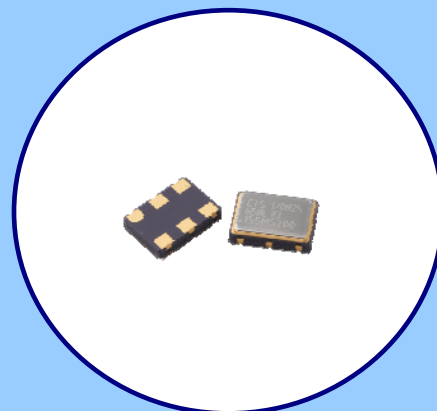


FEATURES

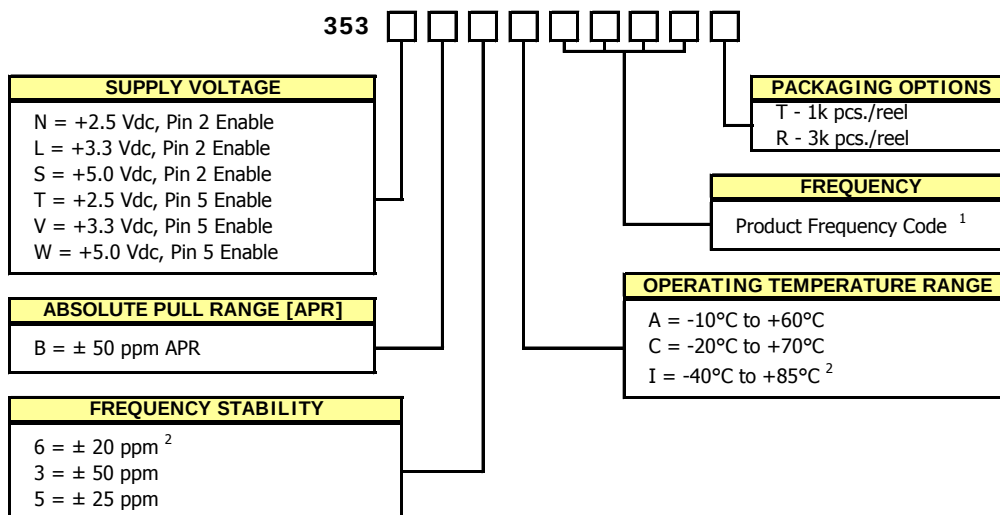
- Standard 5.0mm x 3.2mm 6-Pad Surface Mount Package
- HCMOS Output
- Low Jitter Performance
- Fundamental Crystal Designs
- Frequency Range 1 – 80 MHz
- Operating Voltages +2.5Vdc, +3.3Vdc or +5.0Vdc
- Operating Temperature to -40°C to +85°C
- Output Enable Standard
- Tape & Reel Packaging Standard,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

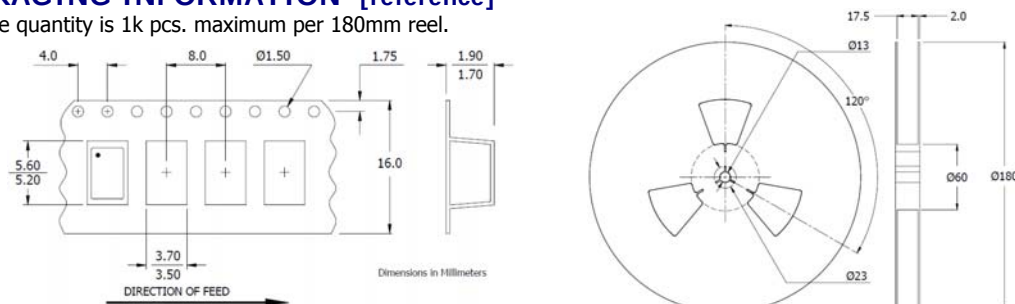
3-digits required for frequencies below 100MHz and 4-digits for frequencies 100MHz or greater.

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

ELECTRICAL PARAMETERS	PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
	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, $V_{CC} = 2.5$ V Model 353L, 353V, $V_{CC} = 3.3$ V Model 353S, 353W, $V_{CC} = 5.0$ V	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_{Rf} , T_F	@ 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

1. Notes:

2. 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.

SINGLE SIDE BAND PHASE NOISE
 (typical maximum)

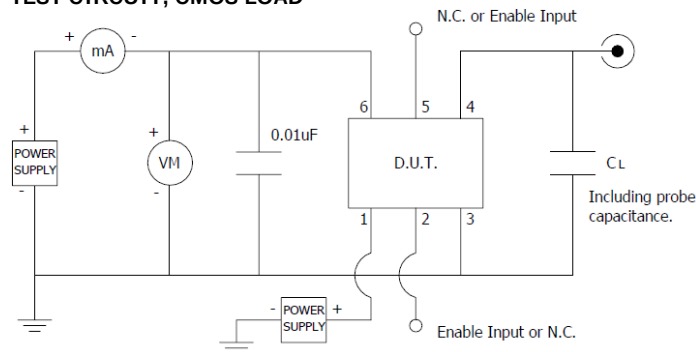
Frequency Offset	Phase Noise (dBc/Hz) *	Frequency Offset	Phase Noise (dBc/Hz) *
10 Hz	-60	10k Hz	-135
100 Hz	-90	100k Hz	-150
1k Hz	-120	>100k Hz	-150

* Results may vary depending on frequency.

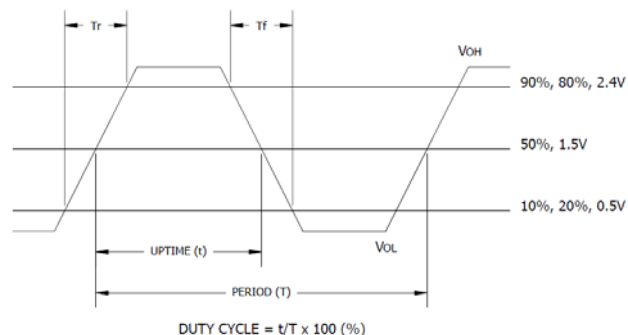
ENABLE TRUTH TABLE

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

TEST CIRCUIT, CMOS LOAD

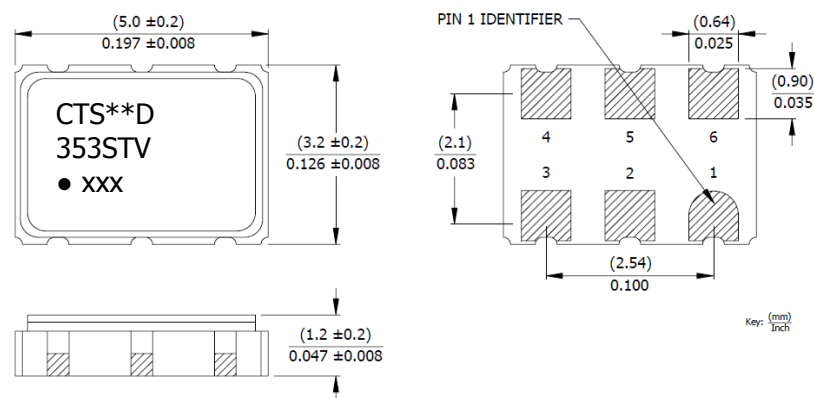


OUTPUT WAVEFORM, CMOS



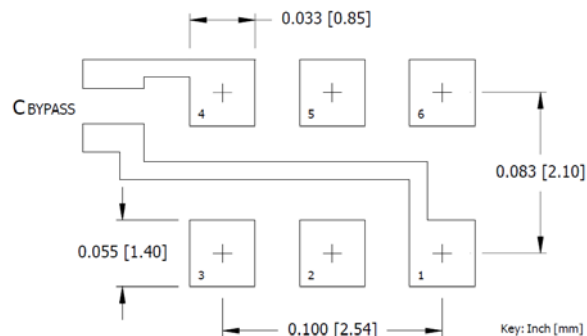
MECHANICAL SPECIFICATIONS

PACKAGE DRAWING



SUGGESTED SOLDER PAD GEOMETRY

C_{BYPASS} should be $\geq 0.01 \mu F$.



MARKING INFORMATION

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

NOTES

1. Complete CTS part number, frequency value and date code information must appear on reel and carton labels.
2. Termination pads [e4]. Barrier-plating is nickel [Ni] with gold [Au] flash plate.
3. Reflow conditions per JEDEC J-STD-020; 260°C maximum, 20 seconds.
4. 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											
2001	2002	2003	2004	2005	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A	N	a	n													
B	P	b	p													
C	Q	c	q													
D	R	d	r													
E	S	e	s													
F	T	f	t													
G	U	g	u													
H	V	h	v													
J	W	j	w													
K	X	k	x													
L	Y	l	y													
M	Z	m	z													

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

CTS:

[353SB5A163R](#) [353VB5C614R](#) [353TB3C021T](#) [353NB3I343T](#) [353TB3A192T](#) [353SB6A184R](#) [353TB3A655T](#)
[353NB5I500R](#) [353TB5C081T](#) [353LB5I320R](#) [353NB3A34AR](#) [353VB5C081R](#) [353LB3C163T](#) [353LB5A426T](#)
[353WB6A327R](#) [353SB3A260R](#) [353SB3C021R](#) [353VB5A270R](#) [353WB5I742R](#) [353VB3A192R](#) [353LB3C135R](#)
[353SB5C38CR](#) [353LB6A777R](#) [353NB3C128T](#) [353SB5I500T](#) [353LB5A600T](#) [353NB5C163R](#) [353SB3A240T](#)
[353TB3C491R](#) [353TB5I021T](#) [353LB5C270R](#) [353WB5I777T](#) [353VB3C655T](#) [353SB3C307R](#) [353TB3I327R](#)
[353WB6A250T](#) [353LB5I24FT](#) [353VB5A614T](#) [353TB5A100R](#) [353NB5C384R](#) [353WB3A128R](#) [353LB3I447R](#)
[353SB3C260R](#) [353VB3C491T](#) [353NB3I327R](#) [353VB5I27BT](#) [353SB5I38CR](#) [353WB6A742R](#) [353WB3I426T](#)
[353SB5C163R](#) [353LB5C426T](#) [353WB6C021R](#) [353TB5C122T](#) [353SB5A081T](#) [353WB5A655R](#) [353SB3C655R](#)
[353WB3C14CR](#) [353WB5A192R](#) [353TB6A240R](#) [353SB5I128T](#) [353NB3A194T](#) [353WB5I081T](#) [353VB5C015T](#)
[353LB3C400T](#) [353TB5A283T](#) [353TB5I327T](#) [353TB3I240R](#) [353WB3I122T](#) [353SB3A27BR](#) [353LB3C14CR](#)
[353LB5C74AR](#) [353VB5C270R](#) [353WB3A320T](#) [353SB5C384T](#) [353SB5A283R](#) [353LB3A343R](#) [353TB3A447R](#)
[353WB6A015T](#) [353NB5I320T](#) [353VB6A14CT](#) [353NB6A135T](#) [353LB3I015R](#) [353SB3C283T](#) [353VB5A184T](#)
[353SB3I388R](#) [353TB3A74AT](#) [353WB5A777T](#) [353TB3I128R](#) [353VB3C283T](#) [353SB5A192R](#) [353TB5I135R](#)
[353WB3C192T](#) [353LB3I240T](#) [353SB3A021T](#) [353TB3C307R](#) [353NB5I614R](#) [353TB3A27BT](#) [353LB3I74AT](#)
[353SB3A388T](#) [353LB6A34AT](#)