
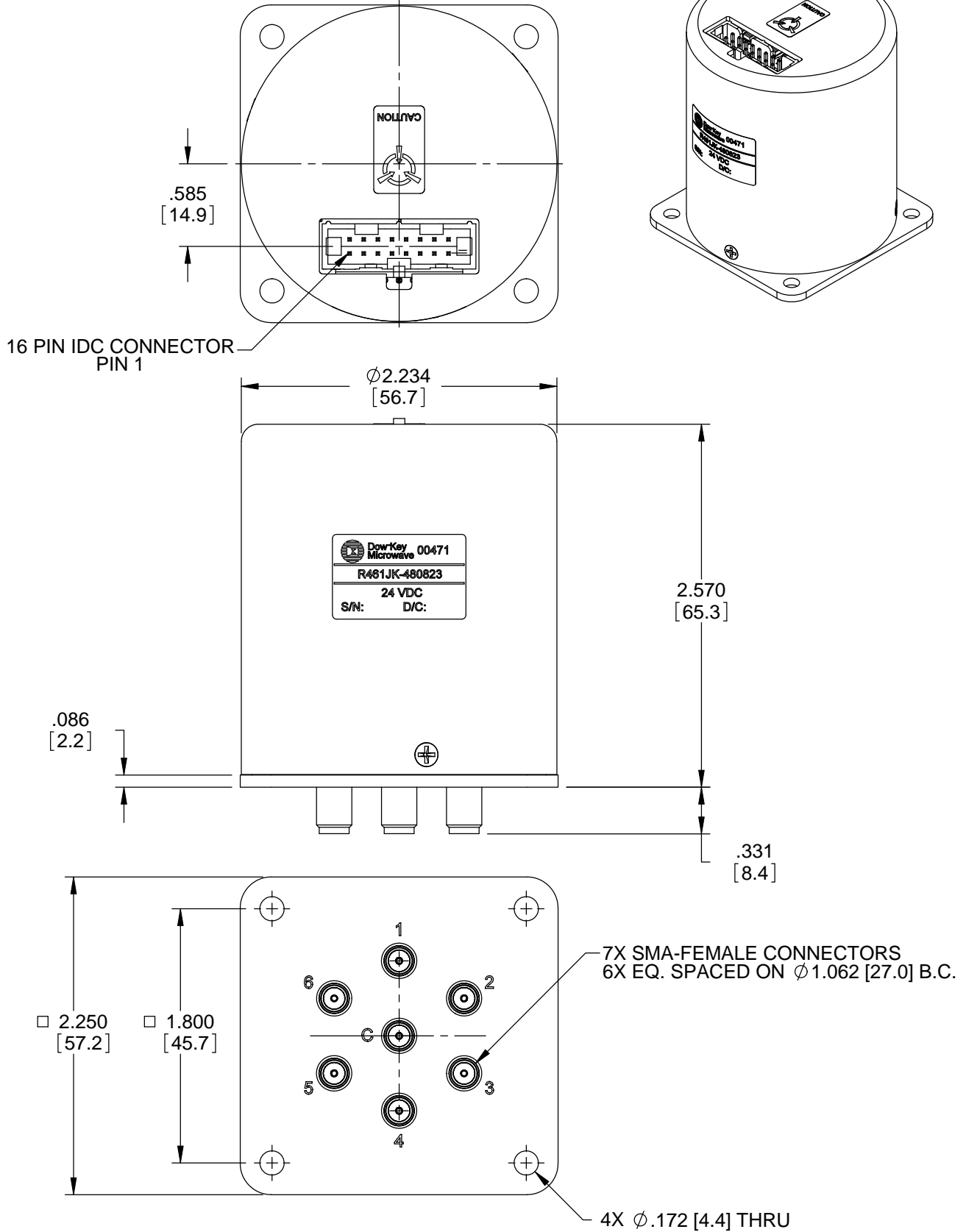


REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	7/17/14	K.R.

Nominal Coil Voltage	Part Number
24 Vdc	R461JK-480823

REVISIONS	A	A	A	A	A	A	 DowKey[®] Microwave CORPORATION <small>A DOVER TECHNOLOGIES COMPANY</small>	4822 McGrath Street Ventura, CA. 93003-5641 PH: (805) 650-0260 FAX: (805) 650-1734	
SHEET NO.	1	2	3	4	5	6			
APPROVALS		DATE					SW, SP6T, LATCHING SELF CUT-OFF, 16 PIN IDC CONN. SMA-FEMALE CONNECTORS, INDICATORS 50 OHM [1W] INT TERMINATIONS, 5 MIL CYCLE, 26.5GHz		
DRAWN	SARA LEE					07/22/13			
ENGINEERING	T. JOHNSON					7/14/2014			
QUALITY	S. LYNCH					7/16/2014			
MANUFACTURING	J. LEE					7/16/2014			
CODE IDENT. NO.			DWG. NO.						
00471			R461JK-480823						
SCALE	NONE		FINAL ASSY: R461JK-480823				SHEET 1 OF 6		

OUTLINE DRAWING:



[] MILLIMETERS

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE: .XXX ±.010 ANGLES: ±3° .XX ±.030	CODE IDENT. NO. 00471	DWG. NO. R461JK-480823	REV. A
	SCALE NONE	FINAL ASSY: XXX	SHEET 2 OF 6

SPECIFICATION:

1.0 RF CHARACTERISTICS:

1.1	FREQUENCY (GHz):	DC - 4	4 - 12.4	12.4 - 18	18 - 26.5
1.2	VSWR (RATIO MAX):	1.20:1	1.35:1	1.45:1	1.70:1
1.3	INSERTION LOSS (dB MAX):	0.3 + 0.015 x frequency (GHz)			
1.4	ISOLATION (dB MAX):	100	80	70	65
1.5	IMPEDANCE (NOMINAL):	50	50	50	50
1.6	THIRD ORDER INTER MODULATION:	-120 dBc typical (2 carriers 20W)			
1.7	REPEATABILITY (MAX):	0.03 dB @ 25° C			

2.0 ACTUATION DATA:

2.1	OPERATING MODE:	LATCHING
2.2	OPERATING VOLTAGE:	20 - 32 Vdc (24Vdc NOMINAL)
2.3	COIL RESISTANCE:	132 OHMS
2.4	OPERATING CURRENT:	195 mA @ 25° C TYPICAL
2.5	STAND-BY CURRRENT:	50 mA
2.6	INDICATOR SPECIFICATIONS:	
	2.7.1 MAXIMUM WITHSTANDING VOLTAGE:	60V
	2.7.2 MAXIMUM CURRENT CAPACITY:	150 mA
	2.7.3 MAXIMUM <<ON>> RESISTANCE:	2.5 Ω
	2.7.4 MAXIMUM <<OFF>> RESISTANCE:	10 G Ω
2.7	SWITCHING TIME:	15 mS MAX

3.0 MECHANICAL:

3.1	DESIGN LIFE:	5 MILLION CYCLES MIN
3.2	ACTUATOR TERMINAL:	16 PIN, IDC CONNECTOR (.1" SPACING)
3.3	WEIGHT:	250 g MAX

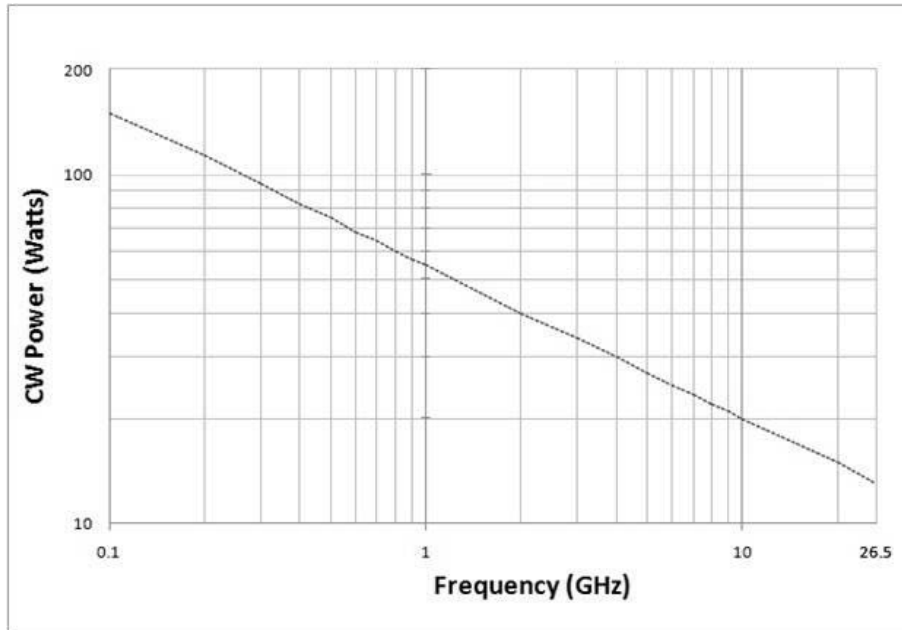
4.0 ENVIRONMENTAL:

4.1	OPERATING TEMPERATURE:	-25° C TO +75° C
4.2	STORAGE TEMPERATURE:	-55° C TO +85° C
4.3	TEMPERATURE CYCLING:	-55° C TO +85° C (10 CYCLES)
4.4	VIBRATION: OPERATING	7g: 5-2000 Hz @ 0.25 IN P-P
	4.4.1 SURVIVAL	20g: 20-2000 Hz @ 0.06 IN P-P 4 MIN/CYCLE, 4 CYCLES/AXIS
	4.4.2 RANDOM	2.41g (rms) 10 MIN/ AXIS
4.5	SHOCK:	HALF-SINE: 500g @ 0.5ms, 3 DROPS/DIRECTION, 18 TOTAL
	4.5.1 OPERATING	50g @ 6ms, 6 DIRECTIONS
4.6	MOISTURE RESISTANCE:	65° C, 95% RH, 10 DAYS
4.7	ALTITUDE STORAGE:	50,000 FEET (15,240 METERS)
4.8	RFI:	55 dB at 20 GHz
4.9	MAGNETIC FIELD:	< 6 GAUSS 1/4" FROM SURFACE

CODE IDENT. NO.	DWG. NO.	REV.
00471	R461JK-480823	A
SCALE NONE	FINAL ASSY: R461JK-480823	SHEET 3 OF 6

SUPPLEMENTAL SPECIFICATIONS:

MAX incident CW Power (cold switching) vs. Frequency

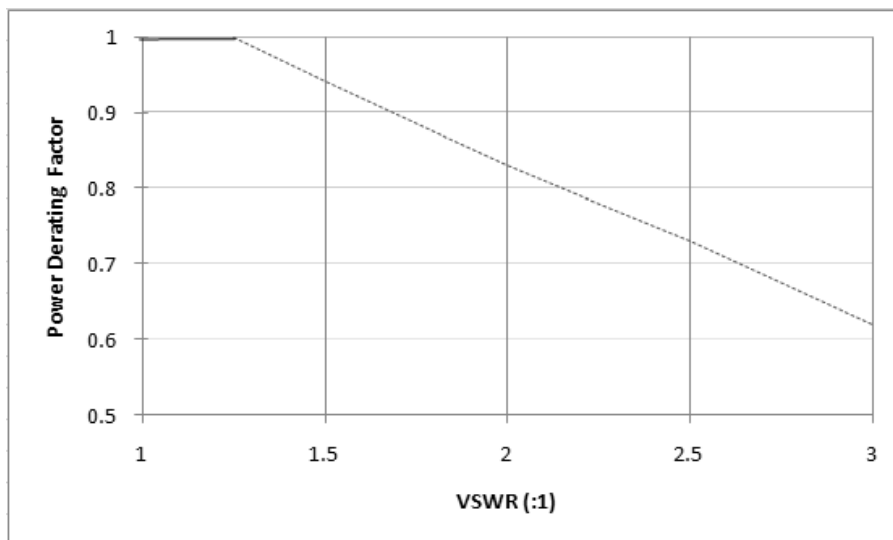


Power Handling at 25°C is 30 W at 4 GHz

Reference conditions:

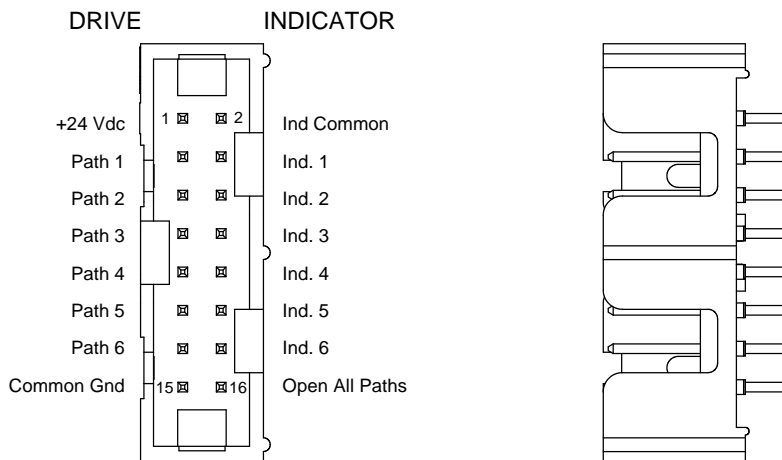
- Cold switching only (NO hot switching)
- Ambient temperature of 75 °C or less
- Sea level (0.88 derating @ 15,000 ft)
- Load VSWR < 1.2 (see graph for derating above 1.2 VSWR)

Power Derating Factor vs. VSWR



CODE IDENT. NO. 00471	DWG. NO. R461JK-480823	REV. A
SCALE NONE	FINAL ASSY: R461JK-480823	SHEET 4 OF 6

DRIVING THE SWITCH:



Each RF path can be closed by applying Ground to the corresponding "drive" pin. Any non-driven path will be simultaneously opened by internal logic.

Standard drive:

- Connect pin 15 to ground.
- Connect pin 1 to supply (+20Vdc to +32Vdc)
- Select (close) desired RF path by applying Ground to the corresponding "drive" pin (Ex: apply Ground to pin 3 to close RF path 1).
- To select another path, ensure that all unwanted RF path "drive" pins are disconnected from Ground (to prevent multiple RF path engagement). Apply Ground to the "drive" pin which corresponds to the desired RF path.
- To open all RF paths, ensure that all RF path "drive" pins are disconnected from Ground. Complete the operation by applying Ground to pin 16.

Break-Before-Make

Open the undesired RF path. After 15 mS (minimum), close the new RF path.

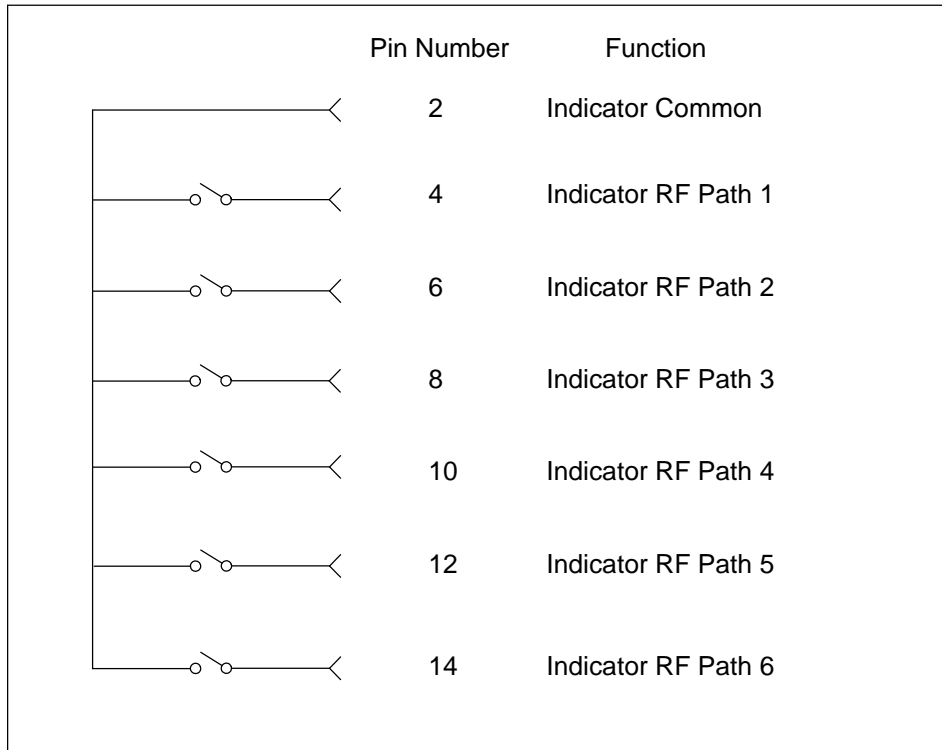
Make-Before-Break

Ensure that the previously selected RF path "drive" is connected to Ground, then close the new RF path. The previously selected path can then be de-selected.

CODE IDENT. NO. 00471	DWG. NO. R461JK-480823	REV. A
SCALE NONE	FINAL ASSY: R461JK-480823	SHEET 5 OF 6

ELECTRONIC POSITION INDICATORS:

The electronic position indicators consist of optically isolated, solid state relays which are driven by, photo-electric sensors coupled to the mechanical position of the RF paths moving elements. The circuitry consists of a common which can be connected to an output corresponding to the selected RF path. If one or more RF paths are closed, the corresponding indicators will be connected to the common. The solid state relays are configured for AC and/or DC operation. The electronic position indicators require the supply (20 to 32 Vdc) to be connected to pin 1 and Ground connected to pin 15.



CODE IDENT. NO. 00471	DWG. NO. R461JK-480823	REV. A
SCALE NONE	FINAL ASSY: R461JK-480823	SHEET 6 OF 6