



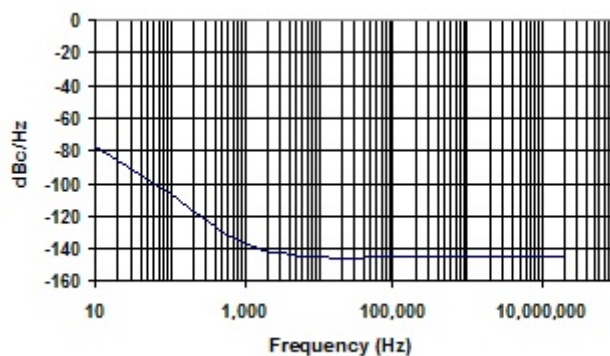
## Electrical Specification for 2.50V $\pm 5\%$ over the specified temperature range and the frequency range of 40 to 325 MHz

Item	Min	Max	Unit	Condition
Frequency Accuracy "45"	-50	+50	ppm	For all supply voltages, load changes, aging for 1 year, shock, vibration and temperatures
"44"	-25	+25		
"20"	-20	+20		
Output Waveform	PECL /ECL			
Output High Level (0°C to 85°C)	1.475	1.760	volts	Referenced to Ground, V <sub>cc</sub> = 2.5 V
	0.975	1.260	volts	Referenced to termination voltage, V <sub>cc</sub> = 2.5 V
	-1.025	-0.740	volts	Referenced to Vcc, V <sub>cc</sub> = 2.5 V
Output High Level (-40°C)	1.415	1.620	volts	Referenced to Ground, V <sub>cc</sub> = 2.5 V
	0.915	1.12	volts	Referenced to termination voltage, V <sub>cc</sub> = 2.5 V
	-1.085	-0.88	volts	Referenced to Vcc, V <sub>cc</sub> = 2.5 V
Output Low Level (0°C to 85°C)	0.690	1.095	volts	Referenced to Ground, V <sub>cc</sub> = 2.5 V
	0.190	0.595	volts	Referenced to termination voltage, V <sub>cc</sub> = 2.5 V
	-1.810	-1.405	volts	Referenced to Vcc, V <sub>cc</sub> = 2.5 V
Output Low Level (-40°C)	0.670	1.195	volts	Referenced to Ground, V <sub>cc</sub> = 2.5 V
	0.170	0.695	volts	Referenced to termination voltage, V <sub>cc</sub> = 2.5 V
	-1.830	-1.305	volts	Referenced to Vcc, V <sub>cc</sub> = 2.5 V
Output Symmetry	45	55	%	at 50% point of V <sub>cc</sub> (See load circuit)
Jitter <sup>1</sup>	-	0.6	pS RMS	12 KHz to 20 MHz from the output frequency
	-	2.8	pS RMS	10 Hz to 1 MHz from the output frequency
Output T <sub>RISE</sub> and T <sub>FALL</sub>	-	0.7	nS	Vth is 20% and 80% of waveform
V <sub>cc</sub> Supply Current (I <sub>cc</sub> )	-	90	mA	
Enable/Disable Internal Pull-up	50	-	Kohm	to V <sub>cc</sub> , measured with Pad 1 = 0.0 volts
V disable	-	0.6	volts	Referenced to pad 3
V enable	1.7	-	volts	Referenced to pad 3
Output leakage V <sub>OUT</sub> = V <sub>cc</sub>	-10	+10	uA	Pad 1 low, device disabled
V <sub>OUT</sub> = 0V	-10	+10	uA	
Enable time	100	500	nS	Time for output to reach a logic state, the output frequency is correct at the specified Start Time.
Disable time	-	200	nS	Time for output to reach a high Z state
Start up time	-	10	mS	Time for output to reach specified frequency
Operating Temperature Range	-10	+70	°C	Standard Temperature Range
	- 20	+70	°C	Extended Temperature Range "C" Option
	- 40	+85	°C	Extended Temperature Range "E" Option
Storage Temperature Range	-55	+125	°C	
Standby Current I <sub>cc</sub>	-	30	uA	Pad 1 low, device disabled

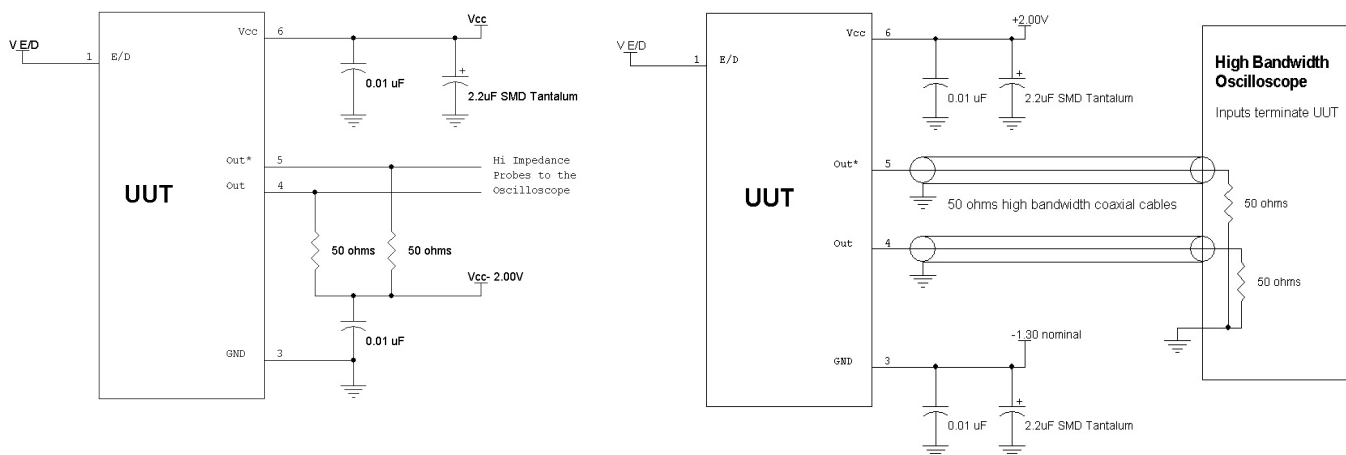
<sup>1</sup> Jitter computed from phase noise data at 125MHz

Specifications with Pad 1 E/D open circuit unless stated otherwise

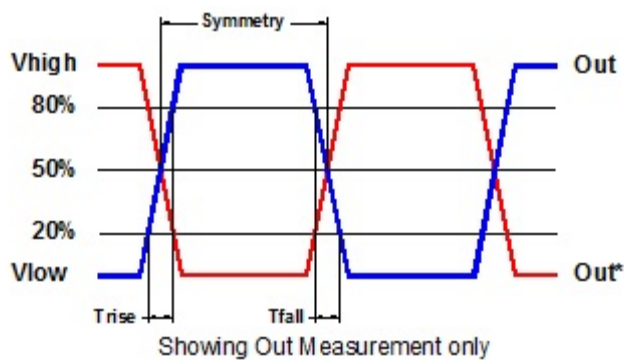
## Typical Phase-Noise Response



## Load Circuit



## Test Waveform



## Reliability: Environmental Compliance

Parameter	Condition
Mechanical Shock	MIL-STD-883 Method 2002, Condition B
Vibration	MIL-STD-883 Method 2007, Condition A
Solderability	MIL-STD-883 Method 2003
Thermal Shock	MIL-STD-883 Method 1011, Condition A

## ESD Rating

Model	Minimum Voltage	Conditions
Human Body Model	1500	MIL-STD-883 Method 3115
Charged Device Model	1000	JESD 22-C101

## Package Labeling

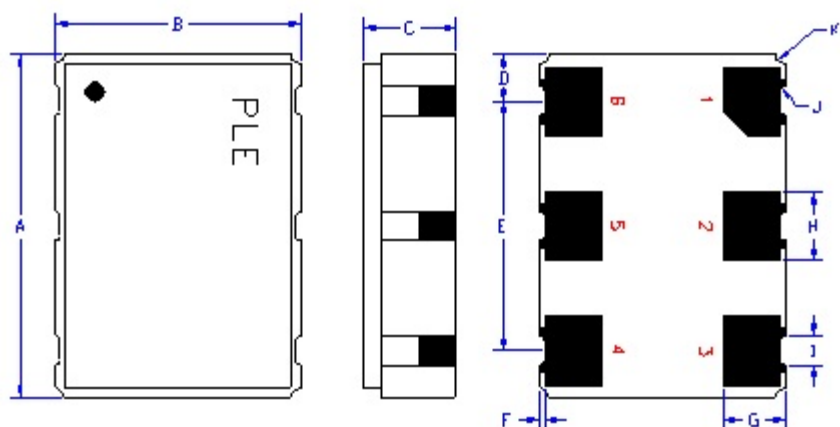
Label is 1" x 2.6" (25.4mm x 66.7mm)  
Font is Courier New  
Bar code is 39-Full ASCII

Label is 1" x 2.6" (25.4mm x 66.7mm)  
Font is Arial

P/N:			
	PE7745DW-100.0M		
Customer P/N:			
	12345678		
Qty:		D/C	
	1000		75409

RoHS Compliant
2nd LVL Interconnect
Category=e4
Max Safe Temp=260C for 10s 2X Max

## Mechanical:



Not to Scale

<sup>1</sup> Typical dimensions

	Inches	mm
A	0.276 $\pm$ 0.006	7.00 $\pm$ 0.15
B	0.197 $\pm$ 0.006	5.00 $\pm$ 0.15
C	0.067 max	1.70 max
D <sup>1</sup>	0.038	0.96
E <sup>1</sup>	0.200	5.08
F <sup>1</sup>	0.004	0.10
G <sup>1</sup>	0.050	1.27
H <sup>1</sup>	0.055	1.40
I <sup>1</sup>	0.024	0.60
J <sup>1</sup>	0.004R	0.10R
K <sup>1</sup>	0.008R	0.20R

## Contacts (pads) :

Gold 11.8 to 39.4  $\mu$ inches (0.3 to 1.0  $\mu$ m) over Nickel 50 to 350  $\mu$ inches (1.27 to 8.89  $\mu$ m)

Pad	Function	Note
1	Output Enable/Disable	When this pad is not connected the oscillator shall operate. When this pad is <0.30 volts, the output will be inhibited (high impedance state.) Recommend connecting this pad to V <sub>CC</sub> if the oscillator is to be always on.
2	No connect	There is no internal connection to this pad
3	Ground (GND)	
4	Output	Both outputs must be terminated and biased for proper operation. The ideal termination is 50 ohms connected to 2.0V below the Supply Voltage.
5	Output*	
6	Supply Voltage (V <sub>CC</sub> )	Recommend connecting appropriate power supply bypass capacitors as close as possible.



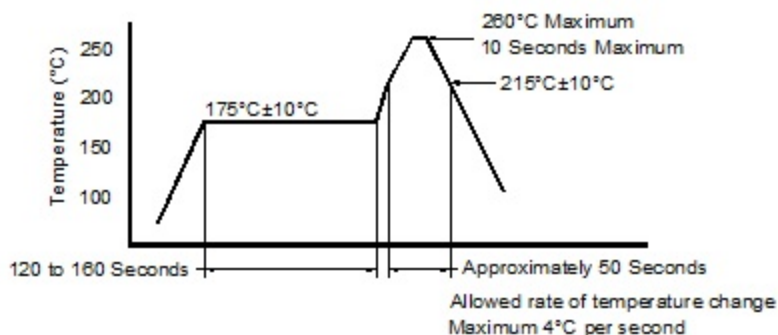
## Layout and application information

Recommend connecting Pad 1 and Pad 2 together to permit the design to accept Enable/Disable input on either pad

For Optimum Jitter Performance, Pletronics recommends:

- a ground plane under the device
- no large transient signals (both current and voltage) should be routed under the device
- do not layout near a large magnetic field such as a high frequency switching power supply
- do not place near piezoelectric buzzers or mechanical fans.

## Reflow Cycle (typical for lead free processing)



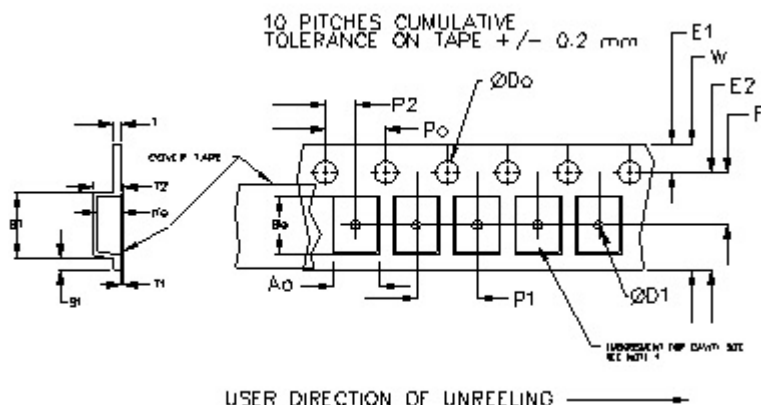
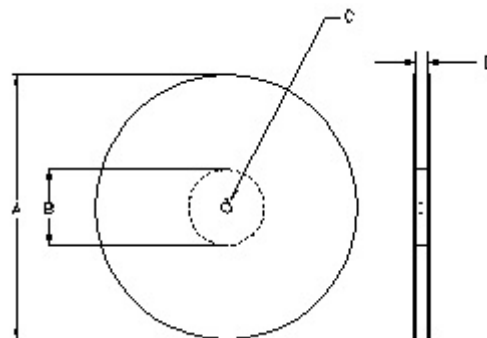
The part may be reflowed 3 times without degradation.

## Tape and Reel: available for quantities of 250 to 1000 per reel, cut tape for < 250

Constant Dimensions Table 1								
Tape Size	D0	D1 Min	E1	P0	P2	S1 Min	T Max	T1 Max
8mm	1.5  +0.1 -0.0	1.0	1.75  ±0.1	4.0  ±0.1	2.0 ±0.05	0.6	0.6	0.1
12mm		1.5			2.0 ±0.1			
16mm		1.5						
24mm		1.5						

Variable Dimensions Table 2							
Tape Size	B1 Max	E2 Min	F	P1	T2 Max	W Max	Ao, Bo & Ko
16 mm	12.1	14.25	7.5 ± 0.1	8.0 ± 0.1	8.0	16.3	Note 1

Note 1: Embossed cavity to conform to EIA-481-B Dimensions in mm Not to scale



REEL DIMENSIONS				
A	inches	7.0	10.0	13.0
	mm	177.8	254.0	330.2
B	inches	2.50	4.00	3.75
	mm	63.5	101.6	95.3
C	mm	13.0 +0.5 / -0.2		
D	mm	16.4 +2.0 -0.0	16.4 +2.0 -0.0	16.4 +2.0 -0.0
		16.0		

Reel dimensions may vary from the above

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