

SP8607

600MHz ÷ 2

The SP8607 is an emitter coupled logic divider which features ECL 10K 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°C to +125°C (A Grade)
 - 30°C to +70°C (B Grade)

ABSOLUTE MAXIMUM RATINGS

Supply voltage	-8V
Output current	10mA
Storage temperature range	-55°C to +150°C
Max. junction temperature	+175°C
Max. clock I/P voltage	2.5V p-p

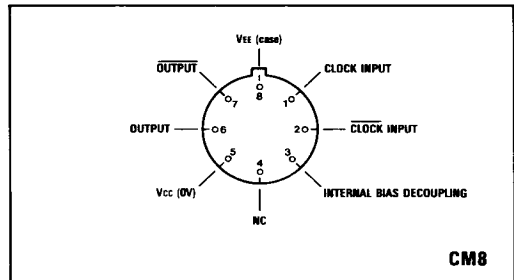


Fig.1 Pin connections - bottom view

ORDERING INFORMATION

- SP8607 A CM ✓
- SP8607 B CM ✓
- SP8607 AB CM ✓✓
- SP8607 AC CM

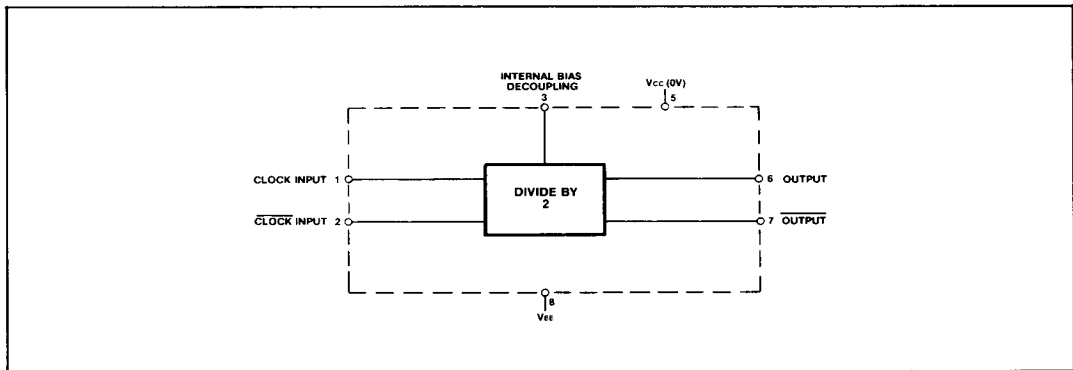


Fig.2 Functional diagram

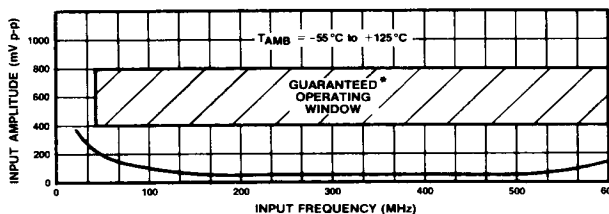
ELECTRICAL CHARACTERISTICS

Supply voltage: $V_{CC} = 0V$, $V_{EE} = -5.2V \pm 0.25V$
 Temperature: T_{amb} A Grade = $-55^{\circ}C$ to $+125^{\circ}C$
 B Grade = $-30^{\circ}C$ to $+70^{\circ}C$

Characteristic	Symbol	Value		Units	Conditions	Notes
		Min.	Max.			
Maximum frequency (sinewave input)	f_{max}	600		MHz	Input = 400-800mV p-p Input = 400-800mV p-p $V_{EE} = -5.2V$ Outputs unloaded	
Minimum frequency (sinewave input)	f_{min}		40	MHz		
Power supply current	I_{EE}		18	mA		
Output low voltage	V_{OL}	-1.8	-1.4	V	$V_{EE} = -5.2V$	Note 4
Output high voltage	V_{OH}	-0.85	-0.7	V	$V_{EE} = -5.2V$	Note 4
Minimum output swing	V_{OUT}	400		mV	$V_{EE} = -5.2V$	

NOTES

1. Unless otherwise stated the electrical characteristics shown above are guaranteed over specified supply, frequency and temperature range.
2. The temperature coefficients of $V_{OH} = +1.63mV/^{\circ}C$ and $V_{OL} = +0.34mV/^{\circ}C$ but these are not tested.
3. The test configuration for dynamic testing is shown in Fig.5.
4. Tested at $25^{\circ}C$ only.



* Tested as specified in table of Electrical Characteristics

Fig.3 Typical characteristic of SP8607A

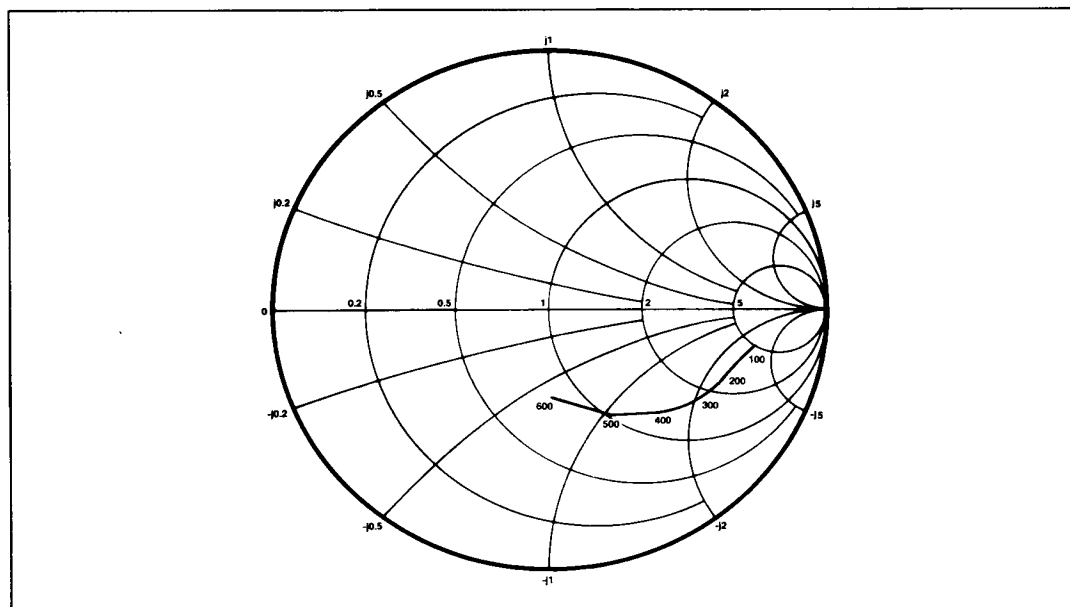


Fig.4 Typical input impedance. Test conditions: supply voltage $-5.2V$, ambient temperature $25^{\circ}C$, frequencies in MHz, impedances normalised to 50 ohms.

SP8607

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 resistor from the unused input to V_{EE} (ie pin 1 or 2 to pin 8). This causes a drop in sensitivity of about 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 ECL II. There is an internal load of 4k on each output. The outputs can be interfaced to ECL 10K by addition of a pulldown resistor of 1.5k to the outputs to increase the 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.

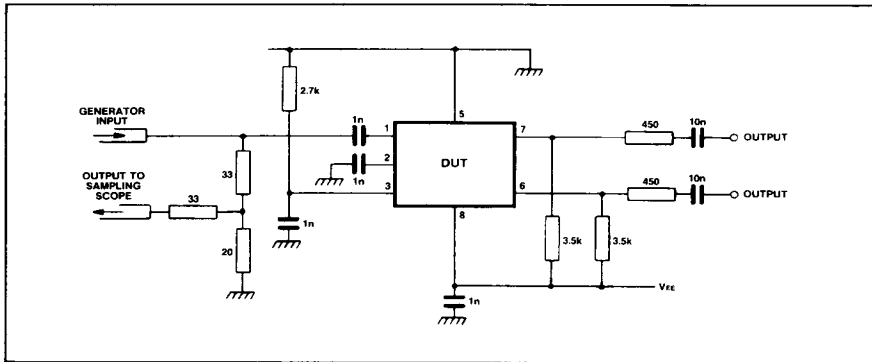


Fig.5 Test circuit

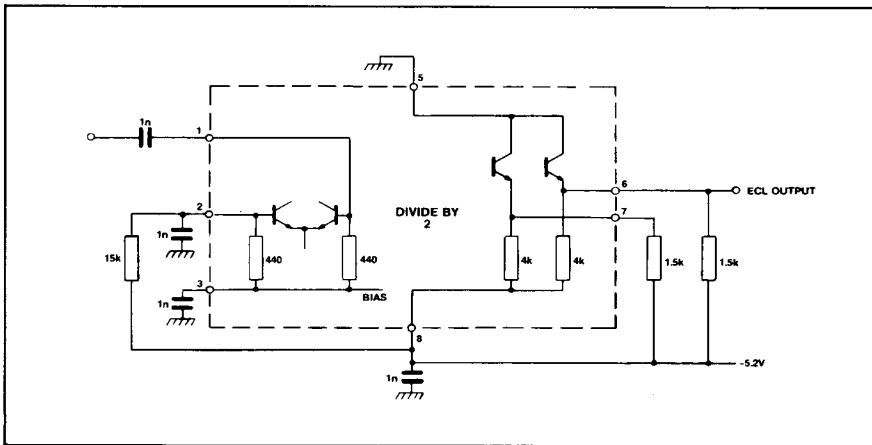


Fig.6 Typical application showing interfacing