

SM11T027-25.0M Miniature SMD Crystal

November 2016

- The Pletronics' SM11T Series is a miniature surface mount crystal.
- Package is ideal for automated surface mount assembly and reflow practices.
- Tape and Reel packaging
- 3.2 x 5 mm 4 pad
- AT Cut Crystal

Pletronics Inc. certifies this device is in accordance with the RoHS 6/6 (2011/65/EC) and WEEE (2002/96/EC) directives.

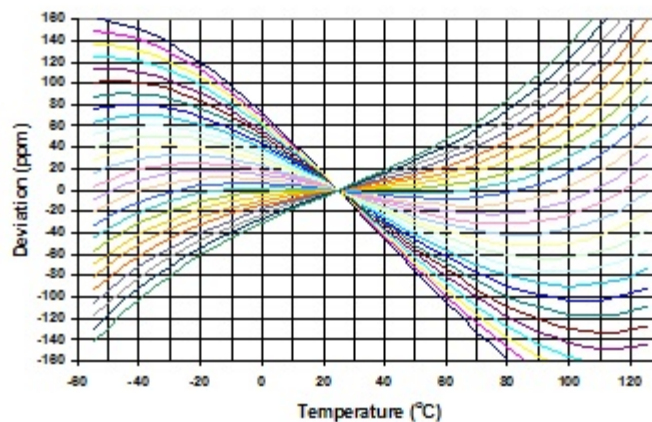
Pletronics Inc. guarantees the device does not contain the following:
Cadmium, Hexavalent Chromium, Lead, Mercury, PBB's, PBDE's
Weight of the Device: 0.06 grams
Moisture Sensitivity Level: 1 As defined in J-STD-020C
Second Level Interconnect code: e4



Electrical Specification: 25.000MHz at 18pF C_{LOAD}

Item	Min	Typ	Max	Unit	Condition
Calibration Frequency Tolerance	-30	-	+30	ppm	at +25°C ± 3°C
Frequency Stability	-30	-	+30	ppm	referenced to 25°C
C_{LOAD}	18.0			pF	
Equivalent Series Resistance (ESR)	-	-	50	Ohms	
Drive Level	-	-	300	µW	use 100 µW for testing
Shunt Capacitance (C_0)	-	-	6.0	pF	Pad to Pad capacitance
Aging at 25°C ± 3°C	-4	-	+4	ppm/Yr	for the first year
	-2	-	+2	ppm/Yr	after the first year
Operating Temperature Range	-40	-	+90	°C	
Storage Temperature Range	-55	-	+125	°C	

AT Cut Crystal Frequency versus Temperature Typical Performance:



Product information is current as of publication date. To specifications per the terms of the Pletronics standard processing does not necessarily include testing of all parameters.

Part Marking:

25.0M
PymdF

Where *fff.fff* = frequency in MHz
Pymd = Pletronics and Date code
F = 18.0 pF capacitance

All other marking is internal factory codes

- Orientation of marking may be mixed on the tape
- Full traceability of part is lost once removed from reel

Codes for Date Code YMD

Code	3	4	5	6	7	8	9
Year	2013	2014	2015	2016	2017	2018	2019

Code	A	B	C	D	E	F	G	H	J	K	L	M
Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Code	1	2	3	4	5	6	7	8	9	A	B	C
Day	1	2	3	4	5	6	7	8	9	10	11	12
Code	D	E	F	G	H	J	K	L	M	N	P	R
Day	13	14	15	16	17	18	19	20	21	22	23	24
Code	T	U	V	W	X	Y	Z					
Day	25	26	27	28	29	30	31					




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

Package Labeling

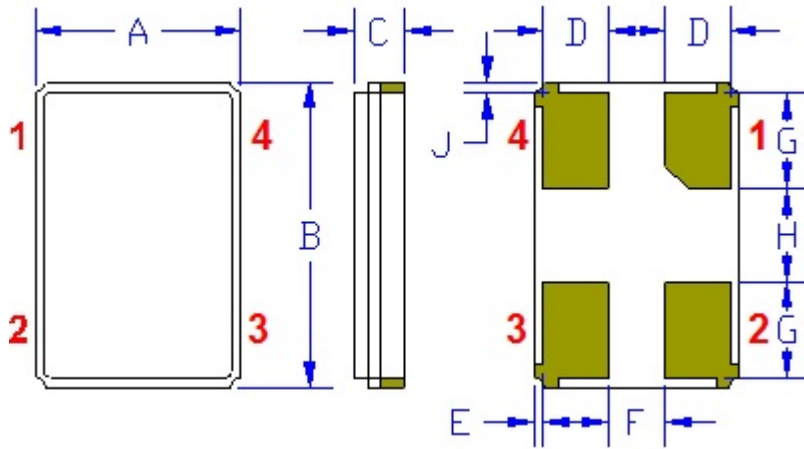
Label is 1" x 2.6" (25.4mm x 66.7mm)
 Font is Courier New
 Bar code is 39-Full ASCII

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

P/N:  SM11T027-25.0M Customer P/N:  12345678 Qty:  1000 D/C  0JX-WY MSL: 1
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RoHS Compliant 2nd Lvl Interconnect Category=e4 Max Safe Temp=260C for 10s 2X Max

Mechanical:



	Inches	mm
A	0.126 ± 0.004	3.2 ± 0.2
B	0.197 ± 0.004	5.0 ± 0.2
C	0.039 max	0.85 max
D ¹	0.031	0.8
E ¹	0.004	0.1
F ¹	0.055	1.4
G ¹	0.043	1.1
H ¹	0.102	2.6
J ¹	0.004	0.1

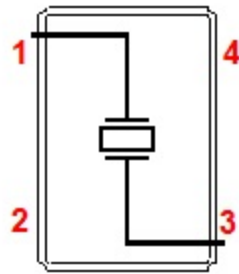
Contacts :

Gold 11.8 μinches 0.3 μm minimum over
 Nickel 50 to 350 μinches 1.27 to 8.89 μm

Not to Scale

¹ Typical dimensions

Connection (top view):



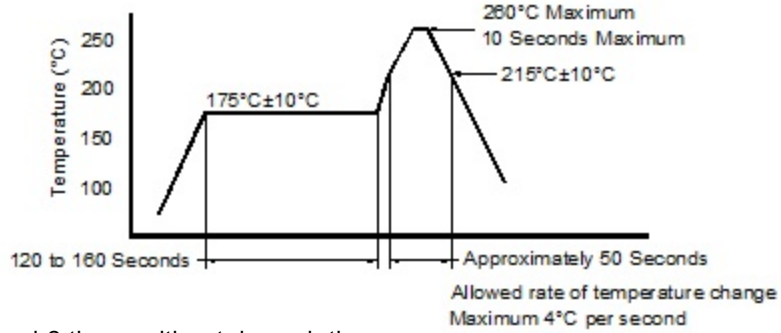
Pad 2 and Pad 4 are common and connected to the metal cover. They are not connected to the crystal.



Layout and application information

- Trace lengths to the crystal should be kept as short as possible.
- The crystal connections are sensitive to noise.
- The package should be grounded for optimum performance, pad 2 and/or pad 4 connected to ground.

Reflow Cycle (typical for lead free processing)



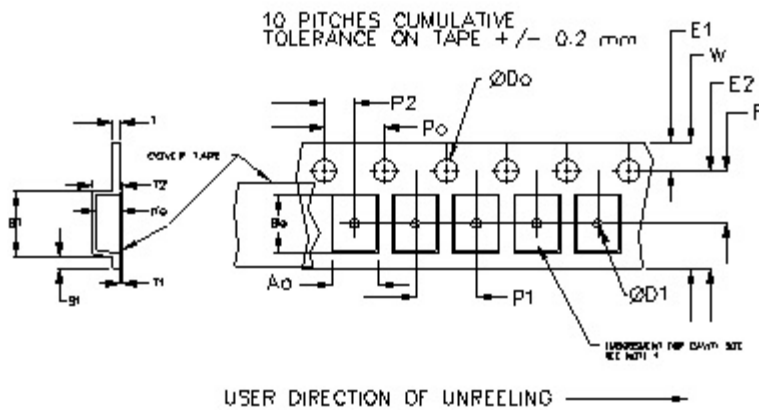
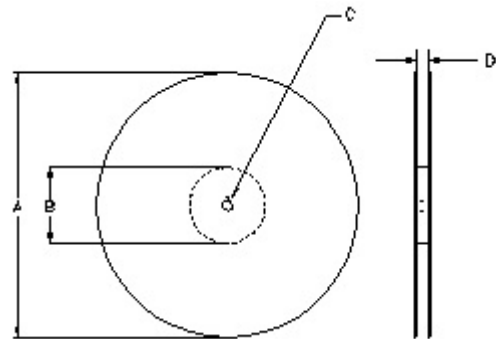
The part may be reflowed 2 times without degradation.

Tape and Reel: available for quantities of 250 to 3000 per reel (<1000 will be cut tape)

Constant Dimensions Table 1								
Tape Size	D0	D1 Min	E1	P0	P2	S1 Min	T Max	T1 Max
8mm	1.5	1.0	1.75	4.0	2.0 ±0.05	0.6	0.25	0.1
12mm		1.5			2.0 ±0.1			
16mm	+0.1 -0.0	1.5	±0.1	±0.1	2.0 ±0.1			
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			Tape Width
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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