



Product Features

- Convert/buffered Fsc frequency using 14.318MHz crystal.
- Internal Loop Filter that requires no external components or adjustments.
- 30 mA buffer switching current
- 8 pin TSSOP package.

XIN, XOUT - Forms an on-chip reference oscillator when connected to terminals of an external parallel resonant crystal, 14.318MHz. XIN may also serve as input for an externally generated reference signal.

CLK2 – CLK2 provides the required NTSC or PAL clock frequencies. This is obtained by dividing the CLK1 frequency by four (4).

The diagram shows the internal connections of the PLL and MPX blocks. The PLL block has inputs for NT/PAL (pin 1), VSS (pin 2), and XIN (pin 3). It has outputs for CLK2ON (pin 8), CLK2 (pin 7), and CLK1 (pin 5). The MPX block has inputs for X'tal Osc. (pin 4) and CLK2 (pin 7). It has outputs for VDD (pin 6) and CLK1 (pin 5). The diagram also shows a 1/4 divider block and a buffer block.

VSS – Circuit ground.

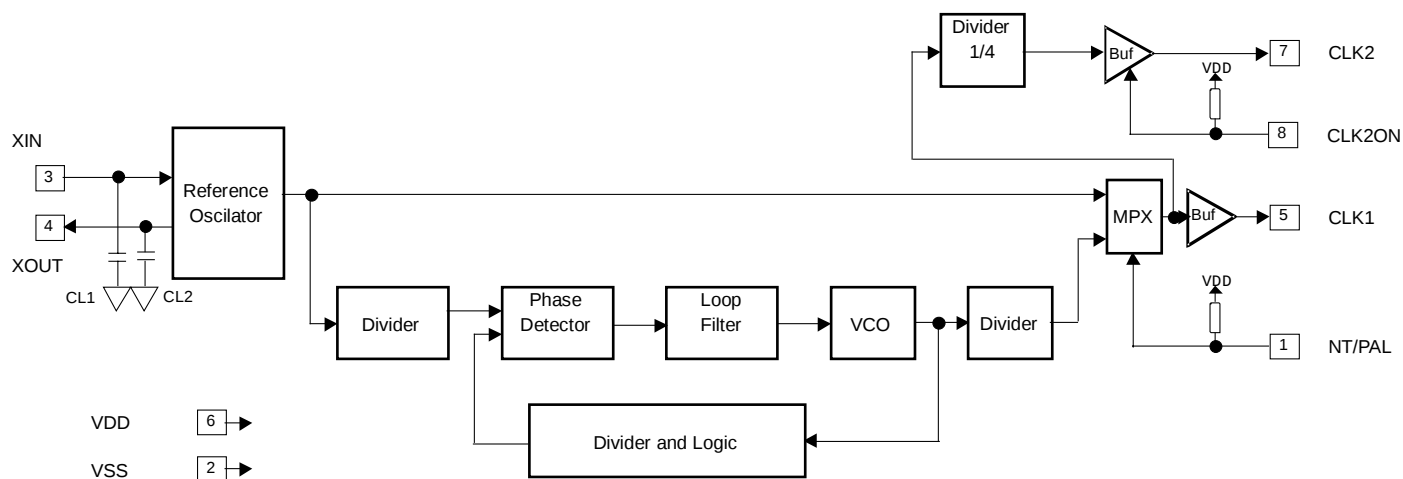


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Programmable NTSC/PAL Clock Generator

Block Diagram



Frequency Selection Table

NT/PAL	CLK2ON	XIN	CLK1	CLK2	ERROR
H	H	14.31818	14.31818	3.579545	0 ppm
L	H	14.31818	17.73448	4.433619	2 ppm low
H	L	14.31818	14.31818	LOW	0 ppm
L	L	14.31818	17.73448	LOW	2 ppm low

Table-1



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Maximum Ratings

Voltage Relative to VSS:	-0.3V
Voltage Relative to VDD:	0.3V
Storage Temperature:	-30°C to + 125°C
Operating Temperature:	0°C to + 70°C
Maximum Power Supply:	7V

This device contains circuitry to protect the inputs against damage due to high static voltages or electric field. Precautions should be taken to avoid application of any voltage higher than the maximum rated voltages to this circuit. For proper operation, Vin and Vout should be constrained to the range:

$$VSS < (V_{in} \text{ or } V_{out}) < VDD$$

Unused inputs must always be tied to an appropriate logic voltage level (either VSS or VDD).

Electrical Characteristics

Characteristic	Symbol	Min	Typ	Max	Units	Conditions
Input Low Voltage	VIL	-	-	0.8	V	
Input High Voltage	VIH	2.0	-	-	V	
Input Low Current	IIL	-	-	100	μA	
Input High Current	IIH	-	-	100	μA	
Output Low Voltage	VOL	-	-	0.4	V	IOL=4mA
Output High Voltage	VOH	2.4	-	-	V	IOH=-4mA
Xtal Input / Output Capacitors	CL1,2	-	23	-	PF	X'Tal's CL=11.5pF
Supply Current	IDD	-	9.3	11.0	mA	
Short Circuit Current	ISC	-	-	30	mA	
Supply Voltage Range	VDDR	3.0	3.3	3.6	V	
VDD = 3.3V, TA = 0 to 70°C and CL = 15pF						

Switching Characteristics

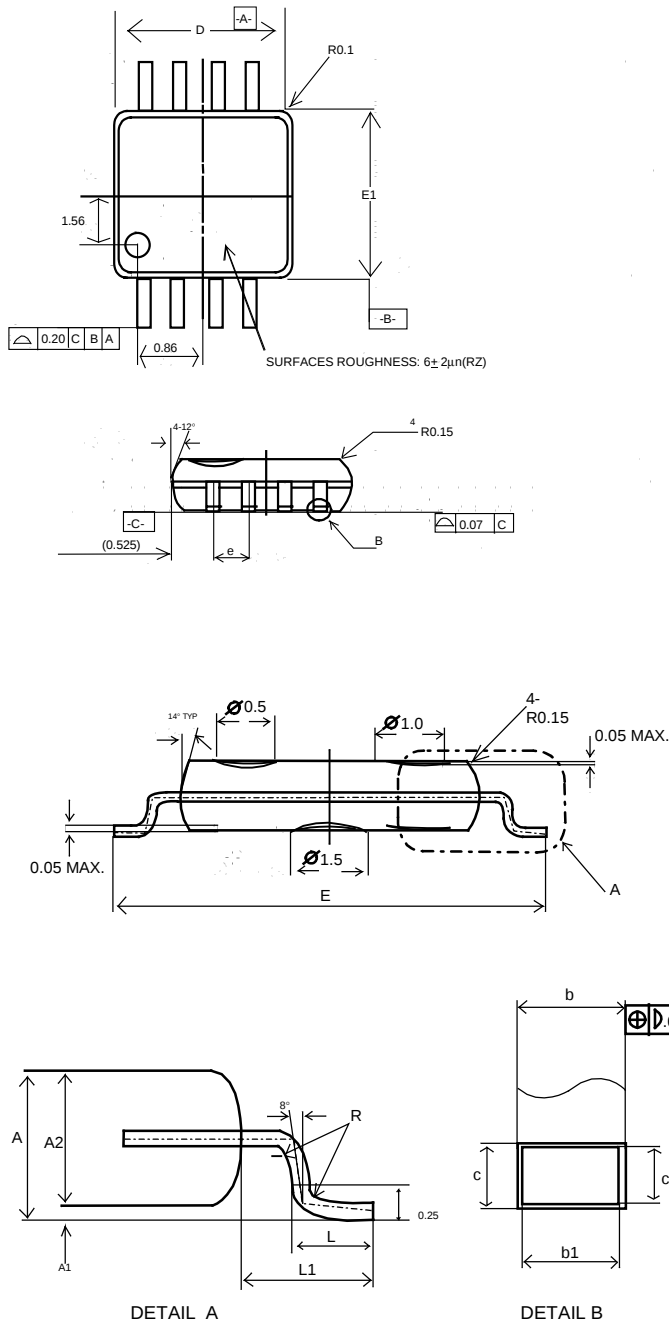
Characteristic	Symbol	Min	Typ	Max	Units	Conditions
Output Rise Time	Tr	-	3.7	4.2	ns	0.2*VDD to 0.8*VDD
Output Fall Time	Tf	-	2.1	2.5	ns	0.2*VDD to 0.8*VDD
Output Duty Cycle	Tduty	45	50	55	%	Vth=1.5V
Absolute Jitter	Tj	-	160	250	ps	Vth=1.5V
Power-up Frequency Stabilization	Tpw-on		-	50	ms	From 0.9*VDD to frequency lock
Conditions: VDD = 3.3V +/-10%, TA = 0 to 70°C and CL = 15pF						



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Package Drawing and Dimensions



8 Pin TSSOP Dimensions

SYMBOL	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	-	-	0.047	-	-	1.20
A1	0.0020	0.0039	0.0059	0.05	0.10	0.15
A2	0.037	0.039	0.041	0.95	1.0	1.05
L	0.020	0.024	0.028	0.50	0.60	0.70
L1	0.035	0.039	0.043	0.90	1.00	1.10
b	0.007	-	0.0011	0.19	-	0.275
b1	0.0076	0.0087	0.0096	0.195	0.22	0.245
c	0.0041	-	0.0069	0.105	-	0.175
c1	0.0041	0.0049	0.0057	0.105	0.125	0.145
θ	0°	-	8°	0°	-	8°
e	0.025 BSC			0.635 BSC		
D	0.114	0.118	0.122	2.9	3.0	3.1
E	0.248	0.252	0.256	6.3	6.4	6.5
E1	0.171	0.173	0.175	4.35	4.40	4.45



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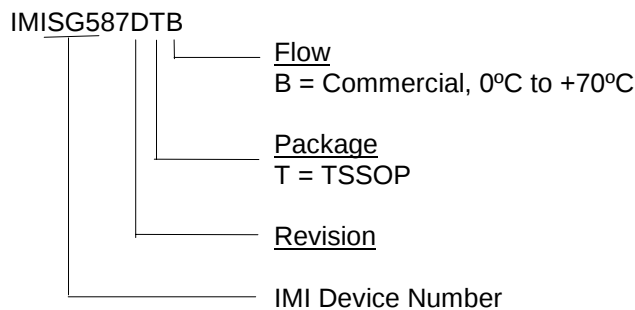
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Ordering Information

Part Number	Package Type	Production Flow
IMISG587DTB	8 PIN TSSOP	Commercial, 0°C to +70°C

Note: The ordering part number is formed by a combination of device number, device revision, package style, and screening as shown below.

Marking: Example: IMI Date Code
587DTB



NOTES:

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**	107393	05/22/01	IKA	New Data Sheet