	18.00	AZ853-24	AZ853S-24	AZ853S1-24

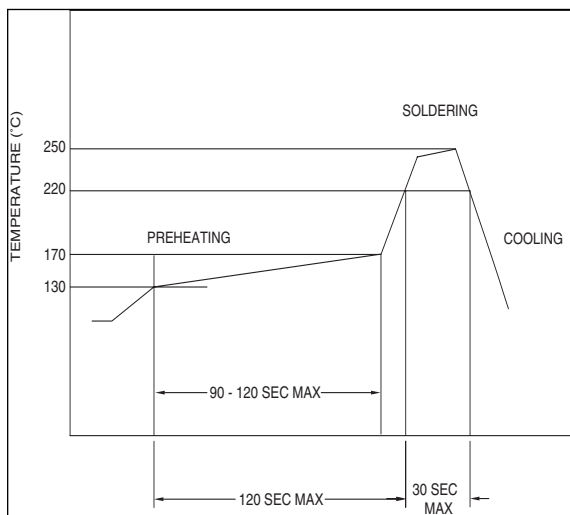
LATCHING VERSION				ORDER NUMBER		
Nominal Coil VDC	Max. Continuous VDC	Coil Resistance $\pm 10\%$	Must Operate VDC	THT	SMT*	SMTss*
1.5	2.25	22.5	1.13	AZ853P-1.5	AZ853PS-1.5	AZ853PS1-1.5
3	4.5	90	2.25	AZ853P-3	AZ853PS-3	AZ853PS1-3
4.5	6.75	203	3.38	AZ853P-4.5	AZ853PS-4.5	AZ853PS1-4.5
6	9	360	4.50	AZ853P-6	AZ853PS-6	AZ853PS1-6
9	13.5	810	6.75	AZ853P-9	AZ853PS-9	AZ853PS1-9
12	18	1440	9.00	AZ853P-12	AZ853PS-12	AZ853PS1-12
24	36	4800	18.00	AZ853P-24	AZ853PS-24	AZ853PS1-24

\*Tape and reel available (1K pcs/reel minimum)

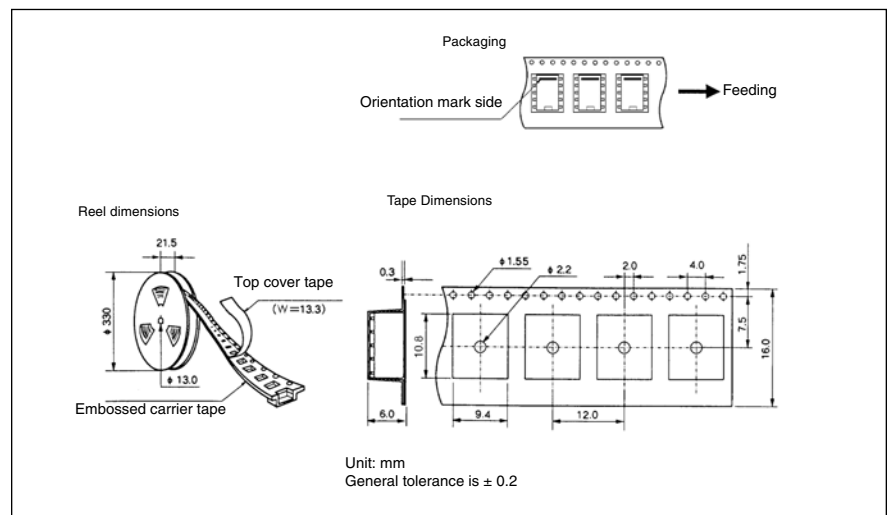
	INITIAL DIELECTRIC STRENGTH (minimum)		SURGE	
	VRMS, 1 min.	Peak (V)	Rise Time ( $\mu$ S)	Decay Time* (9 $\mu$ S) (1/2 peak)
Between open contacts	1,000	1,500	10	160
Between contact sets	1,000	1,500	2	160
Between coil and contacts	1,500	2,500	2	10

\* Decay time measured from beginning of surge.

## Temperature Profile



## Packaging Specifications



Unit: mm  
General tolerance is  $\pm 0.2$



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## Mechanical Data

<p><b>THT</b></p> <p>Top view dimensions: .42 [10.6], .22 [5.7].  Side view dimensions: .35 [9.0], .020 [0.5], .14 [3.54], .016 [0.4], .09 [2.2], .09 [2.2], .126 [3.2], .06 [1.5].  End view dimensions: .126 [3.2], .008 [0.2].</p>	<p><b>PC Board Layout Viewed toward terminals</b></p> <p>Dimensions: .3 [7.6], .125 [3.2], .09 [2.2], .125 [3.2].  Hole specification: 8-Ø.03 [Ø0.85].</p>	<p><b>Wiring Diagram Viewed toward terminals</b></p> <p>Terminal connections: (+) 1, 2, 3, 4; (-) 8, 7, 6, 5.</p>
<p><b>SMT</b></p> <p>Top view dimensions: .42 [10.6], .22 [5.7].  Side view dimensions: .35 [9.0], .020 [0.5], .016 [0.4], .09 [2.2], .09 [2.2], .126 [3.2], .06 [1.5].  End view dimensions: .38 [9.7], .05 [1.2], .29 [7.4], .126 [3.2], .008 [0.2].</p>	<p><b>PC Board Layout Viewed toward terminals</b></p> <p>Dimensions: .3 [7.6], .125 [3.2], .09 [2.2], .21 [5.3], .29 [7.4].  Hole specifications: 8-.124 [3.1], 8-.031 [0.8].</p>	<p><b>Wiring Diagram Viewed toward terminals</b></p> <p>Terminal connections: (+) 1, 2, 3, 4; (-) 8, 7, 6, 5.</p>
<p><b>SMTss</b></p> <p>Top view dimensions: .42 [10.6], .22 [5.7].  Side view dimensions: .35 [9.0], .020 [0.5], .016 [0.4], .09 [2.2], .09 [2.2], .126 [3.2], .06 [1.5].  End view dimensions: .38 [9.7], .05 [1.2], .22 [5.7], .126 [3.2], .008 [0.2].</p>		<p>Dimensions: .38 [9.7], .05 [1.2], .22 [5.7], .126 [3.2].</p>
<p><b>PC Board Layout Viewed toward terminals</b></p> <p>Dimensions: .3 [7.6], .125 [3.2], .09 [2.2], .175 [4.45], .29 [7.4].  Hole specifications: 8-.09 [2.25], 8-.03 [0.8].</p>	<p><b>Wiring Diagram Viewed toward terminals</b></p> <p>Terminal connections: (+) 1, 2, 3, 4; (-) 8, 7, 6, 5.</p>	



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