

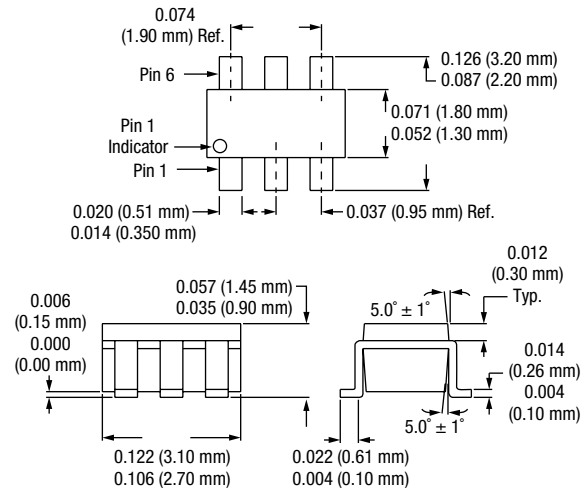
**PRELIMINARY DATA SHEET**

# SKY12324-73: GaAs IC 2 Bit Digital Attenuator 4 dB LSB 0.5–3 GHz

**Features**

- 4 dB LSB steps to 12 dB
- Single positive control voltage per bit
- Low insertion loss
- Low cost SOT-6 plastic package

**SOT-6**



**Description**

The SKY12324-73 is a 2 bit, GaAs IC FET digital attenuator in SOT-6 package. This attenuator has up to 12 dB total attenuation. The attenuation requires single positive control voltage per bit. The SKY324-73 is ideally suited where high attenuation, low insertion loss and low intermodulation products are required. Typical applications include cellular infrastructure, wireless data and wireless local loop gain level control circuits.

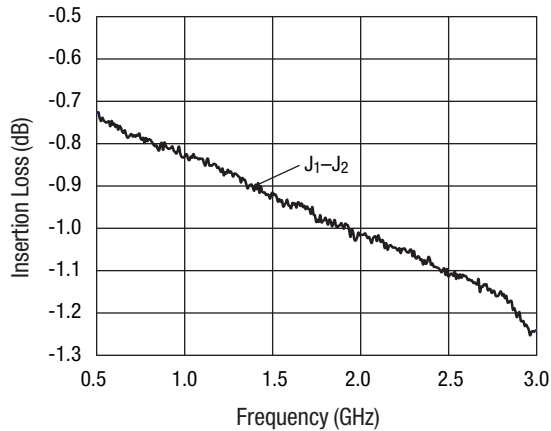
**Electrical Specifications at 25 °C (0, +3 V)**

Parameter	Frequency	Min.	Typ.	Max.	Unit
Insertion loss	0.5–1.0 GHz		0.9	1.0	dB
	1.0–2.0 GHz		1.0	1.2	dB
	2.0–2.5 GHz		1.2	1.3	dB
	2.5–3.0 GHz		1.3	1.4	dB
Attenuation range			12		dB
Attenuation accuracy	0.5–1.0 GHz	± (0.2 + 3% of attenuation setting in dB)			
	1.0–3.0 GHz	± (0.3 + 5% of attenuation setting in dB)			
VSWR (insertion loss state)	0.5–3 GHz		1.2:1	1.4:1	
VSWR (attenuation state)	0.5–3 GHz		1.3:1	1.4:1	

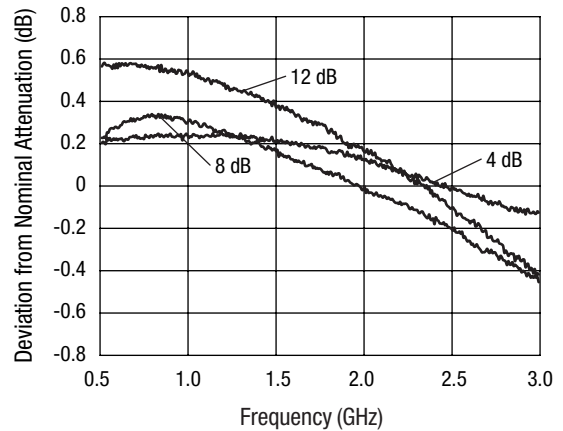
**Operating Characteristics at 25 °C (0, +3 V)**

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching characteristics	Rise, fall (10/90% or 90/10% RF)			40		ns
	On, Off (50% CTL to 90/10% RF)			100		ns
	Video feedthru			50		mV
Input power for 1dB compression	V <sub>S</sub> = +3 V	0.9 GHz		30		dBm
Intermodulation intercept point (IP3)	Two-tone +15 dBm	1.0 GHz		43		dB
Control voltages	V <sub>LOW</sub> = 0 to 0.2 V @ 20 uA max. V <sub>HIGH</sub> = +3 V 2 100 uA max. to +5 V @ 200 uA max.					

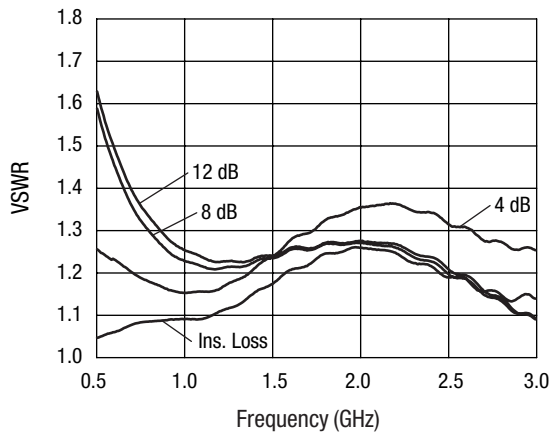
### Typical Performance Data (0, +3 V)



Insertion Loss vs. Frequency



Attenuation Accuracy vs. Frequency



VSWR vs. Frequency

### Absolute Maximum Ratings

Characteristic	Value
RF input power	1 W > 500 MHz 0/8 V
Supply voltages	+8 V
Control voltages	-0.2 V, +8 V
Operating temperature	-40 °C to +85 °C
Storage temperature	-65 °C to +150 °C

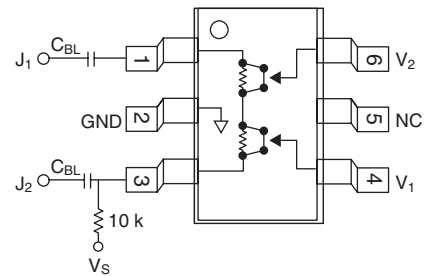
Note: Exceeding these parameters may cause irreversible damage.

### Truth Table

V <sub>1</sub> (8 dB)	V <sub>2</sub> (4 dB)	J <sub>1</sub> -J <sub>2</sub>
High	High	Reference I.L.
High	Low	4 dB
Low	High	8 dB
Low	Low	12 dB max. attenuation

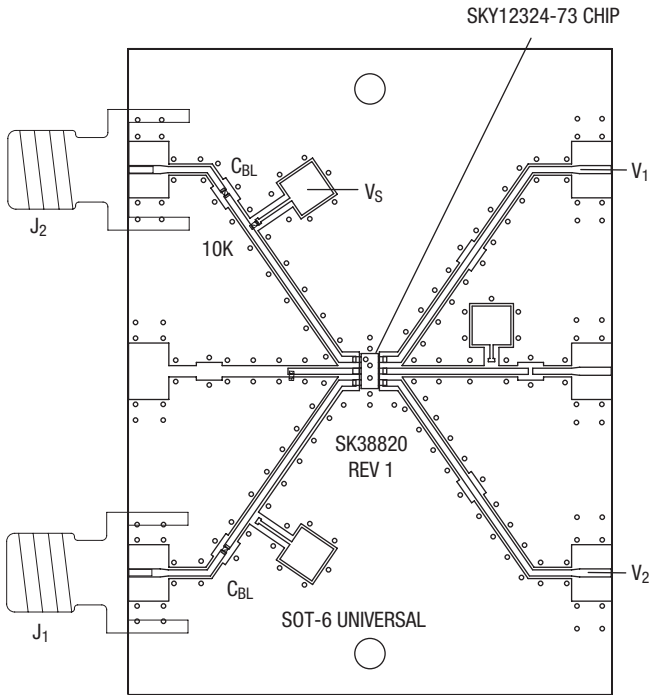
V<sub>HIGH</sub> = +3 to +5 V (V<sub>S</sub> = V<sub>HIGH</sub> ± 0.2 V).

### Pin Out (Top View)



DC blocking capacitors (C<sub>BL</sub>) must be supplied externally for positive voltage operation. C<sub>BL</sub> = 47 pF for operation > 500 MHz.

**Pin Out (Top View)**



**Suggested Land Pattern**

