	Cage Code:	Title:	Date:	Rev:	Document no:
Hill Engineering Division	02WLO	PRODUCT DATA (subject to change)	7/29/2009	None	AB-078
(15H04432-01)					

This document describes the performance of a high power dual in line SPDT switch. It is used to switch a filter or fixed attenuator in/out of the RF line. This is a cold switched design i.e.; switched while RF is off. Proper bias levels must be applied when operating this device.

ITEM NO	CHARACTERISTIC	CONDITIONS	MIN	MAX	UNITS	COMMENTS
1	POWER SPECIFICATION	IN BAND				
1.1	FREQUENCY	J1-J2	0.35	1.05	GHz	
1.2	PEAK POWER	J1-J2		125	WATTS	
1.3	PULSE WIDTH	J1-J2	0.4	10	μS	
1.4	DUTY	J1-J2		6	%	
1.5	AVG. POWER	J1-J2		7.5	WATTS	
1.6	CW POWER	J1-J2		7.5	WATTS	
1.7	HARMONICS IN	J1-J2		-10	dBc	
2	POWER SPECIFICATIONS	GUARD BAND				
2.1	FREQUENCY	J1-J2	1.05	1.5	GHz	
2.2	PEAK POWER	J1-J2		25	WATTS	
2.3	PULSE WIDTH	J1-J2	0.4	10	μS	
2.4	DUTY	J1-J2		6	%	
2.5	AVG POWER	J1-J2		1.5	WATTS	
3	POWER SPECIFICATIONS	OUT OF BAND		1.5	WATTO	
3.1	FREQUENCY	ALL PORTS	>1.5		GHz	
			>1.5	0.5		
3.2	PEAK POWER	ALL PORTS		2.5	WATTS	
3.3	PULSE WIDTH	ALL PORTS	0.4	10	μS	
3.4	DUTY	ALL PORTS	0	CW	%	
4	POWER SPECIFICATION	DWG 4188 path				
4.1	MAX POWER, CW OR PULSED	J1-J3; J3-J4		1.0	WATT	
5	OPERATING FREQUENCY		0.35	1.05	GHz	
6	INSERTION LOSS	DWG 4188 path				
6.1		J1-J3		0.8	dB	
6.2		J1-J2, J3-J4		0.6	dB	
7	ISOLATION	DWG 4188 path				
7.1		J1-J3	120		dB	
7.2		J1-J2; J3-J4	40		dB	

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Note	ITEM NO	CHARACTERISTIC	CONDITIONS	MIN	MAX	UNITS	COMMENTS
1.65.1 1		VSWR					
SELECTED PORTS	8.1	PORTS NOT SELECTED					INFINITE (Reflective)
1.5:1	8.2				1.65:1		
9 SPURS 9.1 INTERNALLY GENERATED IN-BAND -124 dBm Ports J1-J3 and J3-J4 10. SWITCHING -10. SPEED 50% Logic To 0.5dB 195 nS 10.2 LOGIC DUTY CYCLE 4 50 % Pin selectable pins 4 and/or 5 SUMTCHING NAME 50 NHAM SEED NO 100 RHz Pin selectable pins 4 and/or 5 SUMAND LOGIC TTL or RS-422 Pin selectable pins 4 and/or 5 SUMAND LOGIC TTL or RS-422 Pin selectable pins 4 and/or 5 SUMAND LOGIC TTL or RS-422 Pin selectable pins 4 and/or 5 SUMAND LOGIC TTL or RS-422 Pin selectable pins 4 and/or 5 SUMAND LOGIC TABLE SEE DWG 4188 10.6 LOGIC TABLE SEE DWG 4188 11 D.C. POWER SEE DWG 4188 11 D.C. POWER SEE DWG 4188 11.1 POSITIVE BIAS VOLTAGE A.8 5.2 VDC SUMAND LOGIC SEE DWG 4188 11.2 NEGATIVE BIAS CURRENT SO MA SUMAND NOTE: NO OVER-VOLTAGE OR REVERSE POLARITY PROTECTION IS PROVIDED WITH THIS SWITCH. 12 CONNECTORS SUMAND SMAF 12.3 DC & LOGIC SMAF 13.1 WEIGHT SMAF 13.1 WEIGHT SMAF 13.2 OUTLINE SEE DWG 4188 14 ENVIRONMENTAL 14.1 OPERATING TEMPERATURE O H60 °C 14.2 STORAGE TEMPERATURE 15.2 STORAGE TEMPERATURE 16.4 DBM DOTES JULIA JULI	8.3				2.0:1		
9.1 INTERNALLY GENERATED IN-BAND -124 dBm Ports J1-J3 and J3-J4 10 SWITCHING 10.1 SPEED 50% Logic To 0.5dB 195 nS 10.2 LOGIC DUTY CYCLE 4 50 % 10.3 LOGIC SWITCHING RATE 0 100 kHz 10.4 COMMAND LOGIC TTL or RS-422 Pin selectable pins 4 and/or 5 10.5 VIDEO LEAKAGE J3 PORT ONLY 1 mV P-P IN BAND ACROSS 50 OHMS 10.6 LOGIC TABLE SEE DWG 4188 11 D.C. POWER 11.1 POSITIVE BIAS VOLTAGE 4.8 5.2 VDC 11.2 NEGATIVE BIAS CURRENT 50 mA 11.4 POSITIVE BIAS CURRENT 50 mA NOTE: NO OVER-VOLTAGE OR REVERSE POLARITY PROTECTION IS PROVIDED WITH THIS SWITCH. 12 CONNECTORS 12 CONNECTORS 13 MECHANICAL 14 ENVIRONMENTAL 14 ENVIRONMENTAL 14 ENVIRONMENTAL 14 ENVIRONMENTAL	8.4	SOURCE			1.5:1		
10	9	SPURS					
10. SWITCHING	9.1	INTERNALLY GENERATED	IN-BAND		-124	dBm	Ports J1-J3 and J3-J4
10.2 LOGIC DUTY CYCLE	10	SWITCHING					1 STUS OF THE MILE OF THE
10.3 LOGIC SWITCHING RATE 0 100 kHz	10.1	SPEED	50% Logic To 0.5dB		195	nS	
10.4 COMMAND LOGIC	10.2	LOGIC DUTY CYCLE	-	4	50	%	
10.5 VIDEO LEAKAGE J3 PORT ONLY 1 mV P-P IN BAND ACROSS 50 OHMS 10.6 LOGIC TABLE SEE DWG 4188 11 D.C. POWER 11.1 POSITIVE BIAS VOLTAGE 4.8 5.2 VDC 11.2 NEGATIVE BIAS VOLTAGE 2.4 -32 VDC 11.4 POSITIVE BIAS CURRENT 400 mA 11.5 NEGATIVE BIAS CURRENT 50 mA NOTE: NO OVER-VOLTAGE OR REVERSE POLARITY PROTECTION IS PROVIDED WITH THIS SWITCH. 12 CONNECTORS 12.1 RF SMAF 12.3 DC & LOGIC 9 PIN "D" 13 MECHANICAL 9 PIN "D" 13 MECHANICAL 18 OZ. 13.1 WEIGHT 18 OZ. 14 ENVIRONMENTAL 18 OZ. 14 ENVIRONMENTAL 19 STORAGE TEMPERATURE 0 +60 °C 14.2 STORAGE TEMPERATURE -20 +85 °C	10.3	LOGIC SWITCHING RATE		0	100	kHz	
10.5	10.4	COMMAND LOGIC	TTL or RS-422				1
10.6 LOGIC TABLE	10.5	VIDEO LEAKAGE	J3 PORT ONLY		1	mV p-p	IN BAND ACROSS 50
11.1 POSITIVE BIAS VOLTAGE 4.8 5.2 VDC	10.6	LOGIC TABLE					
11.1 POSITIVE BIAS VOLTAGE 4.8 5.2 VDC							
11.2 NEGATIVE BIAS VOLTAGE -24 -32 VDC							
11.4 POSITIVE BIAS CURRENT							
11.5 NEGATIVE BIAS CURRENT 50 mA				-24	-32	VDC	
NOTE: NO OVER-VOLTAGE OR REVERSE POLARITY PROTECTION IS PROVIDED WITH THIS SWITCH. 12 CONNECTORS 12.1 RF 12.3 DC & LOGIC 13 MECHANICAL 13.1 WEIGHT 14.1 ENVIRONMENTAL 14.1 OPERATING TEMPERATURE 14.2 STORAGE TEMPERATURE 15.2 OUTLINE 16.3 SEE DWG 4188 17.4 ENVIRONMENTAL 18.4 OC. 19.4 OC. 19.4 OC. 19.5 OC. 19.6 OC. 19.6 OC. 19.7 OC.	11.4	POSITIVE BIAS CURRENT			400	mA	
12 CONNECTORS 12.1 RF 12.3 DC & LOGIC 13 MECHANICAL 13.1 WEIGHT 13.2 OUTLINE 14 ENVIRONMENTAL 14.1 OPERATING TEMPERATURE 15 CONNECTORS 16 SMAF 17 9 PIN "D" 18 Oz. 18 Oz. 18 Oz. 19 ENVIRONMENTAL 19 CONNECTORS 10 SMAF 10 9 PIN "D" 10 9 PIN "D" 10 9 PIN "D" 11 SMAF 12 9 PIN "D" 14 SMAF 15 OZ. 16 SEE DWG 4188 17 OZ. 18 OZ. 18 OZ. 19 OZ. 10 SEE DWG 4188	11.5	NEGATIVE BIAS CURRENT			50	mA	
12.1 RF 12.3 DC & LOGIC 9 PIN "D" 13 MECHANICAL 13.1 WEIGHT 13.2 OUTLINE 14 ENVIRONMENTAL 14.1 OPERATING TEMPERATURE 15 SMAF 9 PIN "D" 16 SMAF 17 SMAF 18 Oz. 18 Oz. 18 Oz. 18 Oz. 18 Oz. 18 Oz. 19 PIN "D" 18 Oz. 18 Oz. 19 PIN "D" 18 Oz.		NOTE: NO OVER-VOLTAGE C	R REVERSE POLARIT	Y PROT	ECTION I	IS PROVID	ED WITH THIS SWITCH.
12.3 DC & LOGIC 9 PIN "D" 13 MECHANICAL 9 PIN "D" 13.1 WEIGHT 18 Oz. 13.2 OUTLINE SEE DWG 4188 14 ENVIRONMENTAL 9 PIN "D" 14.1 OPERATING TEMPERATURE 0 +60 °C 14.2 STORAGE TEMPERATURE -20 +85 °C	12	CONNECTORS					
13 MECHANICAL 18 Oz. 13.1 WEIGHT 18 Oz. 13.2 OUTLINE SEE DWG 4188 14 ENVIRONMENTAL 14.1 OPERATING TEMPERATURE 0 +60 °C 14.2 STORAGE TEMPERATURE -20 +85 °C	12.1	RF					SMAF
13.1 WEIGHT 18 Oz. 13.2 OUTLINE SEE DWG 4188 14 ENVIRONMENTAL SEE DWG 4188 14.1 OPERATING TEMPERATURE 0 +60 °C 14.2 STORAGE TEMPERATURE -20 +85 °C	12.3	DC & LOGIC					9 PIN "D"
13.1 WEIGHT 18 Oz. 13.2 OUTLINE SEE DWG 4188 14 ENVIRONMENTAL SEE DWG 4188 14.1 OPERATING TEMPERATURE 0 +60 °C 14.2 STORAGE TEMPERATURE -20 +85 °C	13	MECHANICAL					
13.2 OUTLINE SEE DWG 4188 14 ENVIRONMENTAL OPERATING TEMPERATURE 0 +60 °C 14.1 OPERATING TEMPERATURE 0 +85 °C					18	07	
14.1 OPERATING TEMPERATURE 0 +60 °C 14.2 STORAGE TEMPERATURE -20 +85 °C					10	02.	SEE DWG 4188
14.1 OPERATING TEMPERATURE 0 +60 °C 14.2 STORAGE TEMPERATURE -20 +85 °C							
14.2 STORAGE TEMPERATURE -20 +85 °C	14	ENVIRONMENTAL					
	14.1	OPERATING TEMPERATURE		0	+60	°C	
14.3 VIBRATION LEVEL SHELTERED GROUND MOBILE	14.2	STORAGE TEMPERATURE		-20	+85	°C	
	14.3	VIBRATION LEVEL					SHELTERED GROUND MOBILE



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