1. DESCRIPTION

The XA17-G4KB is a single-pole, double-throw switching IC. The internal circuit structure is simple, the recommended operating frequency of the IC is 200MHz- 3.15GHz, and the switching IC is controlled by a single power supply, very low insertion loss when the switch is turned on.

The XA17-G4KB is available in a 6-pin ultra-small SOT-363 package for high density surface mount applications.

2. FEATURES

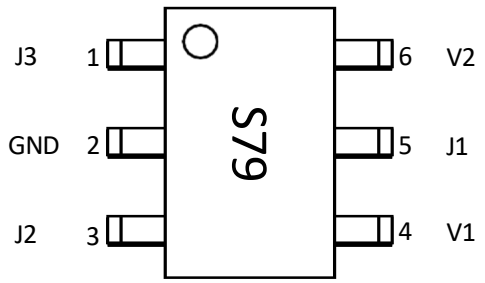
- IP1dB = +30dBm @VC=3.0V (Typical)
- Frequency range: 200MHz – 3.15GHz
- IP3 = +43dBm @VC=3.0V (Typical)
- Low insertion loss:
- SOT-363 6PIN ultra-small package

3. APPLICATIONS

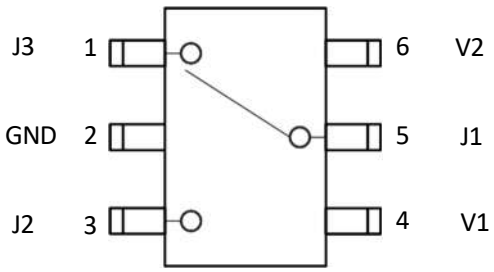
- Conventional Medium Power Switching Applications
- Industrial radios
- Smart Home
- Applications with transceiver systems that require switching

4. PIN CONFIGURATIONS AND FUNCTIONS

XA17-G4KB



(TOP VIEW)

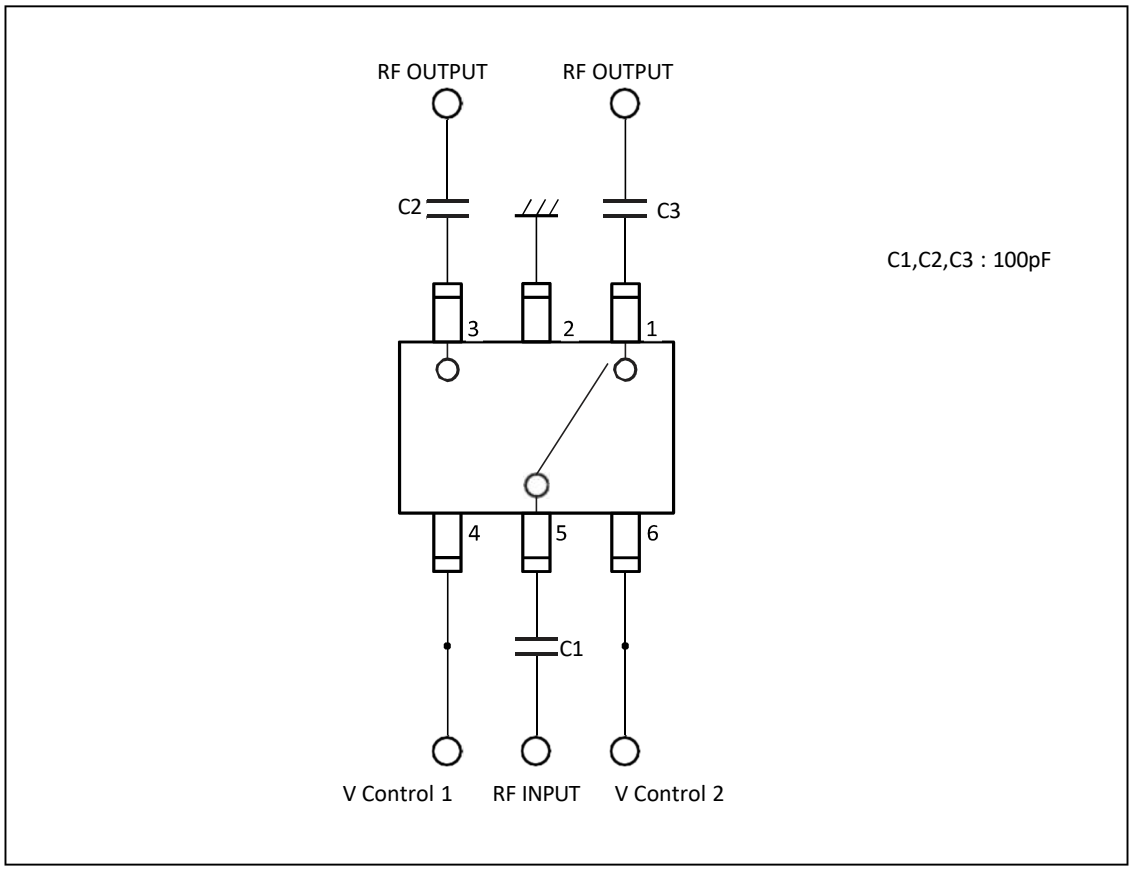


(TOP VIEW)

Pin Functions

Pin	Function	Description
1	J3	RF port, external isolation capacitor required for use
2	GND	Ground potential
3	J2	RF port, external isolation capacitor required for use
4	V1	DC Control Voltage
5	J1	RF port, external isolation capacitor required for use
6	V2	DC control voltage

5. APPLICATION CIRCUIT DIAGRAMS



True Value Table

(Level voltage: High: 1.8V-3.0V, Low: 0V-0.2V)

Vcont1	Vcont2	J1- J2	J1-J3
Low	High	Insertion Loss	Isolation
High	Low	Isolation	Insertion Loss

NOTES:

[1] A DC coupling capacitor with a capacitance of 100 pF or less is recommended when using a frequency of 0.5 GHz or higher, and a capacitor with a capacitance of 1000 pF is recommended when using a frequency of less than 0.5 GHz.

[2] Actual values will vary depending on the frequency and bandwidth used, so select a capacitor with the appropriate capacitance for the conditions of use.

6. SPECIFICATIONS

6.1. Absolute Maximum Ratings

SYMBOL	PARAMETER	MIN	MAX	UNIT
V_{CONT}	Switching Control Voltage		3.8	V
P_{IN}	Input power	-	+35	dBm
T_A	Operating ambient temperature	-40	+85	℃
T_{stg}	Storage temperature	-55	+150	℃

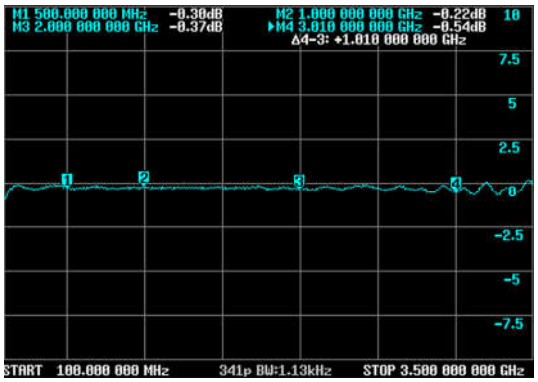
6.2. Electrical Characteristics

(T_A = +25℃, Vcont (H) = 3.0 V, Vcont (L) = 0 V, DC Isolation Capacitors = 100 pF)

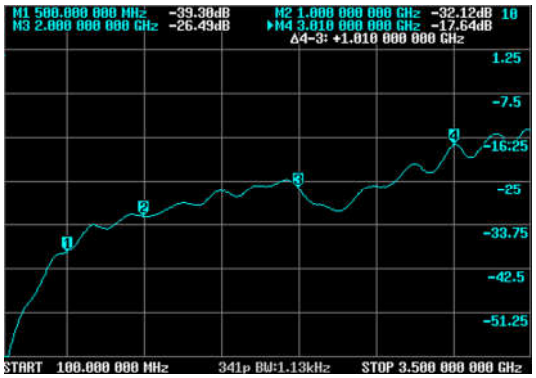
PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Insertion Loss (IL)	0.2-1.0GHz		0.3	0.4	dB
	1.0-2.0GHz		0.3	0.5	dB
	2.0-3.15GHz		0.5	0.6	dB
Isolation (ISO)	0.2-1.0GHz	25	32	---	dB
	1.0-2.0GHz	23	30		
	2.0-3.15GHz	18	23		
Input Return Loss (RL)	0.2-1.0GHz	15		20	dB
	1.0-2.0GHz	15		20	dB
	2.0-3.15GHz	14		17	dB
Switching time	10% to 90%or 90%to 10%	---	50	---	ns
Input 1dB Compression Point (IP1dB)	Vctrl=3V @1500MHz	---	30	---	dBm
Thermal resistance			25		℃/W
Control voltage low	Vctrl_L	-0.2	0	0.2	V
Control voltage high	Vctrl_H	1.8	3.0	3.6	V
Switch Control Current	Vctr_Idd @ | Vctrl_H- Vctrl_L |≤ 3.6 V	---	--	25	uA

6.3. Typical characteristic

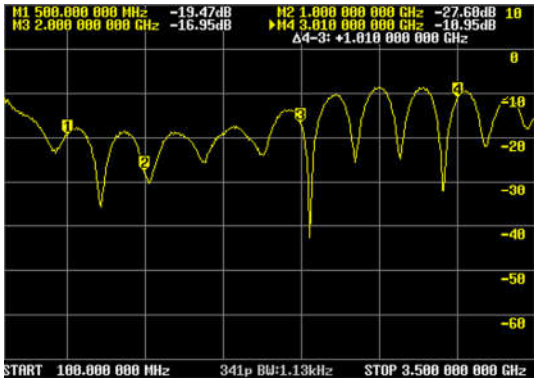
(T_A = +25°C, Vcont (H) = 3.0 V, Vcont (L) = 0 V, DC Isolation Capacitors = 100 pF)



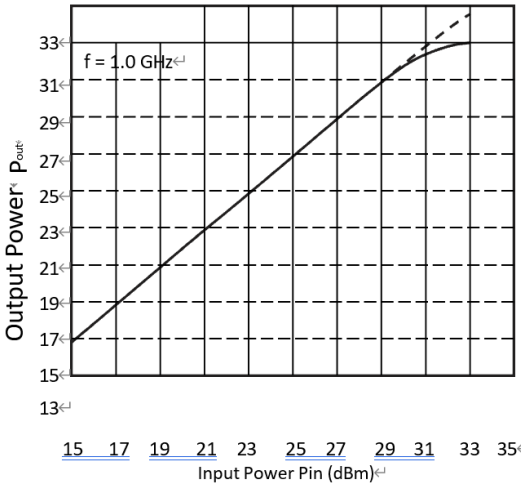
INPUT – OUTPUT INSERTION LOSS vs. FREQUENCY



INPUT – OUTPUT ISOLATION vs. FREQUENCY

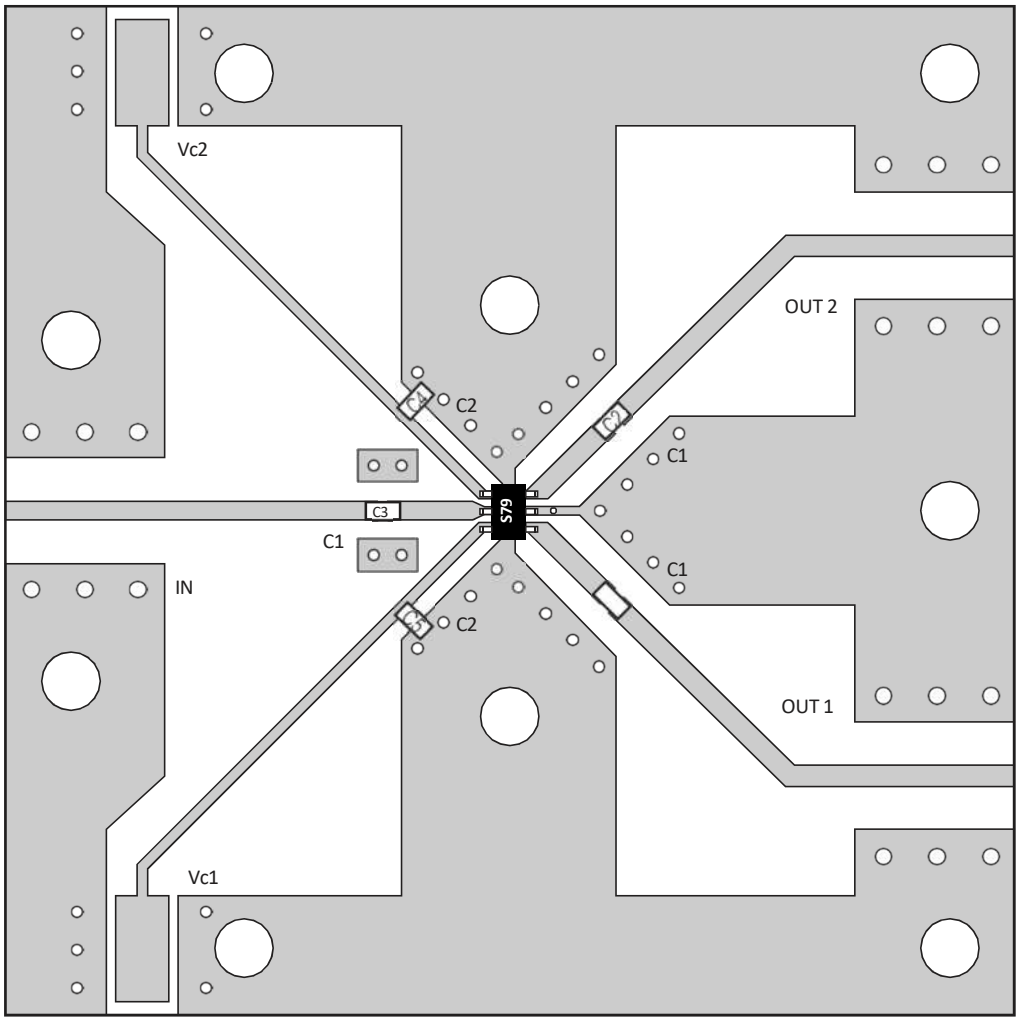


INPUT RETURN LOSS vs. FREQUENCY



OUTPUT POWER vs. INPUT POWER

7. Evaluation Board LAYOUT

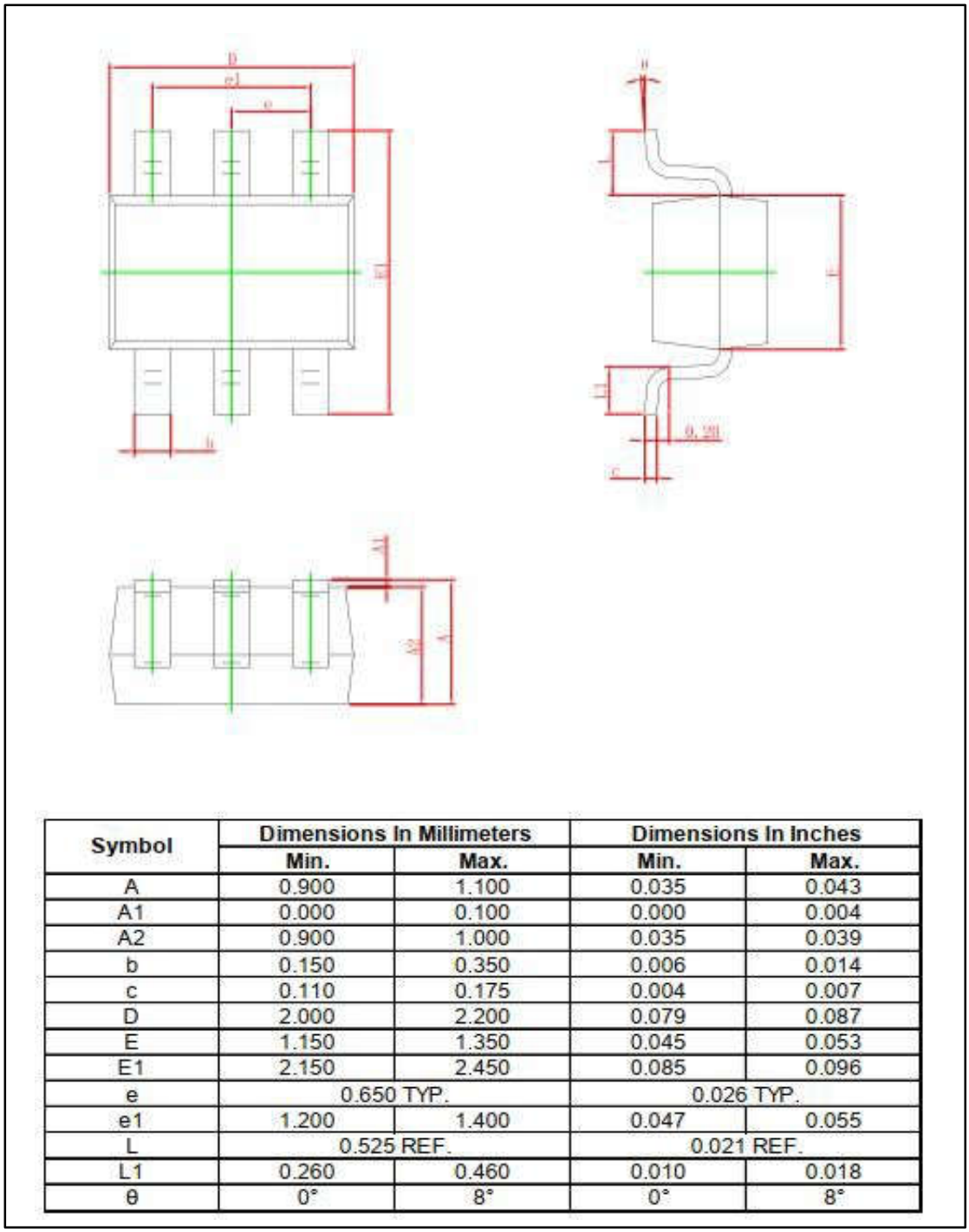


8. ORDERING INFORMATION

Ordering Information

Part Number	Device Marking	Package Type	Body size (mm)	Temperature (°C)	MSL	Transport Media	Package Quantity
XA17-G4KB	S79	SOT363	2.10 * 1.25	-40 to +85	MSL3	T&R	3000

9. DIMENSIONAL DRAWINGS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.110	0.175	0.004	0.007
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°