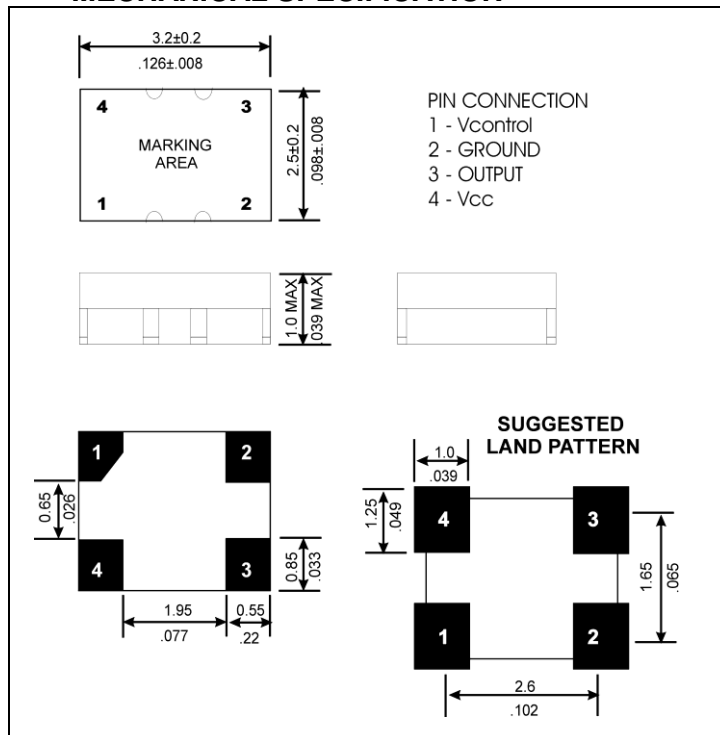


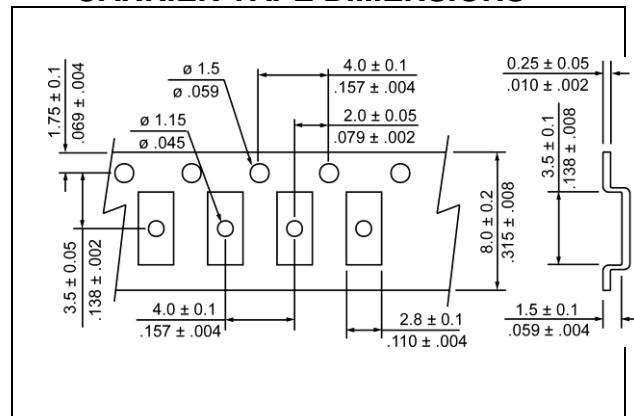
#### ELECTRICAL SPECIFICATION

PARAMETER	SYMBOL	CONDITIONS	VALUE	UNIT	
Nominal Frequency	$f_o$	$V_{cc} \pm 5\%$ @ $V_c = 1.5$ Vdc	32.768	MHz	
Supply voltage, nom.	$V_{cc}$	$V_{cc} \pm 5\%$ ,	3.3	VDC	
Supply current, max	$I_s$	$V_{cc} \pm 5\%$	6	mA	
Operating temperature	$T_a$	-----	-20 ~ +70	°C	
Storage temperature	$T(stg)$	Absolute max	-55 ~ +125	°C	
Frequency Stability vs. Temperature, Max vs. Supply Voltage, Max vs. Load, Max vs. Aging, Max	$\Delta f/f_o(T_a)$ $\Delta f/f_v$ $\Delta f/f_L$ $\Delta f/f_o(\text{per year})$	Reference to +25°C over -20°C to +70°C $V_{cc} \pm 5\%$ Load $\pm 10\%$ 1 Year at +25°C $\pm 2^\circ\text{C}$	$\pm 2.0$ $\pm 0.2$ $\pm 0.2$ $\pm 1.0$	ppm ppm ppm ppm	
Initial Frequency Calibration, Max	$f_c$	Measured at 25°C, Reference to $f_o$ , $V_c = 1.5$ Vdc	$\pm 1.0$	ppm	
Output Level, HCMOS	Maximum	$V_{ol}$	"0" level voltage	0.33	V
	Minimum	$V_{oh}$	"1" Level voltage	2.97	V
Output Load	RL	$V_{cc} \pm 5\%$	15	pF	
Rise time / Fall time, Mac	$T_r / T_f$	$V_{cc} \pm 5\%$	6	ns	
Symmetry (Duty Cycle)	DC	$V_{cc} \pm 5\%$ , @ 50% Vdd	40-60	%	
Voltage Control Range, Minimum	$V_c$	$V_c = 1.5\text{Vdc} \pm 1.0\text{Vdc}$	$\pm 8$	ppm	
Phase noise @ freq. offset, typical.	$\mathcal{L}(\Delta f)$	$\Delta f = 100$ Hz	-115	dBc/Hz	
	$\mathcal{L}(\Delta f)$	$\Delta f = 1$ KHz	-135	dBc/Hz	
	$\mathcal{L}(\Delta f)$	$\Delta f = 10$ KHz	-148	dBc/Hz	

#### MECHANICAL SPECIFICATION



#### CARRIER TAPE DIMENSIONS

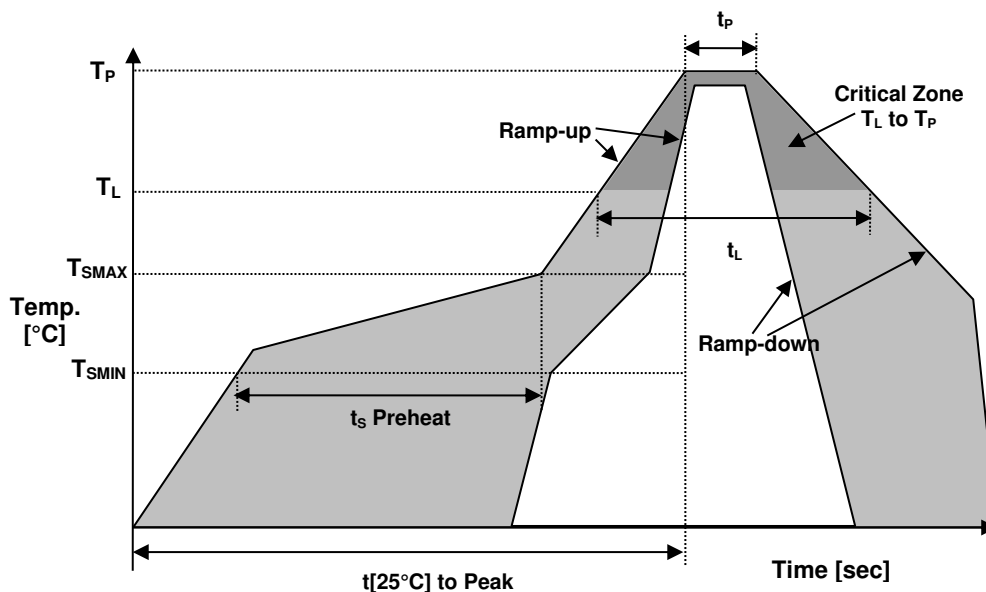


#### PACKAGING

178 mm REEL DIAMETER  
 8 mm TAPE WIDTH, 4 mm PITCH  
 QUANTITY: 2000 PIECES PER REEL

IN ACCORDANCE WITH EIA-481

#### REFLOW PROFILE



Reflow profile		
Temperature Min Preheat	$T_{SMIN}$	150°C
Temperature Max Preheat	$T_{SMAX}$	200°C
Time ( $T_{SMIN}$ to $T_{SMAX}$ )	$t_s$	60-180 sec.
Temperature	$T_L$	217°C
Peak Temperature	$T_P$	260°C
Ramp-up rate	$R_{UP}$	3°C/sec max.
Ramp-down rate	$R_{DOWN}$	6°C/sec max.
Time within 5°C of Peak Temperature	$t_p$	10 sec.
Time $t_{[25^\circ\text{C}] \text{ to Peak Temperature}}$	$t_{[25^\circ\text{C}] \text{ to Peak}}$	480 sec.
Time	$t_L$	60-150 sec.

#### ENVIRONMENTAL

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
RoHS2	6/6 COMPLIANT & LEAD FREE
REACH-SVHC	COMPLIANT
HALOGEN-FREE	COMPLIANT
TERMINATION FINISH	Au



#### MARKING

Rxx32.76  
•DHZ33yw

x – Internal Production ID code  
y – Year code  
w – Week code

YEAR CODE	
Year	Code
2011	1
2012	2
2013	3
2014	4
2015	5
2016	6
2017	7
2018	8
2019	9

ALPHA WEEK CODE TABLE					
Week	Code	Week	Code	Week	Code
1	a	19	s	37	K
2	b	20	t	38	L
3	c	21	u	39	M
4	d	22	v	40	N
5	e	23	w	41	O
6	f	24	x	42	P
7	g	25	y	43	Q
8	h	26	z	44	R
9	i	27	A	45	S
10	j	28	B	46	T
11	k	29	C	47	U
12	l	30	D	48	V
13	m	31	E	49	W
14	n	32	F	50	X
15	o	33	G	51	Y
16	p	34	H	52	Z
17	q	35	I		
18	r	36	J		

#### APPROVAL

RALTRON	
DRAWN BY:	KJackson, October 23, 2015
APPROVED BY:	KJackson, October 23, 2015
REVISION:	A, Initial Release
	B, Corrected various parameters; added Carrier tape and Packaging; F. Parra, 16 November 2015