

KS12D2-50
 DPDT, Reflective
 DC – 12 GHz



Description:

The K12D2-50 is a Reflective DPDT FET Switch supplied in a 4-port hermetic leadless microwave surface mount package. The high linearity and isolation of this switch coupled with it's fast switching speed and low power consumption makes it ideal for high performance commercial and high reliability applications where optimum performance is required.



Features:

- Broadband operation from DC – 12 GHz
- High isolation: 45 dB to 8 GHz
- High IP3: +49 dBm typical
- Fast switching speed: 6 nS typical
- Surface mount hermetic package
- Capable of meeting MIL-STD requirements for Defense and Space applications

Operating Conditions:

Characteristic	Min Value	Max Value
RF Input Power (RF in)		+33 dBm
Control Voltage Low (Vc Low)	-1V	+0.2V
Control Voltage High (Vc High)	-7V	-3V
Operating Temperature (Top)	-55 °c	+125 °c
Storage Temperature (Tst)	-65 °c	+150 °c

Electrical Specification at 25 °c (Vc Low = 0:Vc High = -5V)

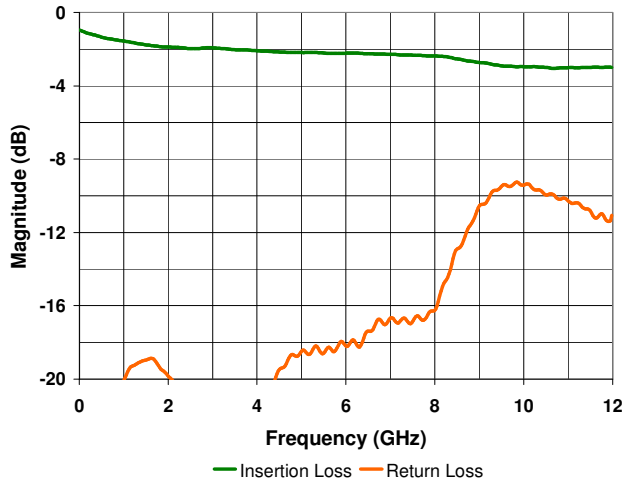
Parameter	Condition	Min	Typ	Max	Units
Insertion Loss	DC - 4.0 GHz		1.8	2.5	dB
	DC - 8.0 GHz		2.2	3.0	dB
	DC - 12.0 GHz		3.0	3.5	dB
Isolation	DC - 8.0 GHz	40	45		dB
	DC - 12.0 GHz	27	35		dB
VSWR (I/O)	DC - 8.0 GHz		1.3:1	1.5:1	
	DC - 12.0 GHz		1.9:1	2.2:1	

Operating Characteristics at 25 °c

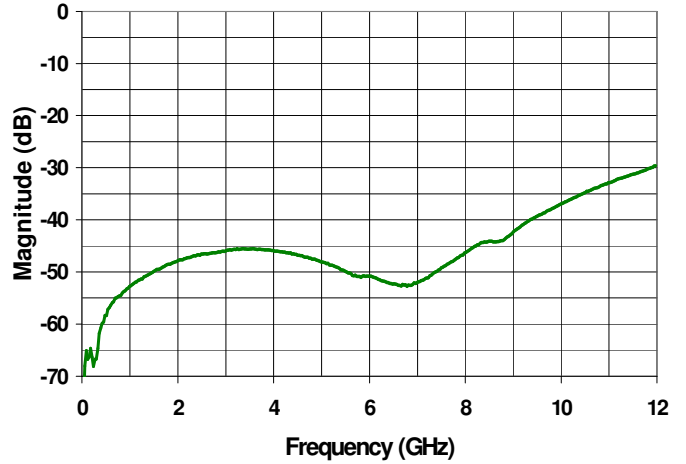
Parameter	Condition	Min	Typ	Max	Units
Switching	Rise/Fall (10/90% or 90/10%)		3		ns
	On/Off (50% Ctrl to 90/10% RF)		6		ns
	Video Feedthru		30		mV
1dB Compression	Frequency > 0.5GHz	29	32		dBm
	Frequency < 0.5GHz	18	22		dBm
Note: Input Power @ Vctrl High = -5V					
3 rd Order Intercept	Frequency > 0.5GHz	46	49		dBm
	Frequency < 0.5GHz	32	35		dBm
Note: Two-tone Input Power = +13dBm					
Current Consumption	Vctrl High = -7V		10	100	µA

Typical Performance Data

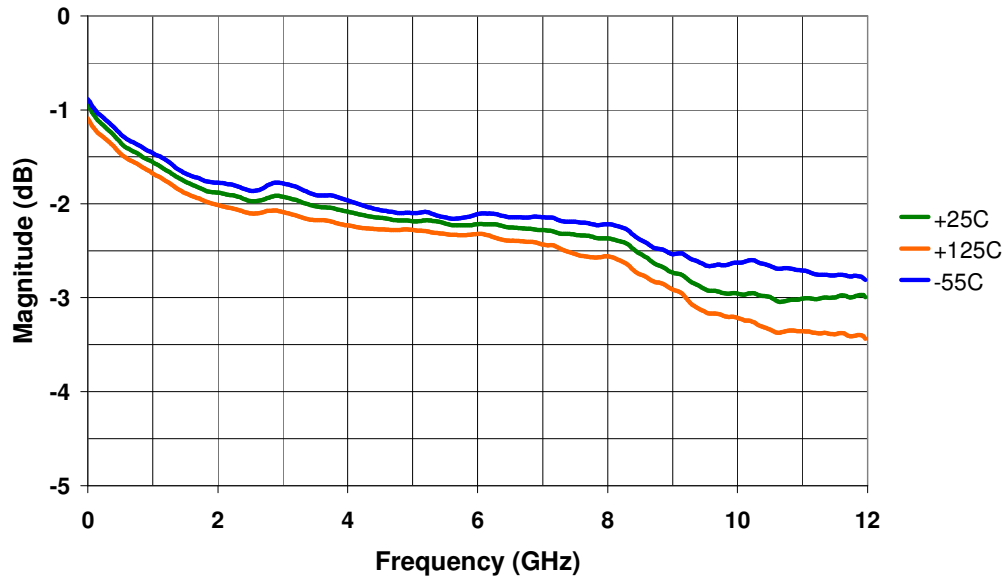
Insertion Loss



Isolation

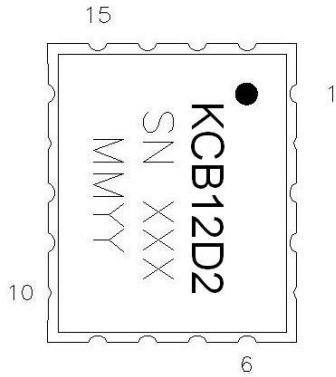


Insertion Loss vs. Temperature



IL Temp. Coef.
 $T_c = 0.0035 \text{ dB/}^\circ\text{C}$

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Pin Out

Pin	Des	Pin	Des
1	GND	10	J4
2	J1	11	GND
3	GND	12	GND
4	GND	13	J2
5	J3	14	GND
6	GND	15	GND
7	B3	16	B2
8	B4	17	B1
9	GND	18	GND

Truth Table

B1	B2	B3	B4	Path
- 5	0	- 5	0	J1-J3
- 5	0	0	- 5	J1-J4
0	- 5	- 5	0	J2-J3
0	- 5	0	- 5	J2-J4



Electrostatic Sensitive Device.
Proper ESD Precaution should
be used when handling device.