



**ZARLINK**  
SEMICONDUCTOR

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# SP8607 600MHz ÷ 2

The SP8607 is an emitter coupled logic divider which features ECL10K compatible outputs when used with external pulldown resistors. The inputs are AC coupled.

## FEATURES

- ECL Compatible Outputs
- AC-Coupled Inputs (Internal Bias)

## QUICK REFERENCE DATA

- Supply Voltage:  $-5.2V$
- Power Consumption: 80mW
- Temperature Range:
  - $-55^{\circ}C$  to  $+125^{\circ}C$  (A Grade)
  - $-30^{\circ}C$  to  $+70^{\circ}C$  (B Grade)

## ABSOLUTE MAXIMUM RATINGS

Supply voltage, $V_{EE}$	$-8V$
Output current	10mA
Storage temperature range	$-65^{\circ}C$ to $+150^{\circ}C$
Max. junction temperature	$+175^{\circ}C$
Max. clock input voltage	2·5V p-p

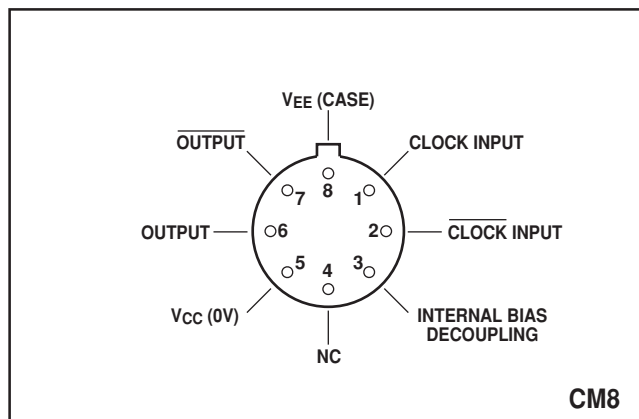


Fig. 1 Pin connections - bottom view

## ORDERING INFORMATION

SP8607 A CM  
SP8607 B CM  
SP8607 AC CM

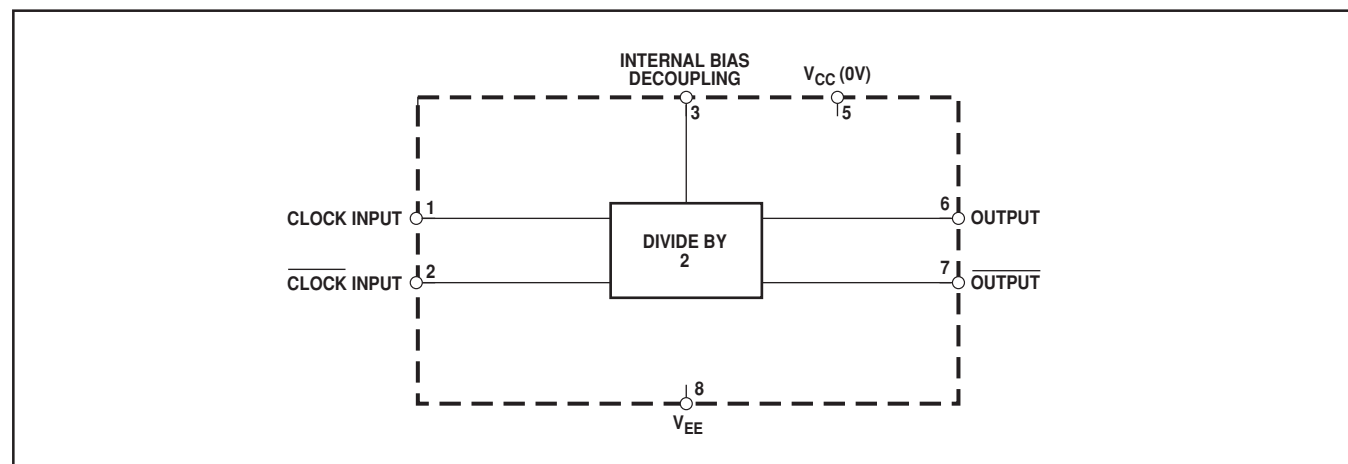


Fig. 2 Functional diagram

ELECTRICAL CHARACTERISTICS

Unless otherwise stated, the Electrical Characteristics are guaranteed over specified supply, frequency and temperature range

Supply voltage,  $V_{CC} = 0V$ ,  $V_{EE} = -5.2V \pm 0.25V$

Temperature,  $T_{AMB} = -55^{\circ}C$  to  $+125^{\circ}C$  (A Grade),  $-30^{\circ}C$  to  $+70^{\circ}C$  (B Grade)

Characteristic	Symbol	Value		Units	Conditions	Notes
		Min.	Max.			
Maximum frequency (sinewave input)	$f_{MAX}$	600		MHz	Input = 400-800mV p-p	
Minimum frequency (sinewave input)	$f_{MIN}$		40	MHz	Input = 400-800mV p-p	
Power supply current	$I_{EE}$		18	mA	$V_{EE} = -5.2V$ , outputs unloaded	
Output low voltage	$V_{OL}$	-1.8	-1.4	V	$V_{EE} = -5.2V$	3
Output high voltage	$V_{OH}$	-0.85	-0.7	V	$V_{EE} = -5.2V$	3
Minimum output swing	$V_{OUT}$	400		mV	$V_{EE} = -5.2V$	

NOTES

- 1. The temperature coefficients of  $V_{OH} = +1.63mV/^{\circ}C$ , and  $V_{OL} = +0.34mV/^{\circ}C$  but these are not tested.
- 2. The test configuration for dynamic testing is shown in Fig.5.
- 3. Tested at  $25^{\circ}C$  only.

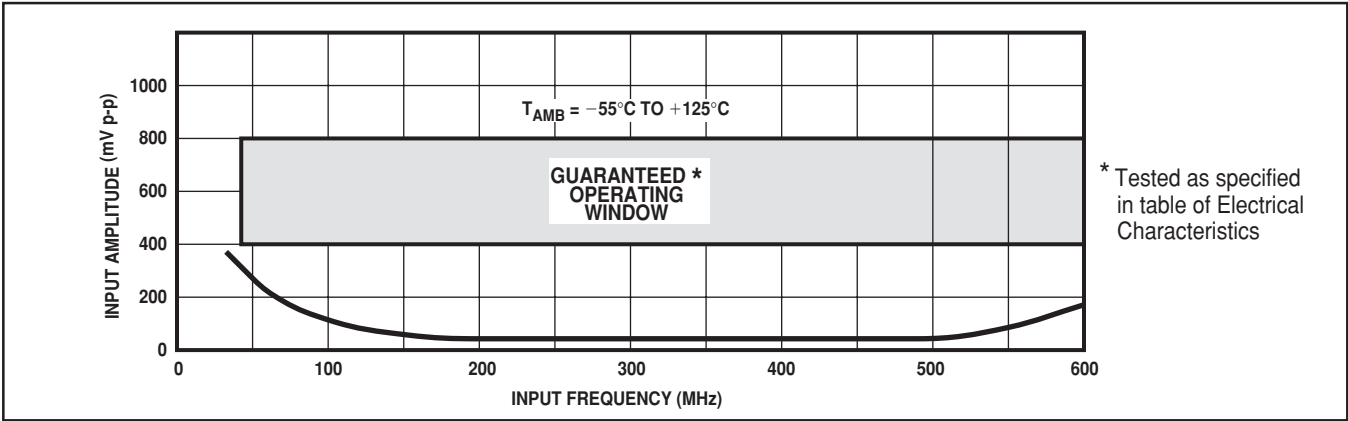


Fig. 3 Typical input characteristic of SP8607A

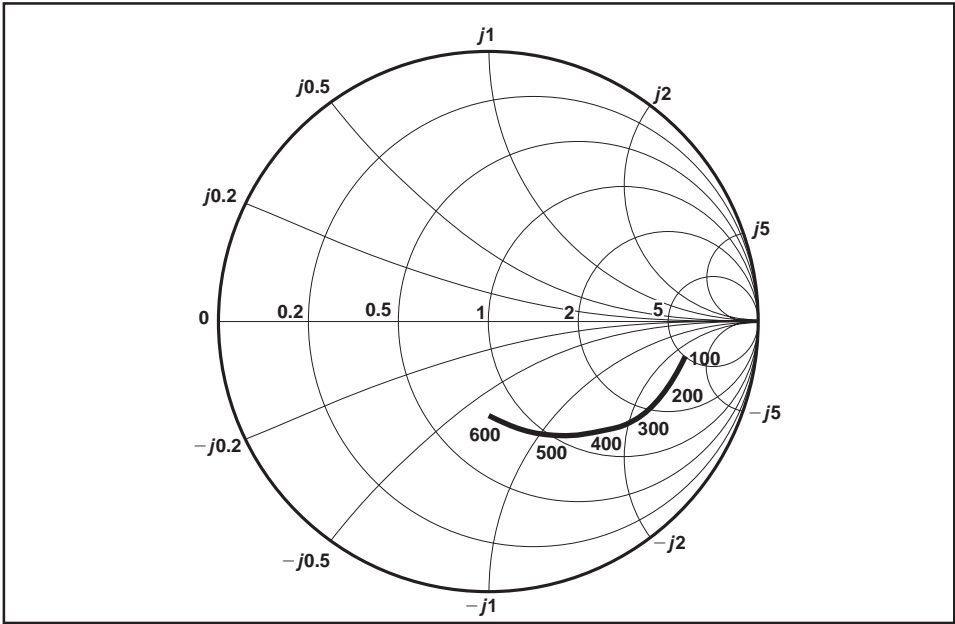


Fig. 4 Typical input impedance. Test conditions: supply voltage =  $-5.2V$ , ambient temperature =  $25^{\circ}C$ , frequencies in MHz, Impedances normalised to  $50\Omega$

## OPERATING NOTES

1. The clock inputs (pins 1 and 2) can be driven single ended or differentially and should be capacitively coupled to the signal source. The input signal path is completed by connecting a capacitor from the internal bias decoupling, pin 3, to ground.  
 2. In the absence of a signal the device will self-oscillate. If this is undesirable, it may be prevented by connecting a  $15k\Omega$  resistor from the unused input to  $V_{EE}$ . This will reduce the input sensitivity by approximately 100mV.

3. The circuit will operate down to DC but slew rate must be better than  $100V/\mu s$ .

4. The outputs are compatible with ECLII. There is an internal load of  $4k\Omega$  on each output. The outputs can be interfaced to ECL10K by the addition of  $1.5k\Omega$  pulldown resistors from the outputs to  $V_{EE}$  to increase output voltage swing.

5. Input impedance is a function of frequency, See Fig. 4.

6. All components should be suitable for the frequency in use.

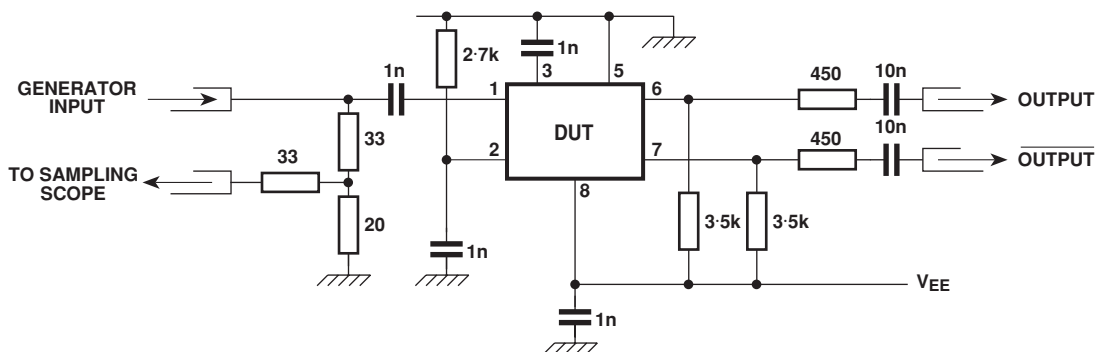


Fig. 5 Test circuit

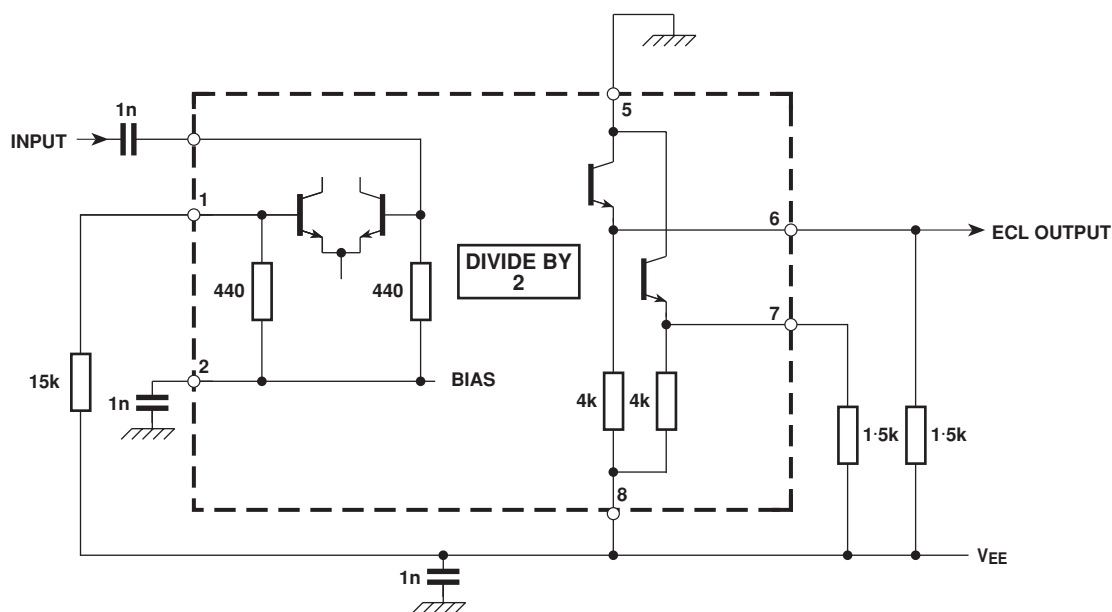
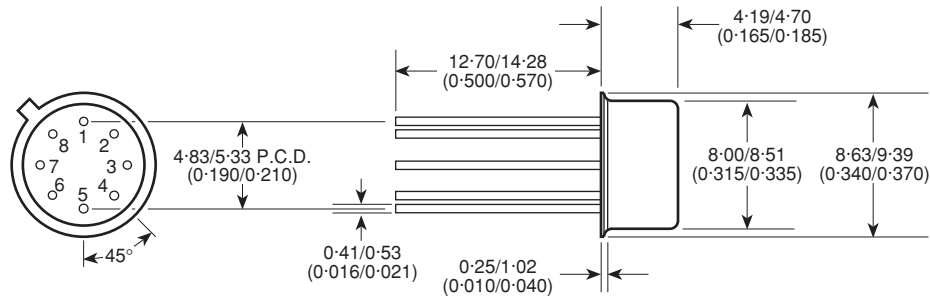


Fig. 6 Typical application showing interfacing

**PACKAGE DETAILS**

Dimensions are shown thus: mm (in).

**NOTES**

1. Controlling dimensions are inches.
2. This package outline diagram is for guidance only. Please contact your GPS Customer Service Centre for further information.

**8-LEAD METAL CAN - CM8**

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