



S-BAND SPDT MMIC SWITCH

T-51-11
UPG107B
UPG107P

DESCRIPTION

UPG107B is an S-Band SPDT (Single Pole Double Throw) GaAs FET switch which was developed for radar application. The device can operate from DC to 3.4 GHz. It is housed in an 8 pin high reliability ceramic flat package that is easy to install. It can be used in wide-band switching applications.

FEATURES

- **WIDE OPERATING FREQUENCY BAND:**
DC to 3.4 GHz
- **SWITCHING SPEED 5 ns TYPICAL**
- **HERMETICALLY SEALED PACKAGE ASSURES HIGH RELIABILITY**

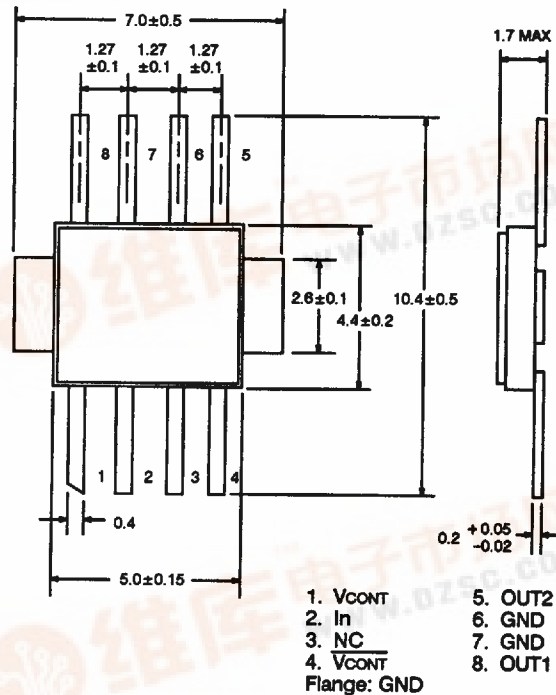
ABSOLUTE MAXIMUM RATINGS (TA = 25°C)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V _{CONT}	Control Voltage	V	-6 to +0.6
P _{IN}	Input Power	dBm	+33
P _{T*}	Total Power Dissipation	W	1.5
T _c	Operating Case Temperature Range	°C	-65 to +125
T _{STG}	Storage Temperature	°C	-65 to +175

*T_c ≤ 125°C

OUTLINE DIMENSIONS (Units in mm)

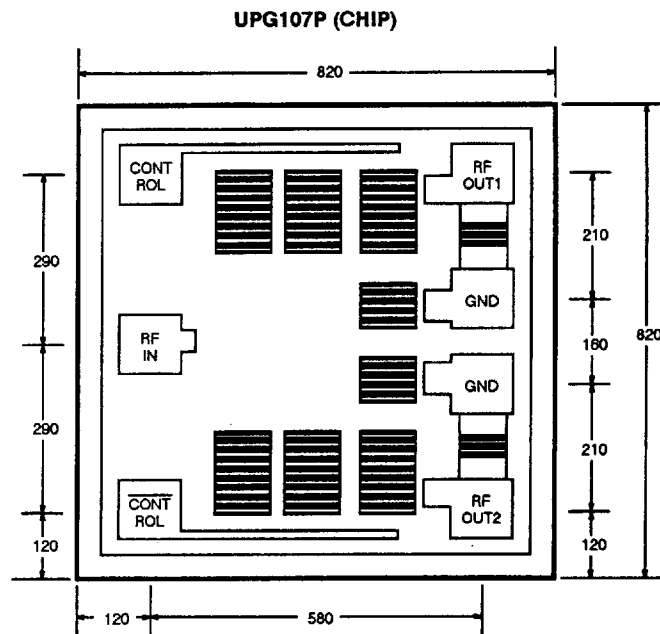
OUTLINE BF08



ELECTRICAL CHARACTERISTICS (TA = 25°C)

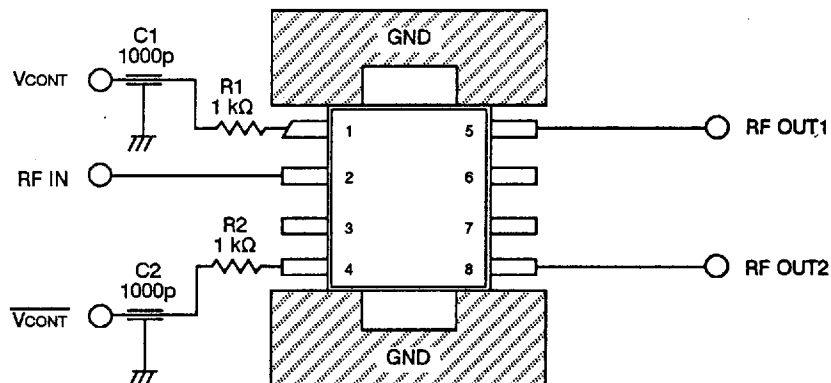
PART NUMBER PACKAGE OUTLINE				UPG107B BF08		
SYMBOLS	CHARACTERISTICS	TEST CONDITIONS	UNITS	MIN	TYP	MAX
L _{NS}	Insertion Loss	V _{CONT} = 0 V V _{CONT} = -5 V or V _{CONT} = -5V V _{CONT} = 0 V f = DC to 3.4 GHz	dB		1.4	1.7
R _{LIN}	Input Return Loss		dB	14	17	
R _{LOUT(T)}	Output Return Loss (through)		dB	10	13	
R _{LOUT(O)}	Output Return Loss (open)		dB	8	9	
P _{O(1dB)}	Output Power at 1 dB Gain Compression Point		dBm		+25	
t _{sw}	Switching Speed		ns		5	
ISL	Isolation		f = 3.4 GHz	dB	26	30
		f = 1 GHz	dB	35	40	

OUTLINE DIMENSIONS (Units in μm)



Bonding Area: $100 \times 100 \mu\text{m}$

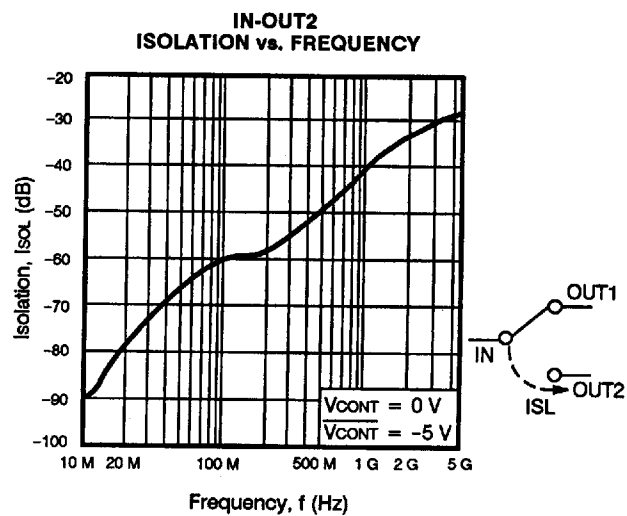
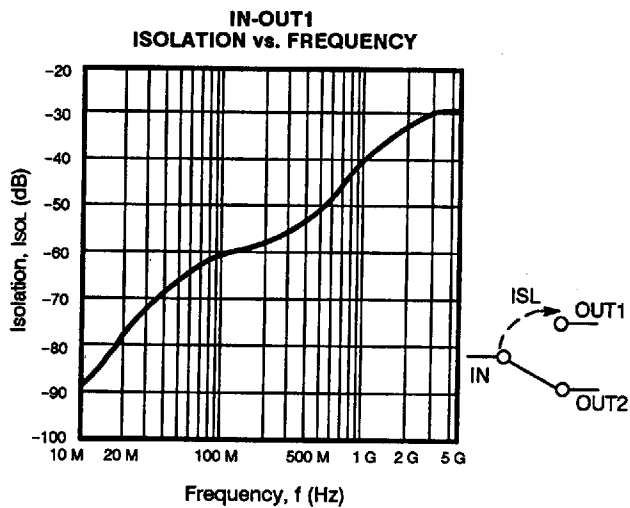
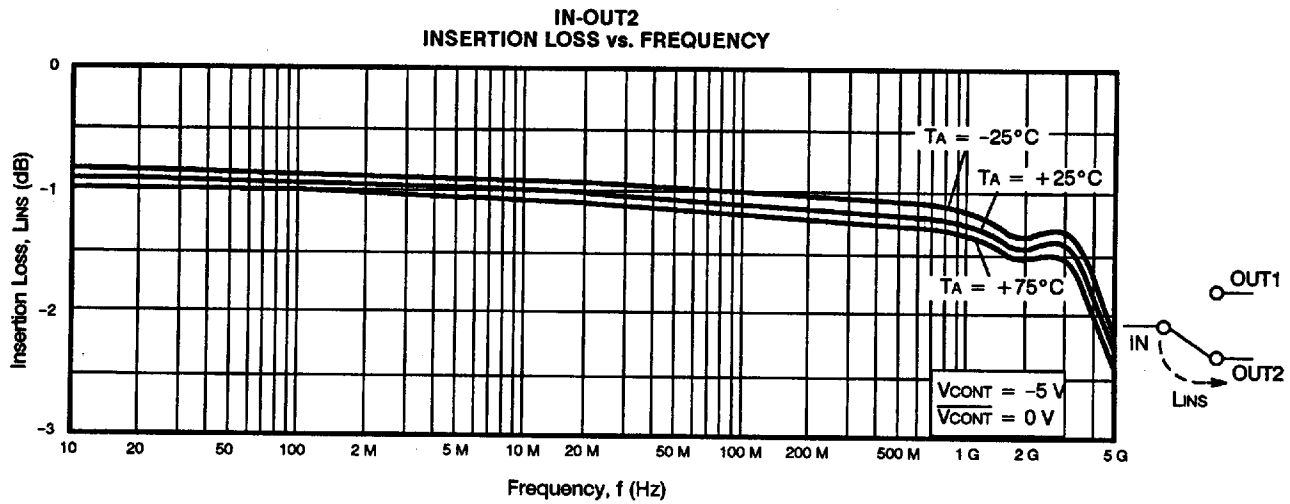
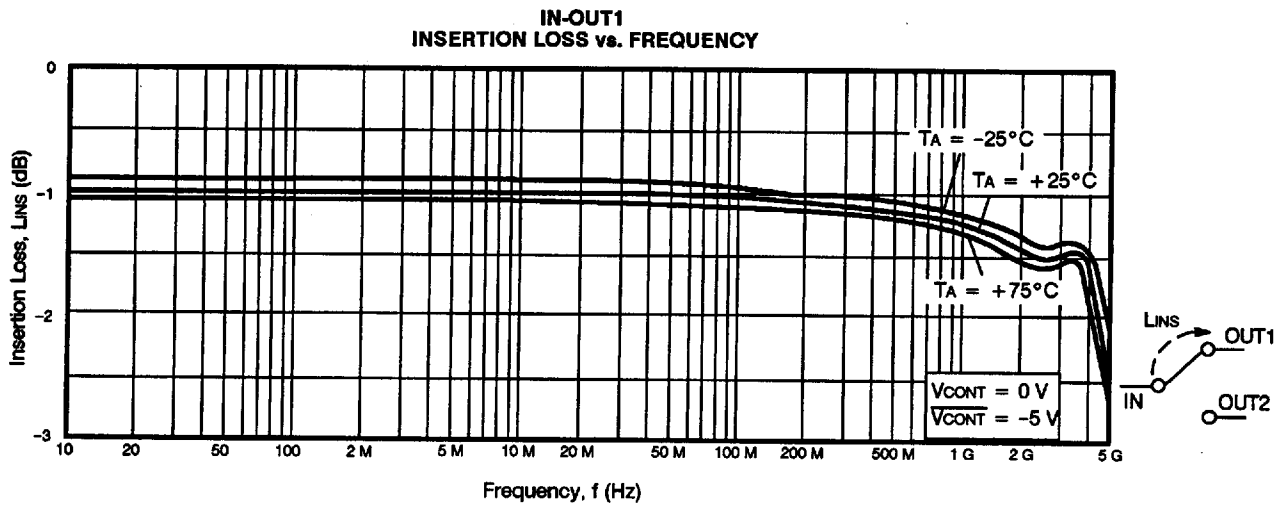
APPLICATION CIRCUIT



Notes:

1. C1 and C2 are de-coupling capacitors
2. R1 and R2 are chip resistors. (They should be mounted as close to the package leads as possible.)

TYPICAL PERFORMANCE CHARACTERISTICS ($T_A = 25^\circ\text{C}$)



TYPICAL PERFORMANCE CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

