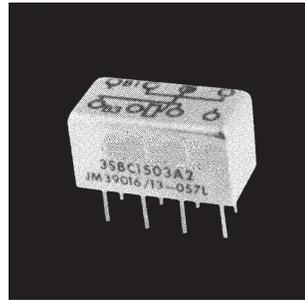


Double Pole, Electrically Held, 2 Amps and Less (Continued)

.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%.

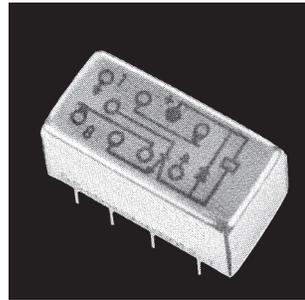
‡Applicable over the operating temperature range in circulating air.

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

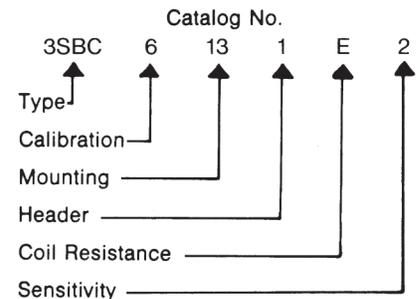
Coil Table Dual Diode (All Values DC)*(2DPT), 135 mW Sensitivity: (Code 6)

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.



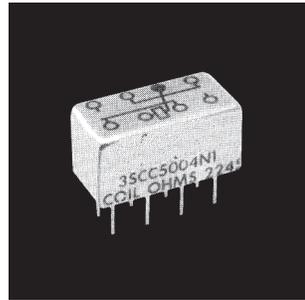
* The part number example shown on this page is for catalog items. For a list of specific QPL part numbers, please see the index in Section 15.

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

**.150 Grid-space
Long-life Relays
Type 3SCC (2PDT)
170 mW**

Product Facts

- 100,000,000 operations low-level signal loads
- RF designs available
- Low profile — 0.32 height
- Hermetic seal
- High reliability
- Performance tested



The .150 Grid relay, the smallest (.320 inches high) 2 Amp rated relay available in commercial and military qualified models, is now available in the long life version. Capable of over 100,000,000 mechanical operations at low level and signal load, the .150 Grid relay provides the simplicity of relays for circuit design, the low circuit resistance of precious metal contact systems, and the long life processing that has made CII relays the standard for quality and reliability.

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 — -40°C to +125°C

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

Coil Table Type 3SCC (All Values DC)* 2 PDT Relay – 170mW 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	2.7	1.45	0.26	87.0	61.4	32.7	6.00
B	56 ± 10%	4.0- 7.0	3.1	1.6	0.3	77.0	55.4	28.6	5.30
D	140 ± 10%	6.4-12.0	4.9	2.6	0.5	50.3	35.0	18.5	3.60
E	210 ± 10%	8.0-16.0	5.9	3.2	0.6	40.0	28.0	15.4	2.80
L	650 ± 10%	13.6-24.0	10.5	5.6	1.0	22.9	16.2	8.6	1.54
K	1350 ± 10%	20.0-35.0	15.1	8.1	1.5	15.5	11.2	6.0	1.10
N	2245 ± 10%	26.0-46.0	19.5	10.5	1.9	12.0	8.7	4.7	0.84

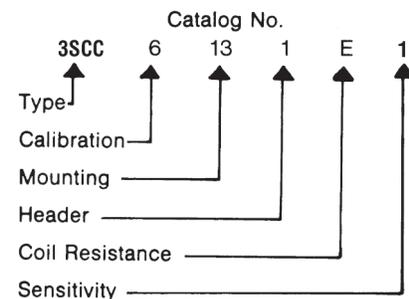
*Values listed are factory test and inspection data. User should allow for meter variations.

†Applicable over the operating temperature range in circulating air.

Ordering Instructions

Example: The relay selected in the example is a 2PDT .150-grid relay, current calibrated, end bracket mounting with 0.13-inch solder hook header, 210 ohms coil resistance, and 175 mW sensitivity. By choosing the proper code for each of these relay characteristics, the catalog number is 3SCC6131E1. The letter R following sensitivity code indicates relay received 5000 operation miss-test. Ex. 3SCC6131E1R.

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.



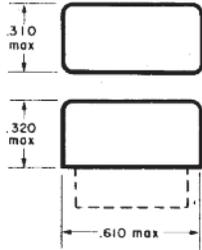
Double Pole, Electrically Held, 2 Amps and Less (Continued)

Mounting Forms (3SBC, 3SCC)

(Vibration note with each form is acceleration from 55 to 3000 Hz)

All dimensions in inches

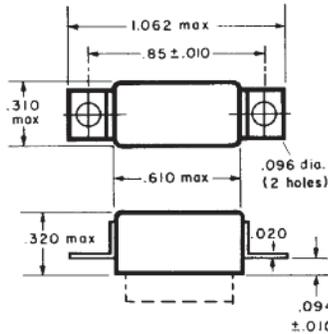
TOLERANCES (Unless otherwise specified)	
Hundredths	± 0.020
Thousandths	± 0.005



No Mount

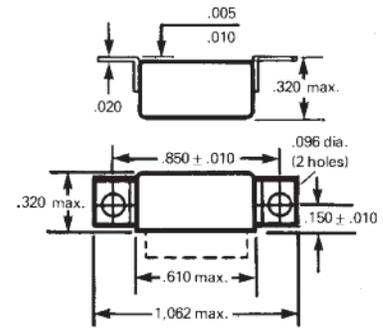
Mounting Code	Vibration
00	30g

*Assumes relay held securely by potting or other means



End Bracket

Mounting Code	Vibration
13	30g



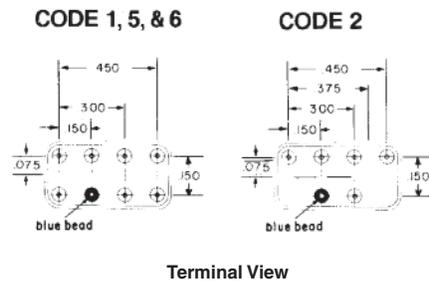
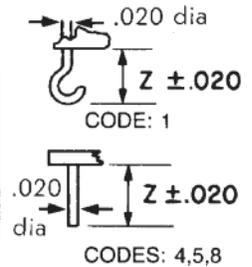
Side Bracket

Mounting Code	Vibration
25	30g

Header and Connection Diagrams

Header Types

TYPE	Z DIMENSION	HEADER CODE
Solder hook	0.13	1
Straight pin	0.12	8
Straight pin	0.19	4
Straight pin	0.25	5



Terminal View

