



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

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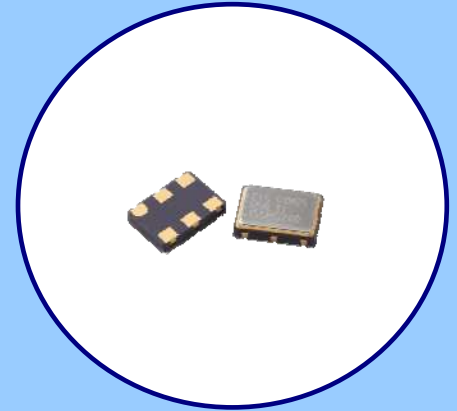
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FEATURES

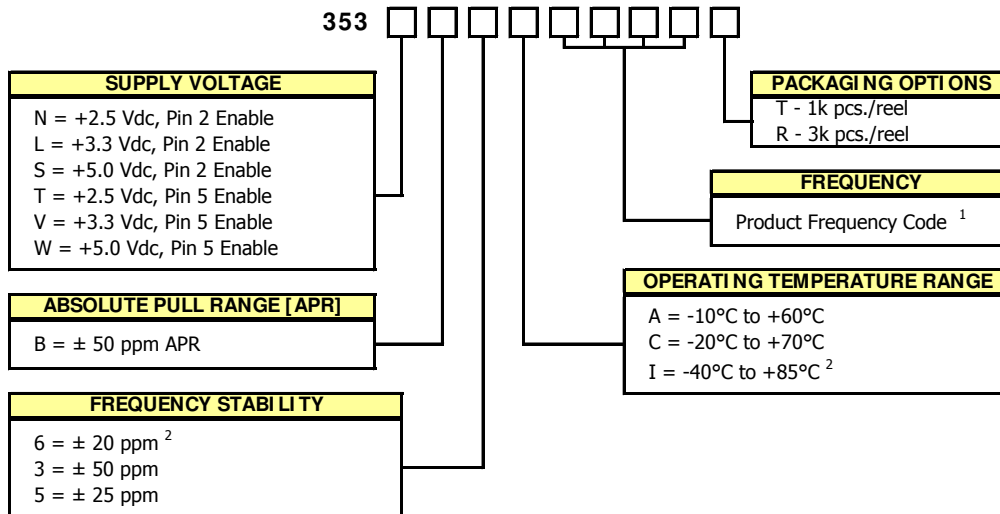
- Standard 5.0mm x 3.2mm 6-Pad Surface Mount Package
- HCMOS Output
- Low Jitter Performance
- Fundamental Crystal Designs
- Frequency Range 1 – 80 MHz
- Operating Voltages +2.5Vdc, +3.3Vdc or +5.0Vdc
- Operating Temperature to -40°C to +85°C
- Output Enable Standard
- Tape & Reel Packaging Standard, EIA-418
- **RoHS/ Green Compliant [6/ 6]**



APPLICATIONS

Model 353 is ideal for applications such as broadband access, Ethernet/Gigabit Ethernet, SONET/SDH, xDSL, PCMA, digital video, Picocells and base stations.

ORDERING INFORMATION

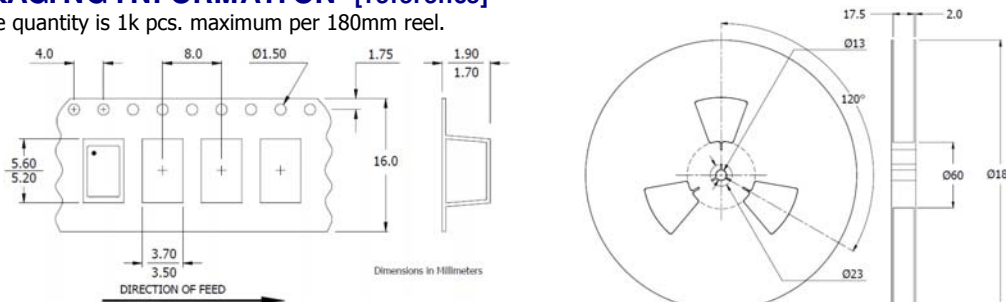


1) Refer to document 016-1454-0, Frequency Code Tables.
3-digits required for frequencies below 100MHz and 4-digits for frequencies 100MHz or greater.
2) Consult factory for availability of 6I Stability/Temperature combination.

**Not all performance combinations and frequencies may be available.
Contact your local CTS Representative or CTS Customer Service for availability.**

PACKAGING INFORMATION [reference]

Device quantity is 1k pcs. maximum per 180mm reel.



ELECTRICAL CHARACTERISTICS

	PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
ELECTRICAL PARAMETERS	Maximum Supply Voltage	V_{CC}	-	-0.5	-	5.0	V
	Maximum Control Voltage	V_C	-	-0.5	-	V_{CC}	V
	Storage Temperature	T_{STG}	-	-40	-	+100	°C
	Frequency Range	f_o	-	1 - 80			MHz
	Frequency Stability (See Note 1 and Ordering Information)	$\Delta f/f_o$	-	-	-	20, 25 or 50	± ppm
	Absolute Pull Range (See Note 2 and Ordering Information)	APR	-	±50	-	-	ppm
	Aging	$\Delta f/f_{25}$	First Year @ +25°C, nominal V_{CC} and V_C	-3	-	3	ppm
	Operating Temperature	T_A	-	-10 -20 -40	+25	+60 +70 +86	°C
	Supply Voltage	V_{CC}	Model 353N, 353T, ±5% Model 353L, 353V, ±5% Model 353S, 353W, ±5%	2.38 3.14 4.75	2.5 3.3 5.0	2.63 3.47 5.25	V
	Supply Current	I_{CC}	$C_L = 15$ pF @ +2.5Vdc @ +3.3Vdc @ +5.0Vdc	- - -	- - -	25 25 30	mA
	Output Load	C_L	-	-	-	15	pF
	Control Voltage	V_C	Model 353N, 353T, $V_{CC} = 2.5V$ Model 353L, 353V, $V_{CC} = 3.3V$ Model 353S, 353W, $V_{CC} = 5.0V$	0.20 0.15 0.50	1.25 1.65 2.50	2.30 3.15 4.50	V
	Frequency Deviation	Δf	+25°C @ Time of Shipment, over V_C range	±100	-	-	ppm
	Linearity	L	Best Straight Line Fit	-	-	10	%
	Input Impedance	Z_{Vc}	-	10	-	-	kOhms
	Transfer Function	-	-	Positive			-
	Output Duty Cycle	SYM	@ 50% Level	45	-	55	%
	Output Voltage Levels	V_{OH} V_{OL}	Logic '1' Level, CMOS Load Logic '0' Level, CMOS Load	$0.9V_{CC}$ -	- -	- $0.1V_{CC}$	V
	Rise and Fall Time	T_{Rr} , T_{Ff}	@ 20%/80% Levels	-	3	8.0	ns
	Start Up Time	T_S	Application of V_{CC}	-	5	10	ms
	Modulation Roll-off	-	@ -3dB	12	-	-	kHz
	Enable Function						
	Enable Input Voltage	V_{IH}	Pin 2 or Pin 5 Logic '1', Output Enabled	$0.7V_{CC}$	-	-	V
	Disable Input Voltage	V_{IL}	Pin 2 or Pin 5 Logic '0', Output Disabled	-	-	$0.3V_{CC}$	
	Enable Time	T_{PLZ}	Pin 2 or Pin 5 Logic '1'	-	-	100	ns
	Phase Jitter, RMS	t_{jrms}	Bandwidth 12 kHz - 20 MHz	-	0.5	1	ps

- Notes:
- Inclusive of initial tolerance at time of shipment, changes in supply voltage, load, temperature and 1year aging.
Minimum guaranteed frequency shift from f_o over variations in temperature, aging, power supply and load.

ENABLE TRUTH TABLE

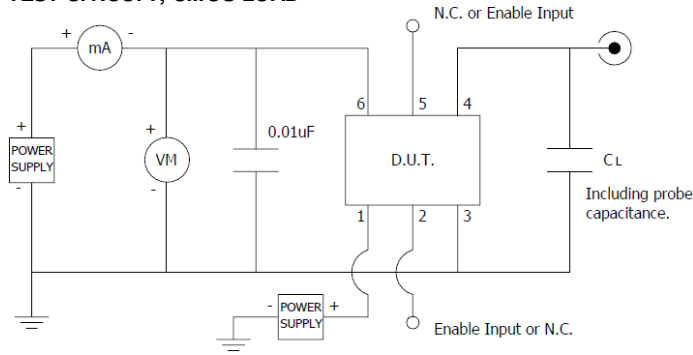
PIN 2 or Pin 5	PIN 4
Logic '1'	Output
Open	Output
Logic '0'	High Imp.

SINGLE SIDE BAND PHASE NOISE
(typical maximum)

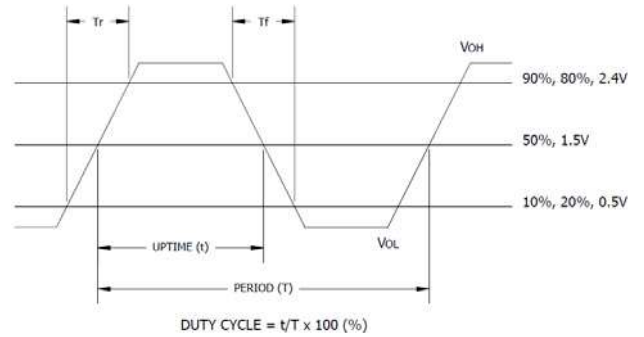
Frequency Offset	Phase Noise (dBc/ Hz) *	Frequency Offset	Phase Noise (dBc/ Hz) *
10 Hz	-60	10k Hz	-135
100 Hz	-90	100k Hz	-150
1k Hz	-120	>100k Hz	-150

* Results may vary depending on frequency.

TEST CIRCUIT, CMOS LOAD

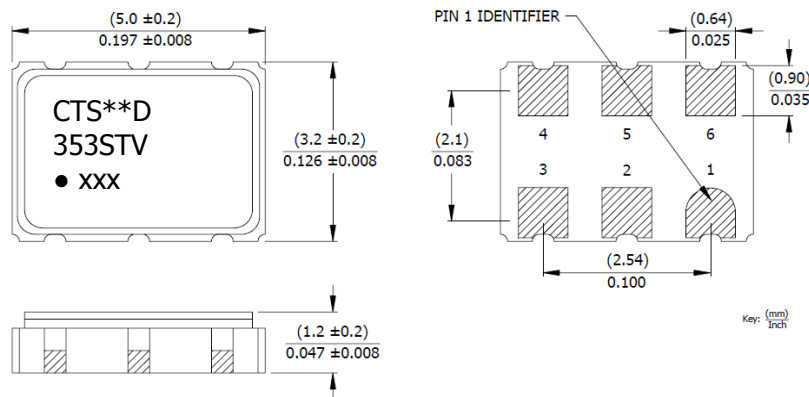


OUTPUT WAVEFORM, CMOS



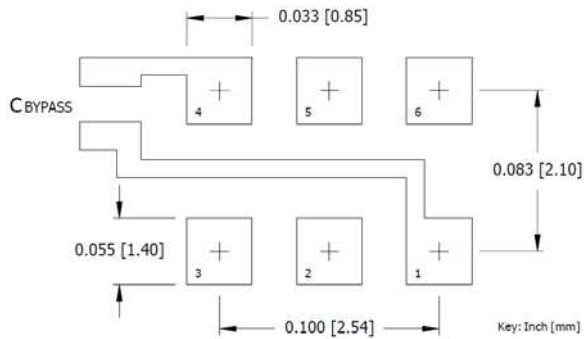
MECHANICAL SPECIFICATIONS

PACKAGE DRAWING



SUGGESTED SOLDER PAD GEOMETRY

C_{BYPASS} should be ≥ 0.01 uF.



MARKING INFORMATION

- ** - Manufacturing Site Code.
 - D - Date Code. See Table I for codes.
 - ST - Frequency stability/temperature code. [Refer to Ordering Information.]
 - V - Voltage code. N or T = 2.5V, L or V = 3.3V, S or W = 5.0V
 - xxx - Frequency Code. 3-digits, frequencies below 100MHz
- Refer to document 016-1454-0, Frequency Code Tables.

NOTES

- Complete CTS part number, frequency value and date code information must appear on reel and carton labels.
- Termination pads [e4]. Barrier-plating is nickel [Ni] with gold [Au] flash plate.
- Reflow conditions per JEDEC J-STD-020; 260°C maximum, 20 seconds.
- MSL = 1.

D.U.T. PIN ASSIGNMENTS

PIN	SYMBOL	DESCRIPTION
1	V _C	Control Voltage
2	EOH or N.C.	Enable [std] or No Connect
3	GND	Circuit & Package Ground
4	Output	RF Output
5	N.C. or EOH	No Connect or Enable [opt]
6	V _{CC}	Supply Voltage

TABLE I - DATE CODE

YEAR		MONTH					JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2001	2005	2009	2013	2017		A	B	C	D	E	F	G	H	J	K	L	M	
2002	2006	2010	2014	2018		N	P	Q	R	S	T	U	V	W	X	Y	Z	
2003	2007	2011	2015	2019		a	b	c	d	e	f	g	h	j	k	l	m	
2004	2008	2012	2016	2020		n	p	q	r	s	t	u	v	w	x	y	z	