

KCB805

Broadband SPDT

DC – 10 GHz



Features

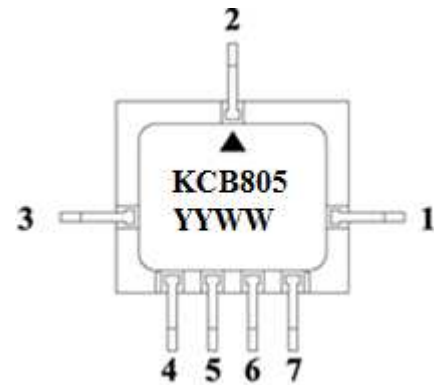
- Wideband frequency range: DC to 10 GHz
- Isolation: 55dB @ 2 GHz
- High Reliability Class B and S Screening Available
- See Page 3 for Hi –Rel Ordering Details

Description

The KCB805 is a GaAs FET broadband, high performance, High Isolation switch.

The KCB805 uses Hermetic Surface-Mount Technology (SMT) for Defense and Satellite application.

The device can be supplied and tested to the screening requirements of MIL-PRF-38535 Class B and S, in addition to the required QCI.



1	RF 2
2	RF C
3	RF 1
4	GND
5	B
6	A
7	GND

Electrical Characteristics (+25°C)

Parameter	Conditions	Min.	Typ.	Max.	Units
Insertion Loss	DC – 2.0 GHz			1.5	dB
	DC – 4.0 GHz			2.0	dB
	DC – 8.0 GHz			2.5	dB
	DC – 10.0 GHz			3.0	dB
Return Loss (I/O)	DC – 2.0 GHz			1.4:1	dB
	DC – 4.0 GHz			1.5:1	dB
	DC – 8.0 GHz			1.8:1	dB
	DC – 10.0 GHz			2.0:1	dB
Isolation	DC – 2.0 GHz	55			dB
	DC – 4.0 GHz	48			dB
	DC – 8.0 GHz	30			dB
	DC – 10.0 GHz	25			dB
Input Power for 1 dB Output Compression V _{ctl} = -5V	> 500 MHz		+24		dBm
Third Order Intercept Point (IP3) V _{ctl} = 0V/5V, 0.5 - 2.0 GHz	Two Tone input power = 13 dBm per tone > 500 MHz		+50		dBm
Switching Characteristics Rise, Fall	10/90% or 90/10% RF		3		nS
	50%CTL to 90/10% RF		6		nS

KCB805

Low Loss SPDT

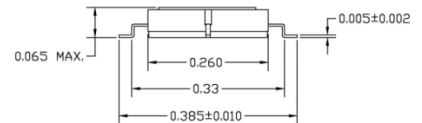
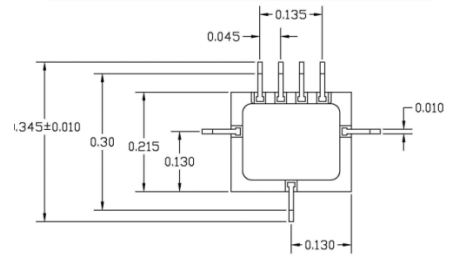
DC – 10 GHz



Absolute Maximum Ratings

Characteristic	Min Value	Max Value	Units
Control Voltages	-8.0	+0.8	Volts
RF Input Power		+33	dBm
Storage Temperature	-65	+150	° C
Operating Case Temp	-55	+125	° C

Outline Drawing



Truth Table / Control Voltages

Control Input		Signal Path State	
A	B	RFC to RF1	RFC to RF2
High	Low	ON	OFF
Low	High	OFF	ON

State	Bias Conditions
Low	-1.0 V to +0.8 V
High	-8V to -3V

Screening Flow

Test Inspection	MIL – STD -883		Requirement	
	Method	Condition	Class B	Class S
Wafer Lot Acceptance	5007		N/A	Per Wafer Lot
Non-Destructive Bond Pull	2023		Process under Statistical Control	Process under Statistical Control
Internal Visual	2010	A= Class S B = Class B	100%	100%
Temperature Cycle	1010	C	100%	100%
Acceleration	2001	E (Y1 only)	100%	100%
PIND	2020	A (5 Cycles)	N/A	100%
Serialization	Per Product Specification		N/A	100%
Radiographic	2012		N/A	100%
Electrical Test	Per Product Specification	+25°C	100%	100%
Burn In	1015	A	100% 80 Hours @ 150°C	100%
Final Electrical	Per Product Specification	+25°C	100%	100%
Group A Electrical	Per Product Specification	-55°C + 125°C	45/0	45/0
Seal				
Fine Leak	1014	A	100%	100%
Gross Leak		C		
External Visual	2009		100%	100%

Ordering Information

KCB Solutions Part Number	Screening Level
KCB805C	Unscreened
KCB805B	Class B Screening
KCB805S	Class S Screening