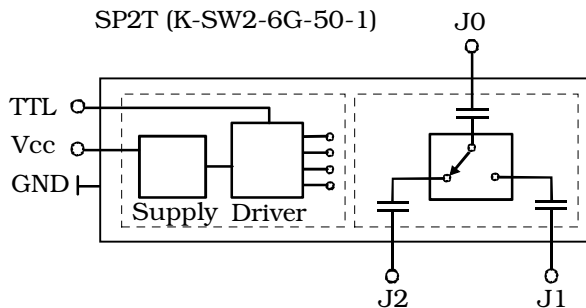


Typical Applications

- The K-SW2-6G-50-1 is ideal for:
- broadband & high power switching
 - channel sounding applications
 - fast T/R frontend switching
 - general test and instrumentation



Block Diagram



Features

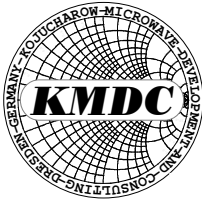
- very broadband: VHF...6 GHz
- high power capability: 40 W (CW)
- low insertion loss: 1.5 dB typ. at 6 GHz
- high isolation: 38 dB typ. at 6 GHz
- fast switching: 100 ns typ. on/off
- extend. range version (10GHz) available
- single positive supply voltage
- call us for custom modifications

Electrical Specifications

Supply voltage: $V_{cc}=12V$, control voltage: $V_{CTR}=0$ or $5V$, ambient temperature: $T=25^{\circ}C$

Parameter	Min.	Typ.	Max.	Unit	Remark
RF operating frequency f :	0.03		6	GHz	1)
Insertion loss IL :		1.0	1.2	dB	$f=3$ GHz, 2)
		1.5	1.7	dB	$f=6$ GHz, 2)
Isolation $Isol$:	43	45		dB	$f=3$ GHz, 3)
	37	38		dB	$f=6$ GHz, 3)
Port return loss RL :	14	>15			4)
Input power 0.1 dB compression $P_{-0.1dB}$:	40	42		dBm	$f=2.7$ GHz
Switching times t_{on} , t_{off} :		100	150	ns	5)
Rise and fall times t_{rise} , t_{fall} :		30	50	ns	
Supply voltage V_{cc} :	11	12	14	V	
Supply current:		80	90	mA	$V_{cc}=12V$
Temp.-range T :	0		50	$^{\circ}C$	
Digital control V_{CTR} :	0	5	5.5	V	

- 1) lower cutoff point ($IL=1$ dB) is below 1 MHz, extended range up to 10 GHz available
- 2) path J0-J1 with J1 selected, path J0-J2 with J2 selected
- 3) path J0-J1 with J2 selected, path J0-J2 with J1 selected
- 4) ports of active path, off port is reflective with $RL=1...3$ dB typ.
- 5) for definition see timing diagram below



Absolute Maximum Ratings

Parameter	Min.	Typ.	Max.	Unit	Remark
Supply voltage V_{cc} :	0		14.5	V	
RF input power P_{in} on port J0, J1, J2:			47	dBm	$T=25^{\circ}\text{C}$
DC voltage V_{DC} on port J0, J1, J2:			16	V	
Digital control voltage V_{CTR} :	0		5.5	V	

Ports and Interfaces

Name	Function	Parameter
Vcc	supply for logic and switch, V_{cc}	filtered feedthru
TTL	digital control, TTL (5V), V_{CTR}	filtered feedthru
GND	ground	case ground, solder pin
J0	RF common port	SMA female
J1	RF port 1	SMA female
J2	RF port 2	SMA female

Control Thruth Table

Logic level port TTL	Active RF path (insertion loss state)
0	J0-J1
1	J0-J2

The table describes the standard product. For 3.3V level TTL control and/or inverse logic please contact us.

Definition of Timing Parameters

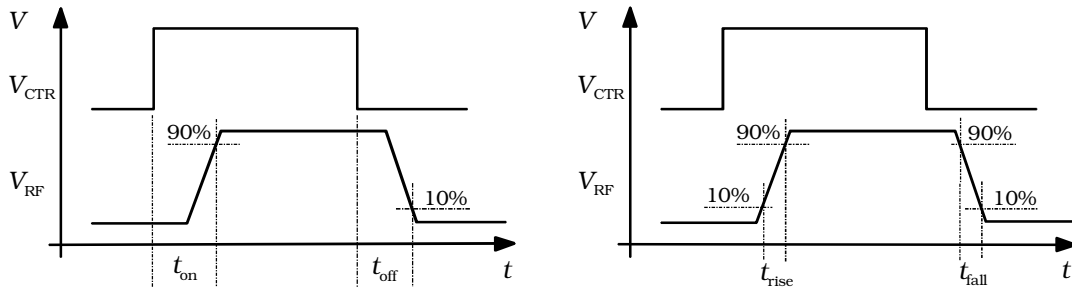
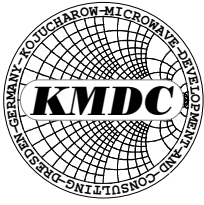


Fig. 1 Definition of timing parameters: on time t_{on} , off time t_{off} , rise time t_{rise} , fall time t_{fall}



Typical Performance Characteristics

Conditions: $V_{cc}=12\text{ V}$, $V_{CTR}=0/5\text{V}$, $T=23^\circ\text{C}$, input at common port J0

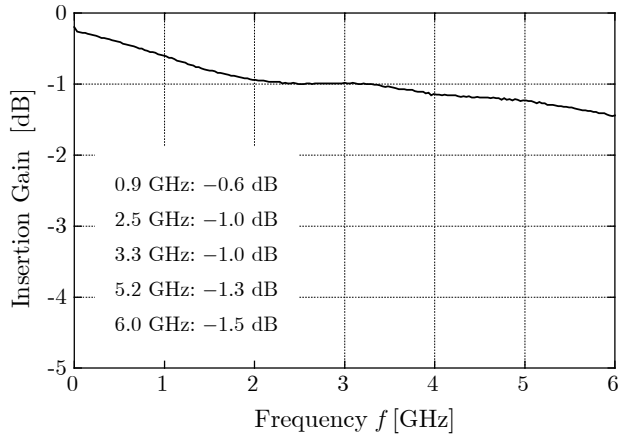


Fig. 2 Typical insertion gain vs. frequency, common port J0 to selected port

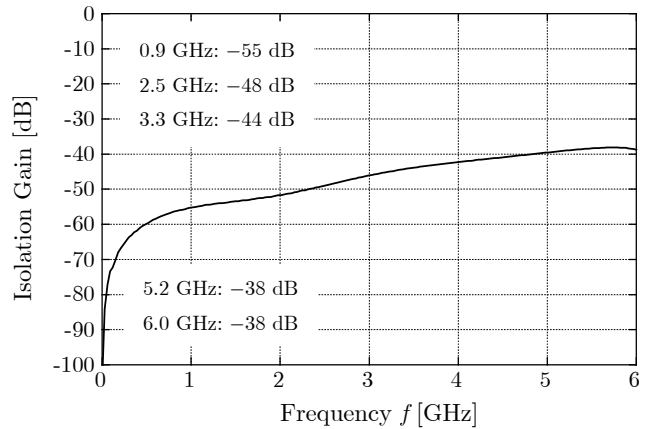


Fig. 3 Typical isolation vs. frequency, common port J0 to not selected port

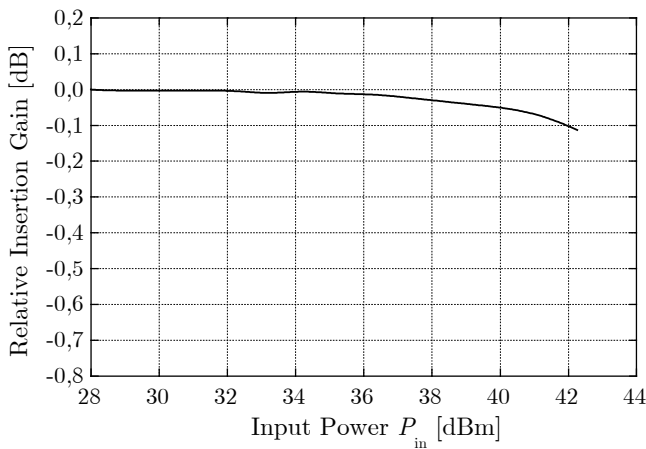


Fig. 4 Typical relative gain vs. input power, test frequency 2.7 GHz

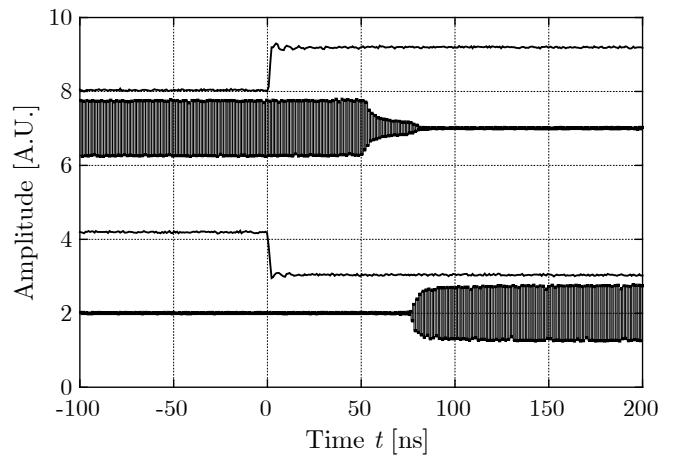
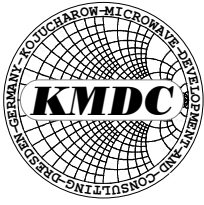


Fig. 5 Typical timing characteristics, control signal and RF waveform below, test frequency $f=0.2\text{ GHz}$, output J1



Mechanical Construction

The following general mechanical setup is used for the module.

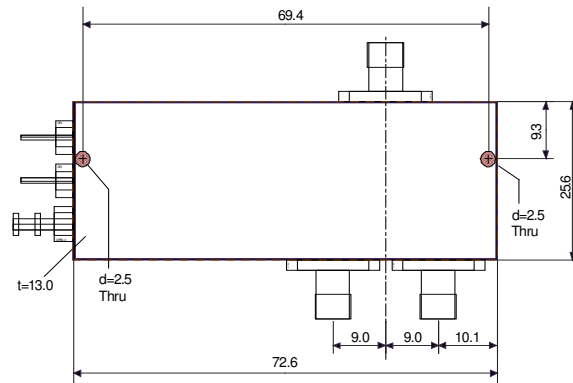


Fig. 6 Mechanical configuration, milled aluminium enclosure, feedthru pins, ground pin, mounting holes, SMA (f) ports

The approx. dimensions are 72.6 x 25.6 x 13 mm³ plus connectors.

Order Information

Please specify:

- K-SW2-6G-50-1 for standard frequency range and control mode
- K-SW2-6G-50-1/X for custom design, specify requested modification