HIGH TECH
CHIPS, INC.

GENERAL PURPOSE CLOCK GENERATOR

1.0 General Description

HTC555 is a general-purpose clock generator. It requires no external components and provides a wide range of clock frequencies. It's very easy to use and provides a general clock solution to a wide range of applications. It is very simple to design and operate. Its output frequency is determined by the value of D[0:4] (Refer to the output frequency table).

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PDIP, SOIC

1  □ VDD      GND □ 8
2  □ CLKOUT   D0  □ 7
3  □ D4       D1  □ 6
4  □ D3       D2  □ 5

       HTC555
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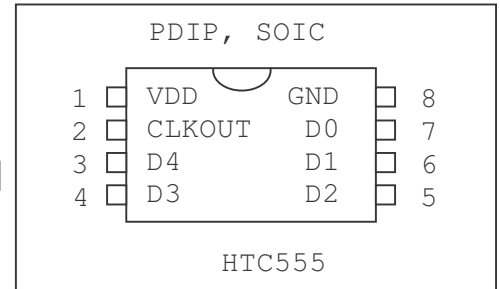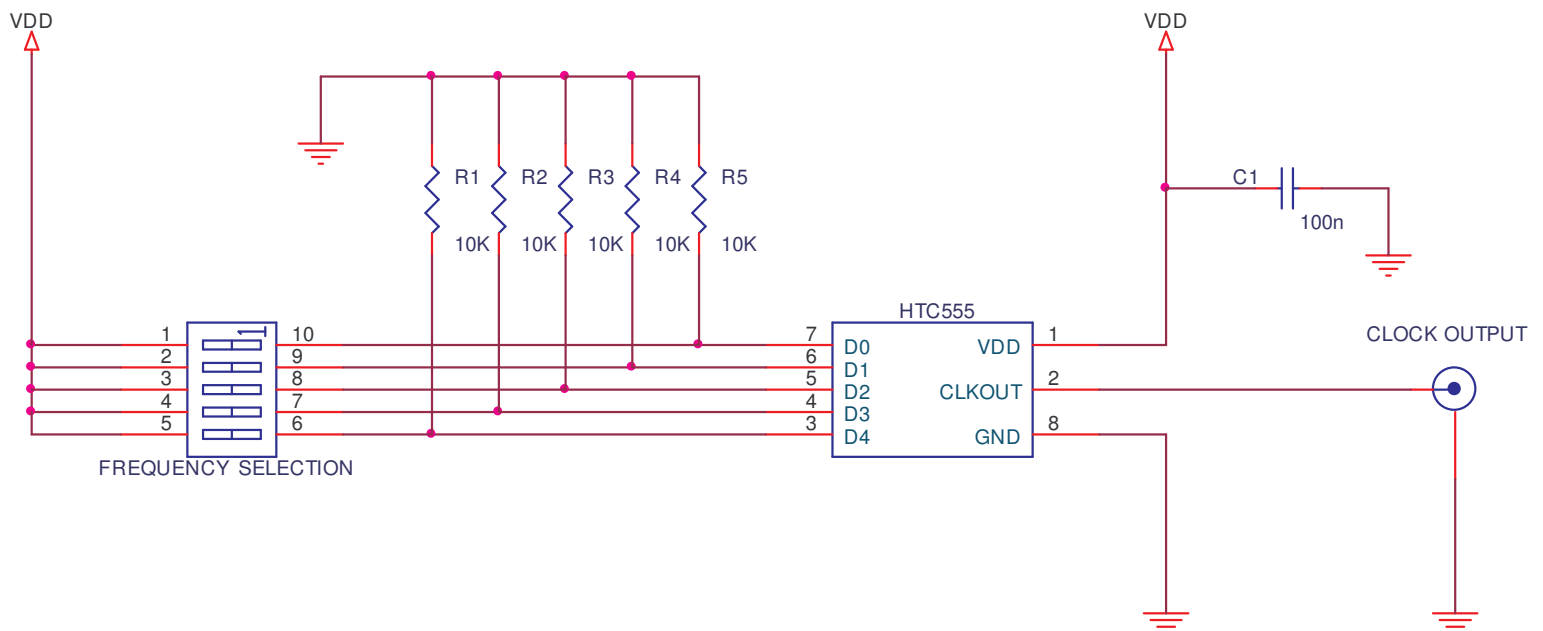
Features

- Single chip solution
- Replaces clock generator
- Has 1% frequency accuracy at room temperature
- Has 10% frequency accuracy over the temperature range and VDD voltage range
- Requires no external components for operation

2.0 Application

Typical Connection Diagram

With this application we can generate 32 different output frequencies (See output frequency selection table for dip switch settings). Setting the "Frequency Selection" dip switch and powering sets the frequency. Please note that HTC555 reads this switch value only at power up. R1-R5 value can be in the range of 1K to 10K in this application. Please note that if only one frequency is needed then we can connect the D [0:4] pins directly to the ground or VDD. C1 is used as a de-coupling capacitor and can be omitted.

3.0 Pin out Description
Abbreviations used: O - output, I - input, P - power

Pin number	Name	I / O	Description	Notes
1	VDD	P	Power	+2.5V to + 5.5V
2	CLKOUT	O	Clock Output	Output frequency
3	D4	I	Frequency selector input.	Tie to GND or VDD
4	D3	I	Frequency selector input.	Tie to GND or VDD
5	D2	I	Frequency selector input.	Tie to GND or VDD
6	D1	I	Frequency selector input.	Tie to GND or VDD
7	D0	I	Frequency selector input.	Tie to GND or VDD
8	GND	P	Ground	Connect to ground

Output Frequency Selection

Abbreviations used: 0 – connection to GND, 1 – connection to VDD

D4	D3	D2	D1	D0	CLK (output frequency)
0	0	0	0	0	1Hz
0	0	0	0	1	10 Hz
0	0	0	1	0	20 Hz
0	0	0	1	1	30 Hz
0	0	1	0	0	40 Hz
0	0	1	0	1	50 Hz
0	0	1	1	0	60 Hz
0	0	1	1	1	70 Hz
0	1	0	0	0	80 Hz
0	1	0	0	1	90 Hz
0	1	0	1	0	100 Hz
0	1	0	1	1	200 Hz
0	1	1	0	0	300 Hz
0	1	1	0	1	400 Hz
0	1	1	1	0	500 Hz
0	1	1	1	1	600 Hz
1	0	0	0	0	700 Hz
1	0	0	0	1	800 Hz
1	0	0	1	0	900 Hz
1	0	0	1	1	1000 Hz

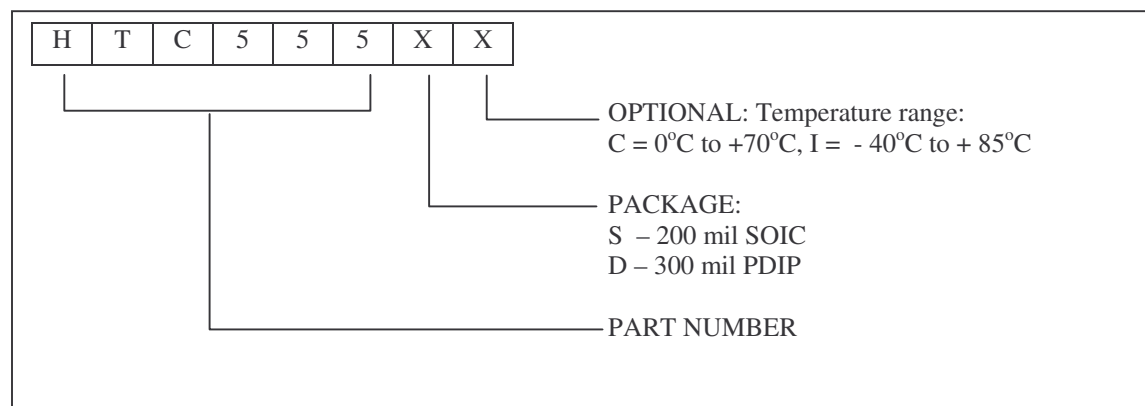| 1	0	1	0	0	2000 Hz
1	0	1	0	1	3000 Hz
1	0	1	1	0	4000 Hz
1	0	1	1	1	5000 Hz
1	1	0	0	0	6000 Hz
1	1	0	0	1	7000 Hz
1	1	0	1	0	8000 Hz
1	1	0	1	1	9000 Hz
1	1	1	0	0	10000 Hz
1	1	1	0	1	25000 Hz
1	1	1	1	0	50000 Hz
1	1	1	1	1	100000 Hz

4.0 Electrical Characteristics

Voltage on VDD pin in respect to GND   +2.5 to +5.5V
Current into VDD pin with no load attached   3 mA[1]
CLKOUT output low voltage (5mA load)   0.4V[1]
CLKOUT output low voltage (25mA load)   0.75V[1]
CLKOUT output high voltage (5mA source)   VDD-0.7V[1]
CLKOUT output source current max   25mA[1]
CLKOUT output sink current max   25mA[1]

NOTES:
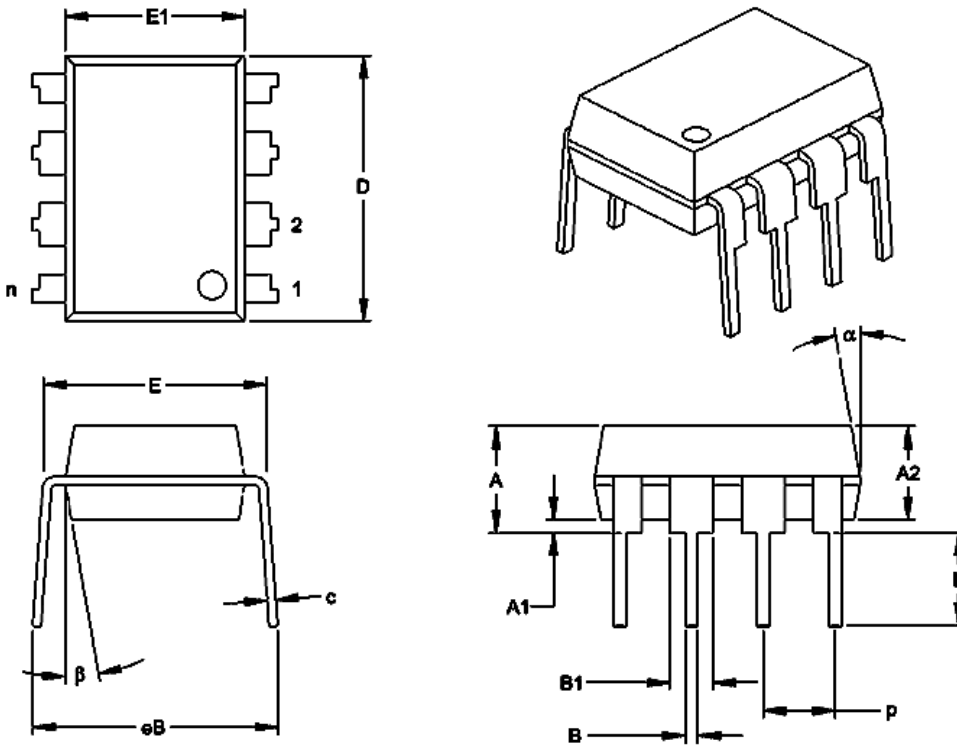1. Those values are characterized but not tested.

5.0 Ordering Information

H	T	C	5	5	5	X	X

OPTIONAL: Temperature range:
C = 0°C to +70°C, I = - 40°C to + 85°C

PACKAGE:
S – 200 mil SOIC
D – 300 mil PDIP

PART NUMBER

6.0 Mechanical Information

8-Lead Plastic Dual In-line (P) – 300 mil (PDIP)

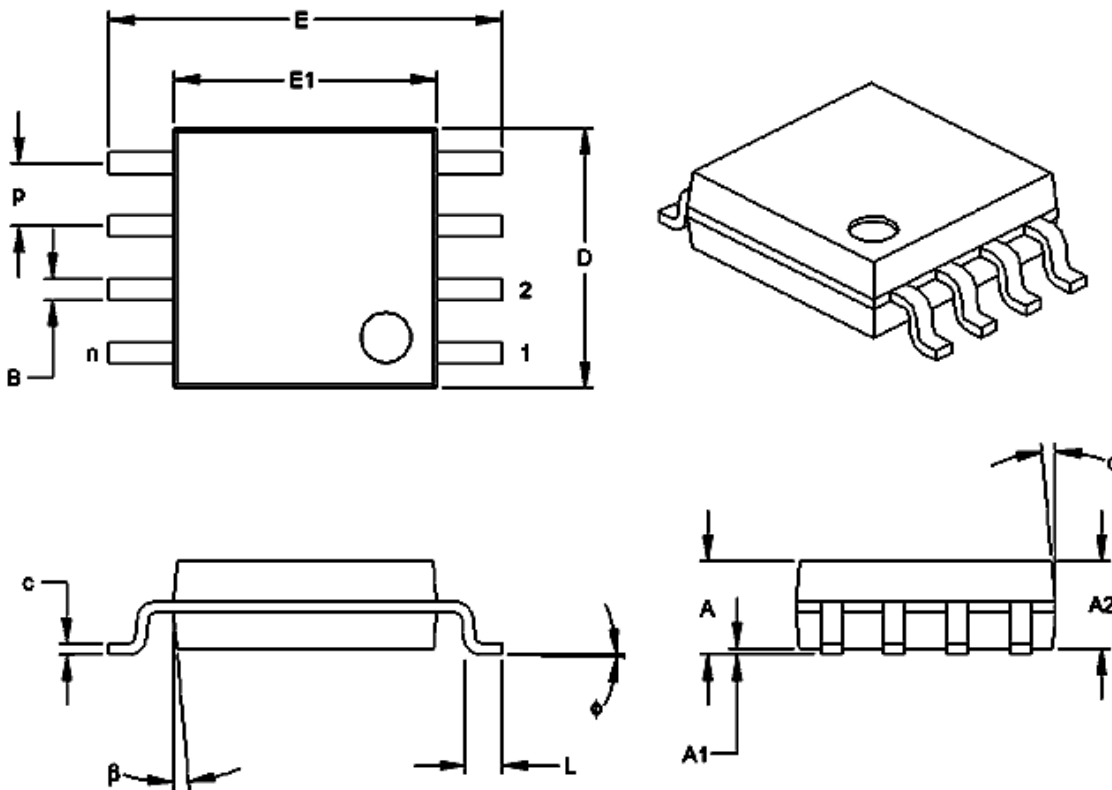|	Units	INCHES*			MILLIMETERS		
Dimension Limits		MIN	NOM	MAX	MIN	NOM	MAX
Number of Pins	n		8			8	
Pitch	p		.100			2.54	
Top to Seating Plane	A	.140	.155	.170	3.56	3.94	4.32
Molded Package Thickness	A2	.115	.130	.145	2.92	3.30	3.68
Base to Seating Plane	A1	.015			0.38		
Shoulder to Shoulder Width	E	.300	.313	.325	7.62	7.94	8.26
Molded Package Width	E1	.240	.250	.260	6.10	6.35	6.60
Overall Length	D	.360	.373	.385	9.14	9.46	9.78
Tip to Seating Plane	L	.125	.130	.135	3.18	3.30	3.43
Lead Thickness	c	.008	.012	.015	0.20	0.29	0.38
Upper Lead Width	B1	.045	.058	.070	1.14	1.46	1.78
Lower Lead Width	B	.014	.018	.022	0.36	0.46	0.56
Overall Row Spacing	eB	.310	.370	.430	7.87	9.40	10.92
Mold Draft Angle Top	α	5	10	15	5	10	15
Mold Draft Angle Bottom	β	5	10	15	5	10	15

*Controlling Parameter

Notes:

Dimensions D and E1 do not include mold flash protrusions. Mold flash or protrusions shell not exceed .010" (0.254mm)per side.

JEDEC Equivalent:MS-001

8-Lead Plastic Small Outline (SM) – Medium, 208 mil (SOIC)

	Units	INCHES*			MILLIMETERS		
Dimension Limits		MIN	NOM	MAX	MIN	NOM	MAX
Number of Pins	n		8			8	
Pitch	P		.050			1.27	
Overall Height	A	.070	.075	.080	1.78	1.97	2.03
Molded Package Thickness	A2	.069	.074	.078	1.75	1.88	1.98
Standoff	A1	.002	.005	.010	0.05	0.13	0.25
Overall Width	E	.300	.313	.325	7.62	7.95	8.26
Molded Package Width	E1	.201	.208	.212	5.11	5.28	5.38
Overall Length	D	.202	.205	.210	5.13	5.21	5.33
Foot Length	L	.020	.025	.030	0.51	0.64	0.76
Foot Angle	ϕ	0	4	8	0	4	8
Lead Thickness	c	.008	.009	.010	0.20	0.23	0.25
Lead Width	B	.014	.017	.020	0.36	0.43	0.51
Mold Draft Angle Top	α	0	12	15	0	12	15
Mold Draft Angle Bottom	β	0	12	15	0	12	15

*Controlling Parameter

Notes:

Dimensions D and E1 do not include mold flash protrusions. Mold flash or protrusions shell should not exceed .010" (0.254mm)per side.

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