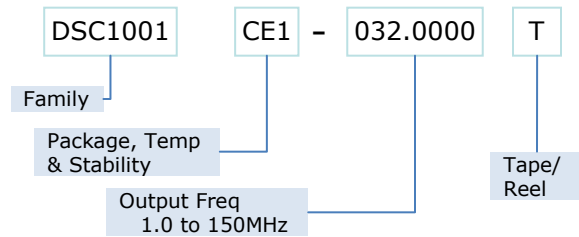


Absolute Maximum Ratings¹

Item	Min	Max	Unit	Condition
Input Voltage	-0.3	VDD+0.3	V	
Junction Temp	-	+150	°C	
Storage Temp	-55	+150	°C	
Soldering Temp	-	+260	°C	40 sec max.
ESD	-		V	
HBM		4000		
MM		200		
CDM		1500		

Ordering Code



* See Ordering Information for details

Recommended Operating Conditions

Parameter	Symbol	Range
Supply Voltage	V _{DD}	1.7 – 3.6V
Output Load	Z _L	R>10KΩ, C≤15pF
Operating Temperature	T	-40 to +105 °C
Option 1		-40 to +85 °C
Option 2		-20 to +70 °C
Option 3		0 to +70 °C
Option 4		

Specifications (VDD = 1.8 to 3.3v) T_A=85°C unless otherwise specified

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Frequency	f ₀	Single Frequency	1		150	MHz
Frequency Tolerance	Δf	Includes frequency variations due to initial tolerance, temperature and power supply voltage			±10,±25,±50	ppm
Aging	Δf	1 year @25°C			±5	ppm
Supply Current, standby	I _{DD}	T=25°C			15	uA
Output Logic Levels	V _{OH} V _{OL}	-4mA 4mA	0.8*V _{DD} -		- 0.2*V _{DD}	Volts
Output logic high						
Output logic low						
Output Startup Time ²	t _{SU}	T=25°C		1.0	1.3	ms
Output Disable Time	t _{DA}			20	100	ns
Output Duty Cycle	SYM		45		55	%
Input Logic Levels	V _{IH} V _{IL}		0.75*V _{DD} -		- 0.25* V _{DD}	Volts
Input logic high						
Input logic low						

VDD = 1.8v

Parameter	Symbol	Condition		Min	Typ	Max	Unit
Supply Current, no load	I_{DD}	$C_L=0p$ $R_L=\infty$ $T=25^{\circ}C$	1MHz 27MHz 70MHz 150MHz		6.0 6.5 7.2 8.3	6.3 6.9 7.5 9.1	mA
Output Transition time		$C_L=15pF$; $T=25^{\circ}C$					
Rise Time	t_R	$20\%/80\%*V_{DD}$			1.8	3	ns
Fall Time	t_F				1.0	3	
Jitter, Max Cycle to Cycle	J_{CC}	$F = 100MHz^3$			60		Ps

VDD = 2.5v

Parameter	Symbol	Condition		Min	Typ	Max	Unit
Supply Current, no load	I_{DD}	$C_L=0p$ $R_L=\infty$ $T=25^{\circ}C$	1MHz 27MHz 70MHz 150MHz		6.0 6.7 7.7 9.6	6.3 7.0 8.1 10.6	mA
Output Transition time		$C_L=15pF$; $T=25^{\circ}C$					
Rise Time	t_R	$20\%/80\%*V_{DD}$			1.0	2	ns
Fall Time	t_F				0.9	2	
Jitter, Max Cycle to Cycle	J_{CC}	$F = 100MHz^3$			50		ps

VDD = 3.3v

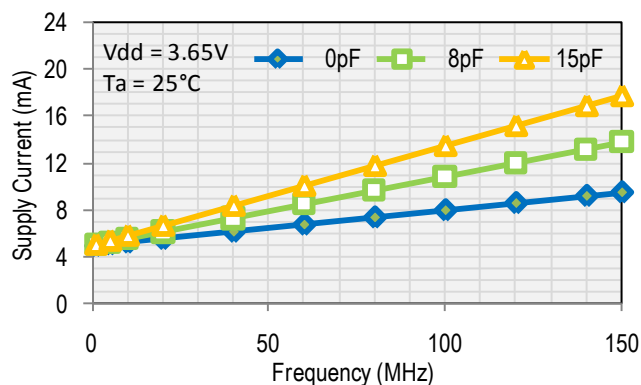
Parameter	Symbol	Condition		Min	Typ	Max	Unit
Supply Current, no load	I_{DD}	$C_L=0p$ $R_L=\infty$ $T=25^{\circ}C$	1MHz 27MHz 70MHz 150MHz		6.0 6.8 8.2 10.8	6.3 7.2 8.7 12.2	mA
Output Transition time		$C_L=15pF$; $T=25^{\circ}C$					
Rise Time	t_R	$20\%/80\%*V_{DD}$			1.0	2	ns
Fall Time	t_F				0.9	2	
Jitter, Max Cycle to Cycle	J_{CC}	$F = 100MHz^3$			50		ps

Notes:

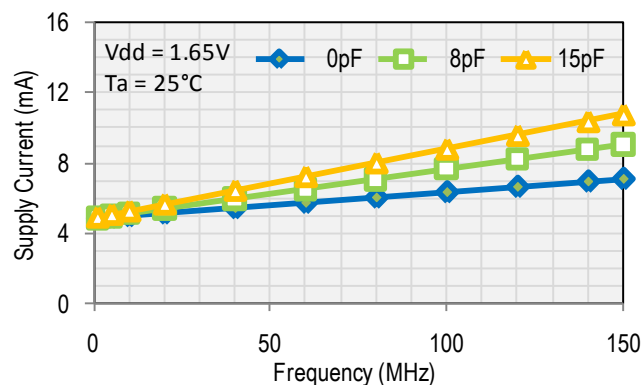
1. Absolute maximum ratings are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated beyond these limits.
2. t_{SU} is time to stable output frequency after V_{DD} is applied. t_{SU} and t_{EN} (after EN is asserted) are identical values.
3. Measured over 50k clock cycles.

Nominal Performance Characteristics

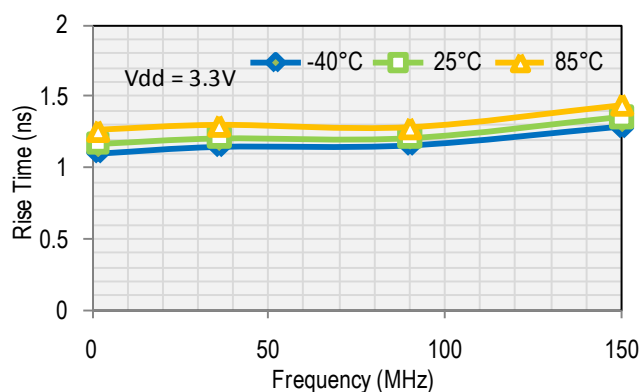
Supply Current



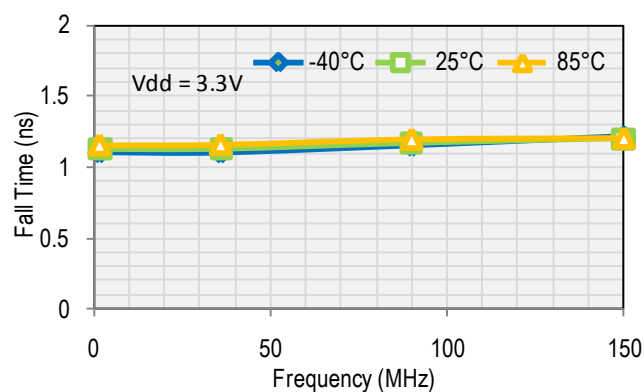
Supply Current



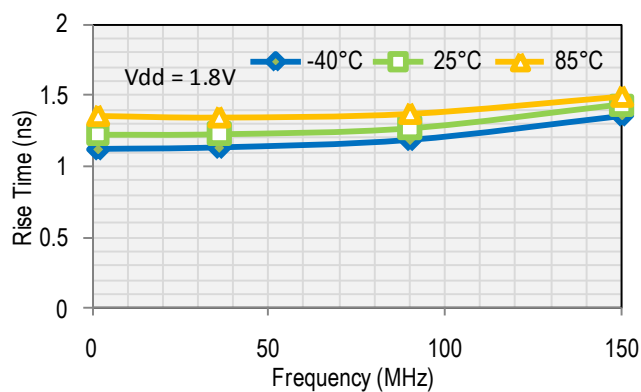
Rise Time



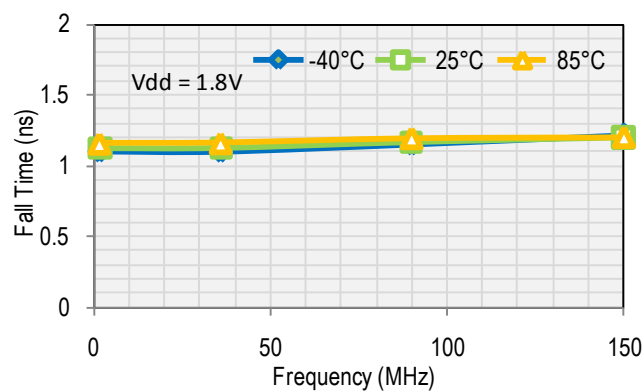
Fall Time



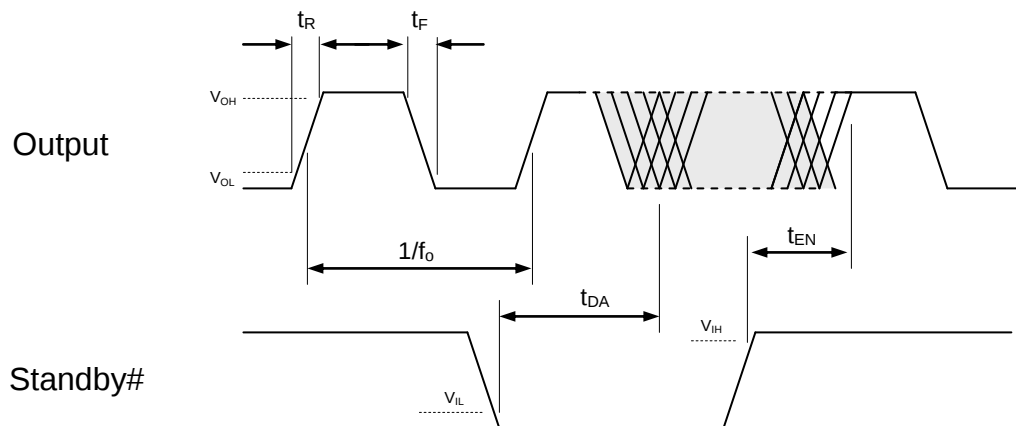
Rise Time



Fall Time



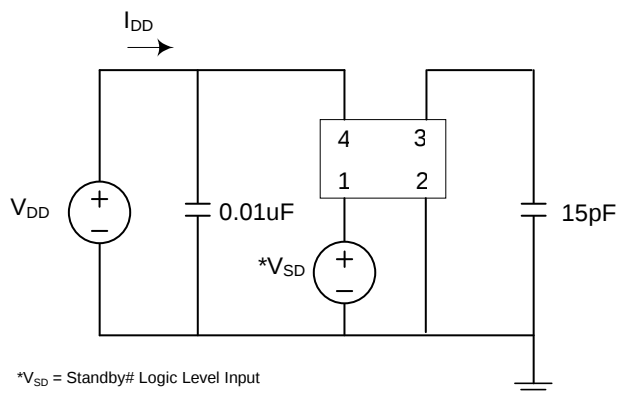
Output Waveform



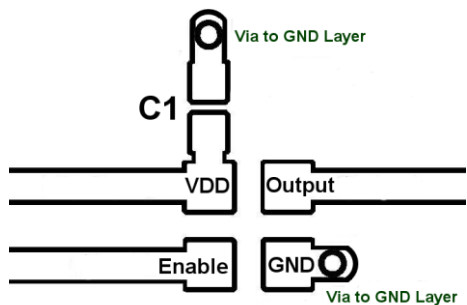
Standby Function

Standby# (pin 1)	Output (pin 3)
Hi Level	Output ON
Open (no connect)	Output ON
Low Level	High Impedance

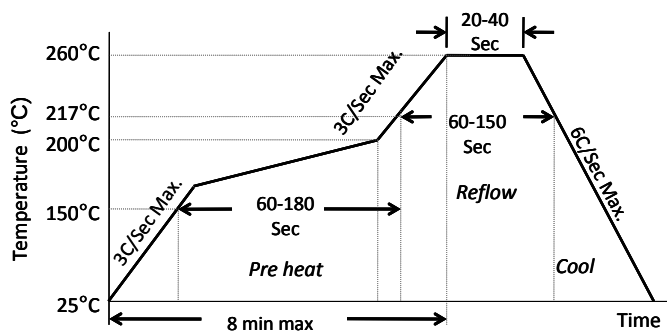
Test Circuit



Board Layout (recommended)



Solder Reflow Profile

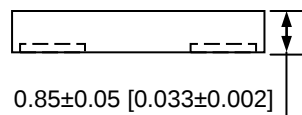
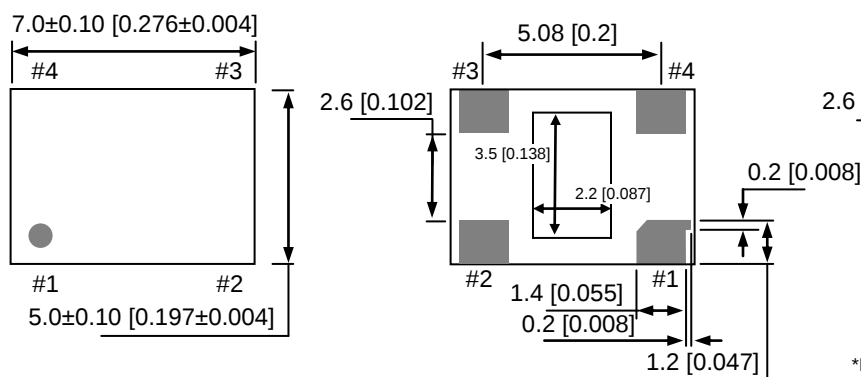


MSL 1 @ 260°C refer to JSTD-020C	
Ramp-Up Rate (200°C to Peak Temp)	3°C/Sec Max.
Preheat Time 150°C to 200°C	60-180 Sec
Time maintained above 217°C	60-150 Sec
Peak Temperature	255-260°C
Time within 5°C of actual Peak	20-40 Sec
Ramp-Down Rate	6°C/Sec Max.
Time 25°C to Peak Temperature	8 min Max.

Package Dimensions

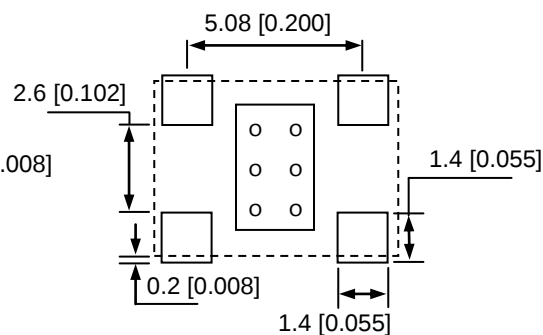
7.0 x 5.0 mm Plastic Package

External Dimensions



No.	Pin Terminal
1	Standby#
2	GND
3	Output
4	VDD

Recommended Land Pattern*

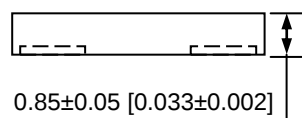
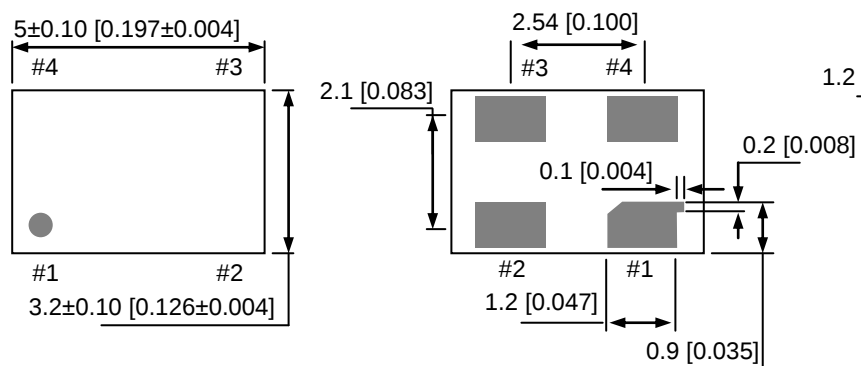


*Note: The center pad is not connected internally and should be left unconnected or tied to GND.

units: mm [inch]

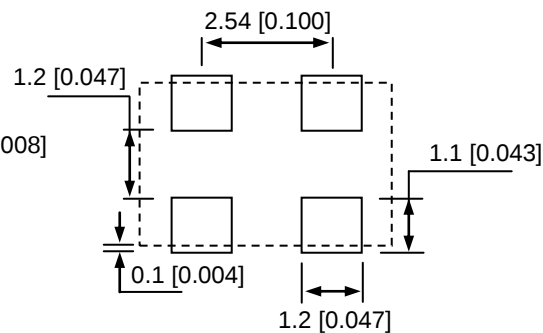
5.0 x 3.2 mm Plastic Package

External Dimensions



No.	Pin Terminal
1	Standby#
2	GND
3	Output
4	VDD

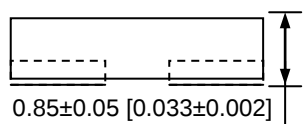
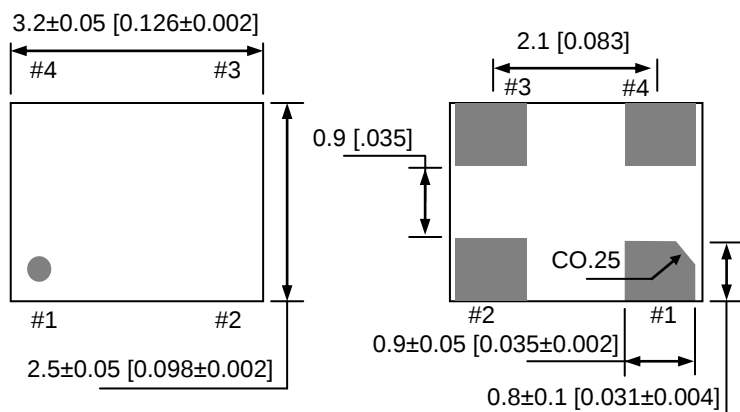
Recommended Land Pattern



units: mm [inch]

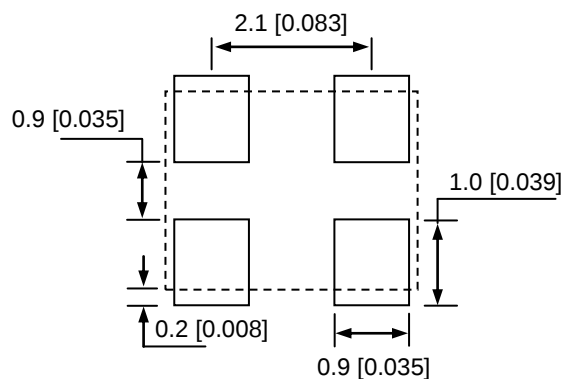
3.2 x 2.5 mm Plastic Package

External Dimensions



No.	Pin Terminal
1	Standby#
2	GND
3	Output
4	VDD

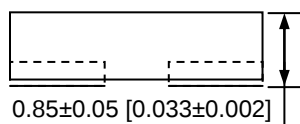
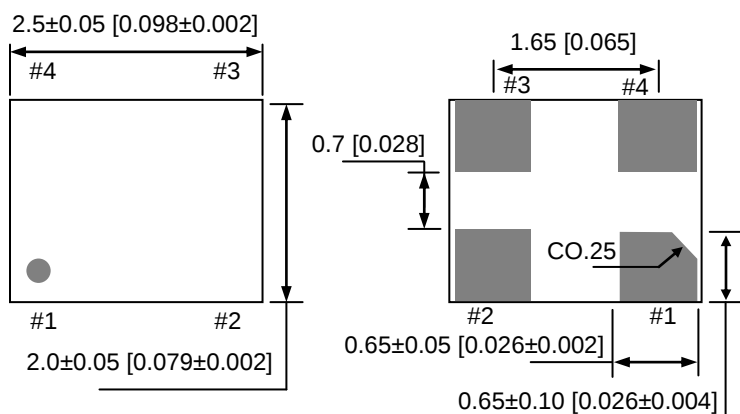
Recommended Land Pattern



units: mm [inch]

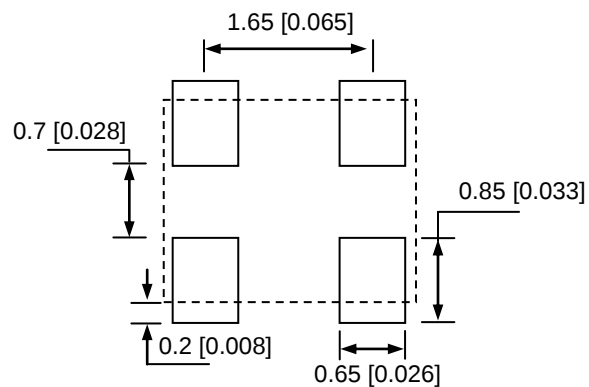
2.5 x 2.0 mm Plastic Package

External Dimensions



No.	Pin Terminal
1	Standby#
2	GND
3	Output
4	VDD

Recommended Land Pattern



units: mm [inch]

Ordering Information

DSC1001 PTS – xxx.xxxx T

PART NUMBERING GUIDE				
Package (Plastic QFN)	Temperature	Stability	Frequency	Packing Option
P=A: 7.0x5.0mm P=B: 5.0x3.2mm P=C: 3.2x2.5mm P=D: 2.5x2.0mm	T=C: 0° ~ +70° C T=E: -20° ~ +70° C T=I: -40° ~ +85° C T=L: -40° ~ +105° C	S=1: ±50ppm S=2: ±25ppm S=5: ±10ppm	XXX.XXXX	Blank: Tubes T: Tape & Reel

Example: DSC1001CE1-123.0000T

The example part number above is a 123.0000MHz oscillator in Plastic 3.2x2.5mm package, with ±50ppm stability over an operating temperature of -20 to +70°C, shipped in Tape and Reel.

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