

T-45-19-05

SP8665B 1000MHz + 10

SP8668B 1500MHz + 10

The SP8665/8 are asynchronous ECL counters which provide ECL compatible outputs. They feature an ECL compatible input inhibit which simplifies the design of frequency counters and other instrumentation.

FEATURES

- ECL Compatible Output
- AC Coupled Input
- Clock Inhibit Input

QUICK REFERENCE DATA

- Supply Voltage: -6.8V
- Power Consumption: 500mW
- Temperature Range: 0°C to +70°C

ABSOLUTE MAXIMUM RATINGS

Supply voltage	-8V
Output current	20mA
Storage temperature range	-55°C to +150°C
Max. junction temperature	+175°C
Max. clock I/P voltage	2.5V p-p

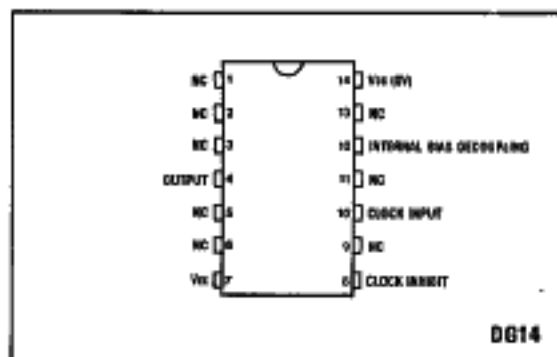


Fig. 1 Pin connections - top view

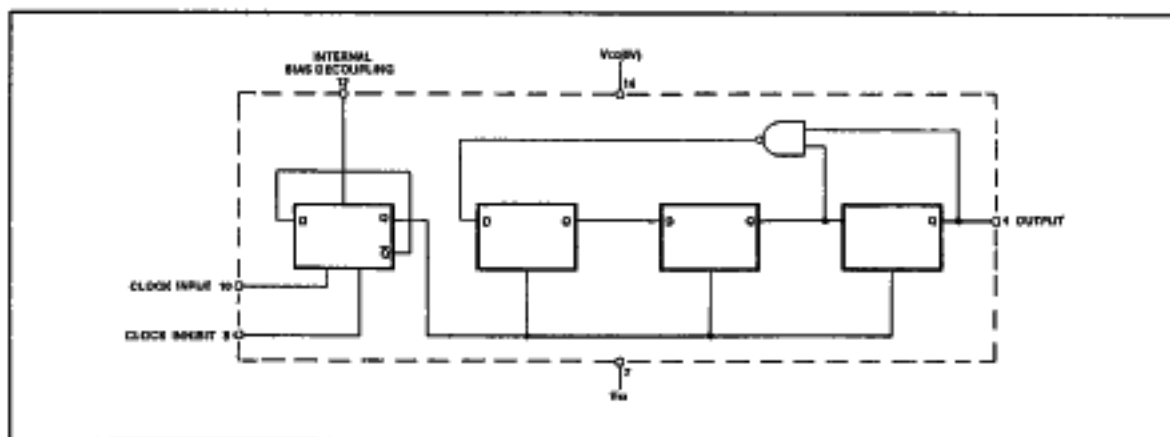


Fig. 2 Functional diagram

ELECTRICAL CHARACTERISTICS

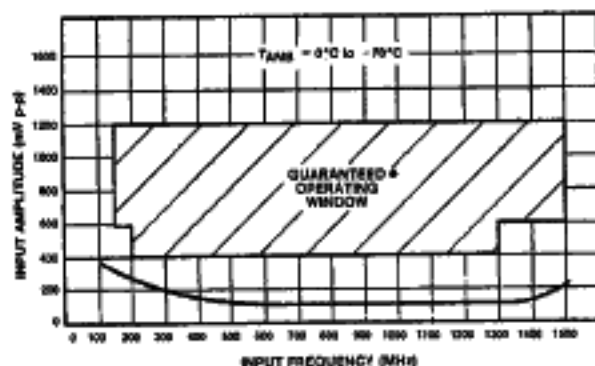
Supply voltage: $V_{CC} = 0V$ $V_{EE} = -6.8V \pm 0.3V$
 T_{amb} (B grade) = $0^{\circ}C$ to $+70^{\circ}C$

T-45-19-05

Characteristic	Symbol	Value		Units	Grade	Conditions	Notes
		Min.	Max.				
Maximum frequency(sine wave I/P)	f_{max}	1.0		GHz	SP6665B	Input = 400-1200mV p-p	Note 5
		1.5		GHz	SP6666B	Input = 600-1200mV p-p	Note 5
Minimum frequency(sine wave I/P)	f_{min}		150	MHz	All	Input = 600-1200mV p-p	Note 6
Current consumption	I_{CC}		105	mA	All	$V_{EE} = -6.8V$	Note 6
Output low voltage	V_{OL}	-1.87	-1.5	V	All	$V_{EE} = -6.8V$ (25°C)	
Output high voltage	V_{OH}	-0.87	-0.7	V	All	$V_{EE} = -6.8V$ (25°C)	
Minimum output swing	V_{OUT}	500		mV	All		Note 5
Clock inhibit high threshold voltage	V_{INH}	-0.96		V	All	$V_{EE} = -6.8V$ (25°C)	
Clock inhibit low threshold voltage	V_{INL}		-1.62	V	All	$V_{EE} = -6.8V$ (25°C)	

NOTES

1. Unless otherwise stated the electrical characteristics are guaranteed over specified supply, frequency and temperature range.
2. The test configuration for dynamic testing is shown in Fig.8.
3. The temperature coefficient of $V_{OH} = +1.3mV/^{\circ}C$ and $V_{OL} = +0.5mV/^{\circ}C$ but these are not tested.
4. The temperature coefficient of $V_{INH} = +0.8mV/^{\circ}C$ but this is not tested.
5. Tested at 25°C and 70°C only.
6. Tested at 25°C only.



* Tested as specified in table of Electrical Characteristics

Fig.3 Typical input characteristic SP6658. The SP6665 operating window is similar except for the maximum operating frequency

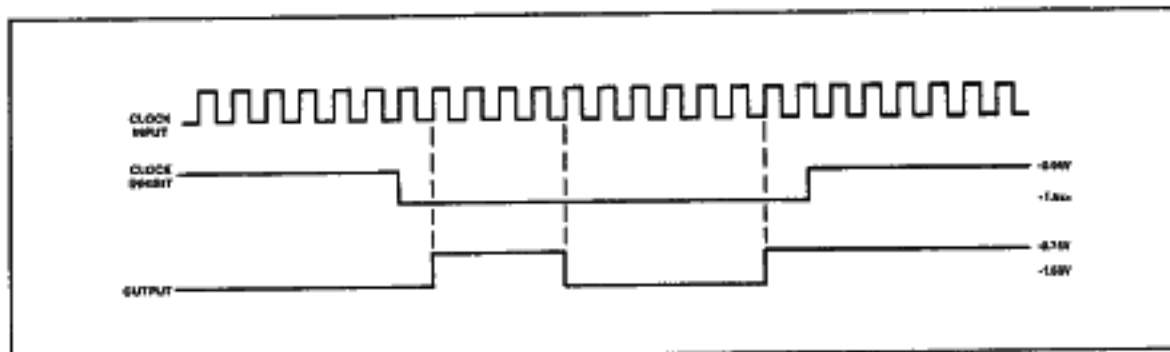


Fig.4 Timing diagram(N.B. output waveform is asymmetric)

T-45-19-05

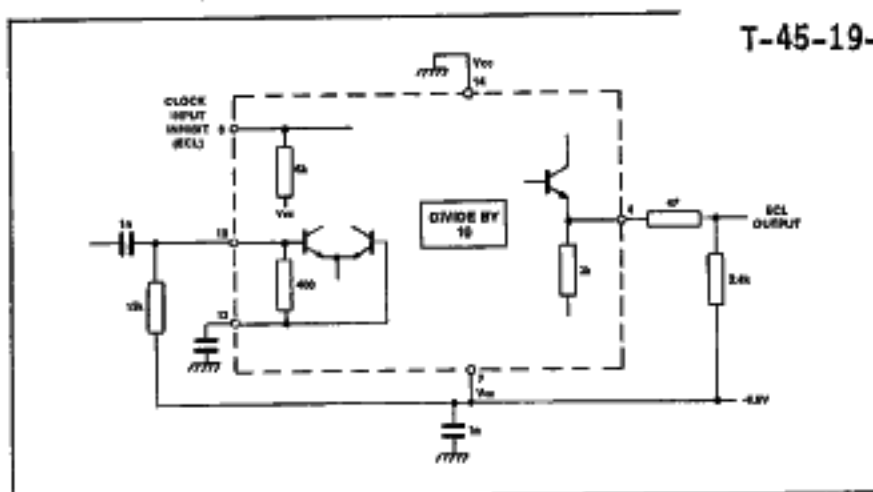


Fig.8 Typical application showing interfacing