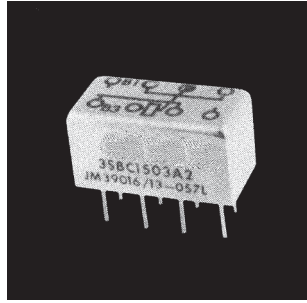


**Double Pole, Electrically Held, 2 Amps and Less** (Continued)

**.150 Grid-space Relays**  
**Type 3SBC (2PDT) Standard**  
**135 mW 2PDT**  
**50 mW (Form AB)**  
**1 PNC-1 PNO**



**Product Facts**

- Low profile... only 0.32 inches high
- Internal diode for coil transient suppression and transistor driven models available
- Qualified to MIL-R-39016/13
- RF designs available

The .150 Grid-space relay — only 0.32 inches high — saves space in electronic packaging. The pin spacing allows you to insert the relay with no intermediate pin spreaders as well as meet applicable military specifications.

**Electrical Characteristics**

**Contact Ratings** —  
 DC resistive — 2 amps at 28 volts (50,000 operations)  
 1 Amp @ 28 V (100,000 operations)  
 DC inductive — 0.5 amps at 28 volts, 200 mH  
 AC resistive — 0.5 amps at 115 volts  
 AC — 0.125 amps at 115 volts (case grounded)  
 Low-level — 50 µA at 50 mV Peak AC or DC

**Contact Resistance** —  
 0.050 ohms max.; 0.150 ohms after life test

**Life** — 100,000 operations at rated loads listed; 1,000,000 operations at low-level loads

**Operating Characteristics**

**Operate Time** — 4 ms max.  
**Release Time** — 4 ms max.  
**Contact Bounce** — 1.5 ms  
**Dielectric Strength** —  
 500 volts rms at sea level;  
 350 volts rms at 70,000 feet and above  
**Insulation Resistance** — 1,000 megohm min. over temperature range

**Environmental Characteristics**

**Vibration** — 30G, to 3000 Hz  
**Shock** — 100 G at 11 ms  
**Temperature** — -65°C to +125°C

See page 1-44 for Mounting Forms, Terminals and Circuit Diagrams.

**Coil Table Type 3SBC (All Values DC)\*2PDT, 135 mW Sensitivity: (Code 1)**

| Coil Code Letter | Coil Resistance @ 25C (ohms) | Voltage Calibrated, Code 5 |                          |                             |      | Current Calibrated, Code 6          |                                 |                                  |      |
|------------------|------------------------------|----------------------------|--------------------------|-----------------------------|------|-------------------------------------|---------------------------------|----------------------------------|------|
|                  |                              | Suggested Source Volts†    | Max. Operate Volts @ 25C | Release Voltage Range @ 25C |      | Max. Continuous Current @ 125C (mA) | Max. Operate Current @ 25C (mA) | Release Current Range @ 25C (mA) |      |
|                  |                              |                            |                          | Max.                        | Min. |                                     |                                 | Max.                             | Min. |
| A                | 44 ± 10%                     | 3.5-6.2                    | 2.4                      | 1.45                        | 0.26 | 87.0                                | 54.5                            | 32.7                             | 6.00 |
| B                | 56 ± 10%                     | 4.0-7.0                    | 2.7                      | 1.6                         | 0.3  | 77.0                                | 48.3                            | 28.6                             | 5.30 |
| D                | 140 ± 10%                    | 6.4-12.0                   | 4.4                      | 2.6                         | 0.5  | 50.3                                | 31.4                            | 18.5                             | 3.60 |
| E                | 210 ± 10%                    | 8.0-16.0                   | 5.4                      | 3.2                         | 0.6  | 40.0                                | 25.7                            | 15.4                             | 2.80 |
| L                | 650 ± 10%                    | 13.6-24.0                  | 9.5                      | 5.6                         | 1.0  | 22.9                                | 14.3                            | 8.6                              | 1.54 |
| K                | 1350 ± 10%                   | 20.0-35.0                  | 13.5                     | 8.1                         | 1.5  | 15.5                                | 10.0                            | 6.0                              | 1.10 |
| N                | 2245 ± 10%                   | 26.0-46.0                  | 17.1                     | 10.5                        | 1.9  | 12.0                                | 7.6                             | 4.7                              | 0.84 |

**Coil-Data (All Values DC)\* Type 3SBC Form AB 50 mW Sensitivity non mil spec: (Code 2)**

| Coil Code Letter | Coil Resistance @ 25C (ohms) | Voltage Calibrated, Code 5 |                          |                             |      | Current Calibrated, Code 6          |                                 |                                  |      |
|------------------|------------------------------|----------------------------|--------------------------|-----------------------------|------|-------------------------------------|---------------------------------|----------------------------------|------|
|                  |                              | Suggested Source Volts†    | Max. Operate Volts @ 25C | Release Voltage Range @ 25C |      | Max. Continuous Current @ 125C (mA) | Max. Operate Current @ 25C (mA) | Release Current Range @ 25C (mA) |      |
|                  |                              |                            |                          | Max.                        | Min. |                                     |                                 | Max.                             | Min. |
| B                | 56 ± 10%                     | 2.6-7.0                    | 1.8                      | 1.1                         | 0.16 | 46.5                                | 29.1                            | 18.2                             | 3.30 |
| C                | 85 ± 10%                     | 3.3-9.5                    | 2.3                      | 1.4                         | 0.20 | 38.7                                | 24.2                            | 15.1                             | 2.70 |
| D                | 140 ± 10%                    | 4.3-12.0                   | 2.9                      | 1.8                         | 0.27 | 30.4                                | 19.0                            | 11.9                             | 2.10 |
| E                | 210 ± 10%                    | 5.3-14.0                   | 3.6                      | 2.2                         | 0.33 | 24.8                                | 15.5                            | 9.7                              | 1.75 |
| F                | 360 ± 10%                    | 6.7-19.0                   | 4.5                      | 2.8                         | 0.41 | 18.9                                | 11.8                            | 7.2                              | 1.30 |
| G                | 510 ± 10%                    | 8.2-23.0                   | 5.6                      | 3.5                         | 0.51 | 15.8                                | 9.9                             | 6.2                              | 1.10 |
| H                | 775 ± 10%                    | 10.0-26.0                  | 6.8                      | 4.2                         | 0.62 | 12.8                                | 8.0                             | 5.0                              | 0.90 |
| K                | 1350 ± 10%                   | 13.2-35.0                  | 9.0                      | 5.6                         | 0.82 | 9.8                                 | 6.1                             | 3.8                              | 0.68 |
| N                | 2245 ± 10%                   | 16.8-46.0                  | 11.4                     | 7.1                         | 1.00 | 7.4                                 | 4.6                             | 2.9                              | 0.52 |

\*Values listed are factory test and inspection data. User should allow for meter variations.

†At nominal resistance plus 10%.

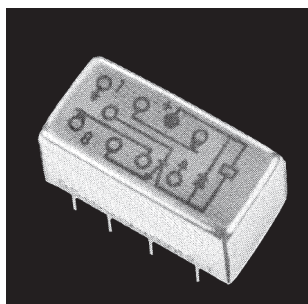
‡Applicable over the operating temperature range in circulating air.

See Page 1-42 for ordering instructions.

\* The part number example shown on this page is for catalog items. For a list of specific QPL part numbers, please see the index in Section 15.

**Double Pole, Electrically Held, 2 Amps and Less (Continued)**

**.150 Grid-space Hybrid Relays**  
**Single Diode, Dual Diode**  
**Type 3SBC (2PDT)**  
**135 mW**



**Product Facts**

- Low profile... only 0.32 inches high
- 50 milliwatt forms available
- Qualified to MIL-R-39016/37
- Qualified to MIL-R-39016/38
- RF designs available

The hybrid .150 Grid-space relay — only 0.32 inches high — saves space in electronic packaging. The pin spacing allows you to insert the relay with no intermediate pin spreader.

**Electrical Characteristics**

**Contact Ratings** —  
 DC resistive — 2 amps at 28 volts (50,000 operations)  
 1 Amp @ 28 V (100,000 operations)  
 DC inductive — 0.5 amps at 28 volts, 200 mH  
 AC resistive — 0.5 amps at 115 volts  
 AC — 0.125 amps at 115 volts (case grounded)  
 Low-level — 50 µA at 50 mV  
 Peak AC or DC

**Contact Resistance** —  
 0.050 ohms max.; 0.150 ohms after life test

**Life** — 100,000 operations at rated loads listed; 1,000,000 operations at low-level loads

**Operating Characteristics**

**Operate Time** — 4 ms max.  
**Release Time** — 6 ms max.  
**Contact Bounce** — 1.5 ms  
**Dielectric Strength (Note 1)** —  
 500 volts rms at sea level;  
 350 volts rms at 70,000 feet and above  
**Insulation Resistance (Note 1)** —  
 1,000 megohm min. over temperature range

**Environmental Characteristics**

**Vibration** — 30G, to 3000 Hz  
**Shock** — 100 G at 11 ms  
**Temperature** — -65°C to +125°C

**Semiconductor Characteristics at 25°C**

**Diode** —  
 Max. Negative Transient — 1.0 volt  
 Breakdown Voltage — 100 VDC @ 10 µA  
 Max. Leakage Current — 1 µA @ 50 VDC

See page 1-44 for Mounting Forms, Terminals and Circuit Diagrams.

**Coil Table Single Diode (All Values DC)\*(2DPT), 135 mW Sensitivity: (Code 5)**

| Coil Code Letter | Coil Resistance (@ 25C (ohms) | Voltage Calibrated, Code 5 |                           |                             |      | Current Calibrated, Code 6          |                                 |                                  |      |
|------------------|-------------------------------|----------------------------|---------------------------|-----------------------------|------|-------------------------------------|---------------------------------|----------------------------------|------|
|                  |                               | Suggested Source Volts†    | Max. Operate Volts (@ 25C | Release Voltage Range @ 25C |      | Max. Continuous Current @ 125C (mA) | Max. Operate Current @ 25C (mA) | Release Current Range @ 25C (mA) |      |
|                  |                               |                            |                           | Max.                        | Min. |                                     |                                 | Max.                             | Min. |
| A                | 44 ± 10%                      | 3.5- 6.2                   | 2.4                       | 1.45                        | 0.26 | 87.0                                | 54.5                            | 32.7                             | 6.00 |
| B                | 56 ± 10%                      | 4.0- 7.0                   | 2.7                       | 1.6                         | 0.3  | 77.0                                | 48.3                            | 28.6                             | 5.30 |
| D                | 140 ± 10%                     | 6.4-12.0                   | 4.4                       | 2.6                         | 0.5  | 50.3                                | 31.4                            | 18.5                             | 3.60 |
| E                | 210 ± 10%                     | 8.0-16.0                   | 5.4                       | 3.2                         | 0.6  | 40.0                                | 25.7                            | 15.4                             | 2.80 |
| L                | 650 ± 10%                     | 13.6-24.0                  | 9.5                       | 5.6                         | 1.0  | 22.9                                | 14.3                            | 8.6                              | 1.54 |
| K                | 1350 ± 10%                    | 20.0-35.0                  | 13.5                      | 8.1                         | 1.5  | 15.5                                | 10.0                            | 6.0                              | 1.10 |
| N                | 2245 ± 10%                    | 26.0-46.0                  | 17.1                      | 10.5                        | 1.9  | 12.0                                | 7.6                             | 4.7                              | 0.84 |

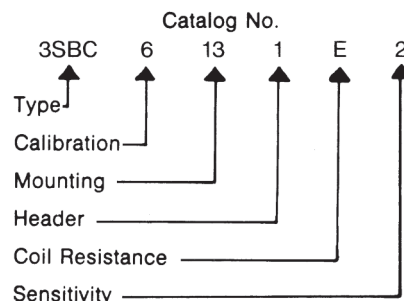
**Coil Table Dual Diode (All Values DC)\*(2DPT), 135 mW Sensitivity: (Code 6)**

| Coil Code Letter | Coil Resistance (@ 25C (ohms) | Suggested Source Volts† | Max. Operate Volts (@ 25C | Release Voltage Range @ 25C | Max. Continuous Current @ 125C (mA) | Max. Operate Current @ 25C (mA) | Release Current Range @ 25C (mA) |
|------------------|-------------------------------|-------------------------|---------------------------|-----------------------------|-------------------------------------|---------------------------------|----------------------------------|
| A                | 44 ± 10%                      | 3.9- 7.0                | 3.4                       | 2.0                         | 0.37                                | 98.2                            | 77.3                             |
| B                | 56 ± 10%                      | 4.6- 8.0                | 3.7                       | 2.2                         | 0.41                                | 89.8                            | 66.1                             |
| D                | 140 ± 10%                     | 7.8-12.0                | 5.4                       | 3.2                         | 0.6                                 | 52.4                            | 38.6                             |
| E                | 210 ± 10%                     | 9.3-16.0                | 6.4                       | 3.8                         | 0.7                                 | 41.4                            | 30.5                             |
| L                | 650 ± 10%                     | 15.0-24.0               | 10.5                      | 6.2                         | 1.1                                 | 23.6                            | 16.2                             |
| K                | 1350 ± 10%                    | 21.0-35.0               | 14.5                      | 8.7                         | 1.6                                 | 16.0                            | 10.7                             |
| N                | 2245 ± 10%                    | 27.0-46.0               | 18.1                      | 10.9                        | 2.0                                 | 12.1                            | 8.1                              |

**Ordering Instructions**

**Example:** The relay selected in the example is a FORM AB .150-grid relay, current calibrated, end bracket mounting with 0.13-inch solder hook header, 210 ohms coil resistance, and 50 mW sensitivity. By choosing the proper code for each of these relay characteristics, the catalog number is 3SBC6131E2. The letter R following sensitivity code indicates relay received 5000 operation miss-test. Ex. 3SBC6131E2R.

**Note:** Relays specified by catalog numbers (per above directions) are general use items controlled by catalog specifications. Relays to be controlled by customer drawings — or relays having requirements not covered in this publication — will be assigned special catalog numbers upon request.



\* The part number example shown on this page is for catalog items. For a list of specific QPL part numbers, please see the index in Section 15.