PCN: V10-001-48475418-1A

Product Change Notice

Issue Date: 3rd February 2010

Type of Change(s):

Avago Technologies has qualified a new supplier for S4 surface mount LED display.

Parts Affected:

HDSM-281C	HDSM-291C	HDSM-531C	HDSM-541C
HDSM-281F	HDSM-291F	HDSM-531F	HDSM-541F
HDSM-281H	HDSM-291H	HDSM-531H	HDSM-541H
HDSM-281L	HDSM-291L	HDSM-531L	HDSM-541L
HDSM-283C	HDSM-293C	HDSM-533C	HDSM-543C
HDSM-283F	HDSM-293F	HDSM-533F	HDSM-543F
HDSM-283H	HDSM-293H	HDSM-533H	HDSM-543H
HDSM-283L	HDSM-293L	HDSM-533L	HDSM-543L

Description and Extent of Changes:
The selected packaging supplier shall be the replacement for all parts numbers above.
All packages will serve the same functionality as the existing packages.

Reasons for Change:
This migration is to provide continuous support and ensure supply assurance to customers.

Effect of Change on Fit, Form, Function, Quality, or Reliability:
There will be no change in product dimension and the general functions of the product.

There is an improvement in the brightness offering as per table below:-

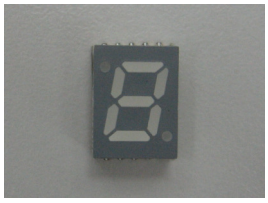
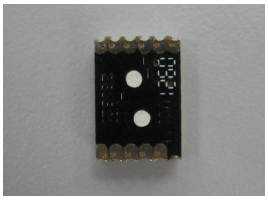
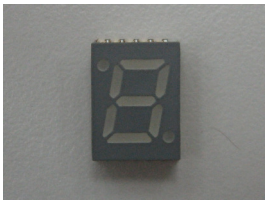
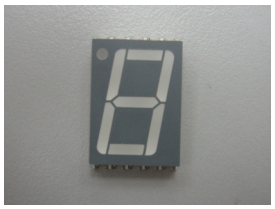
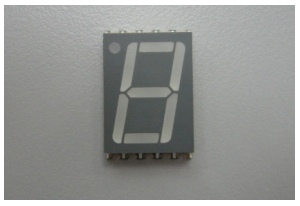
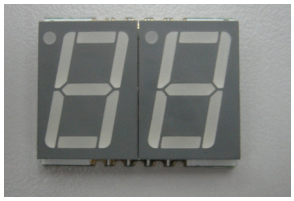
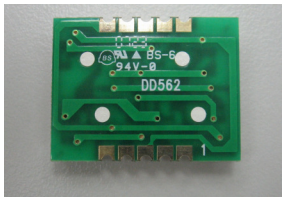
Package type / Color	0.28" (7mm) Single and Dual Digits		0.56"(14mm) Single and Dual Digits	
	Current	**New**	**Current**	**New**
Red	L,M,N	L,M,N,P	N,P	N,P,Q,R
Orange	L,M,N	L,M,N,P	N,P,Q	N,P,Q,R
Yellow	L,M,N	L,M,N,P	N,P,Q	N,P,Q,R
Green	L,M	L,M,N,P	M,N	M,N,P,Q

Binning spec limit

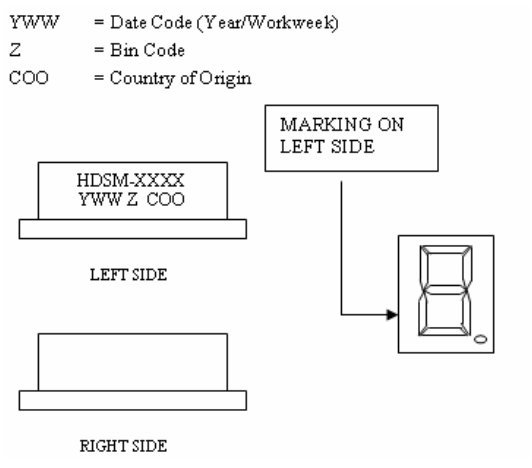
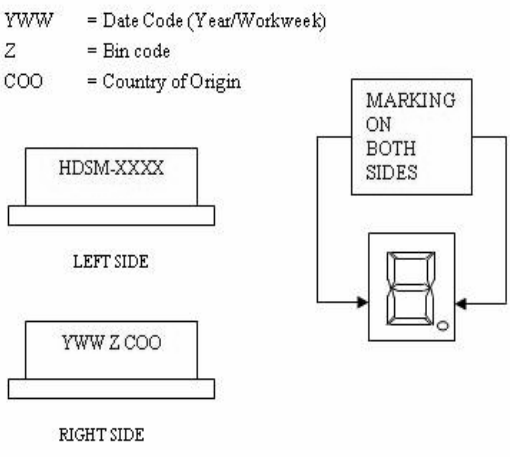
Category	Min	Max
L	3.401	5.400
M	5.401	8.600
N	8.601	13.700
P	13.701	21.800
Q	21.801	34.700
R	34.701	55.200

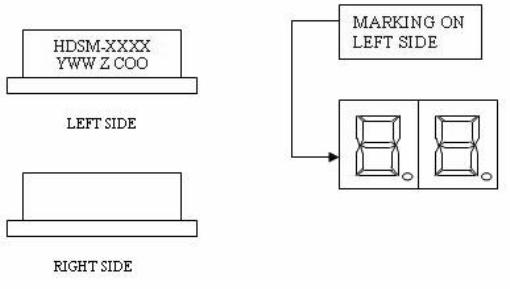
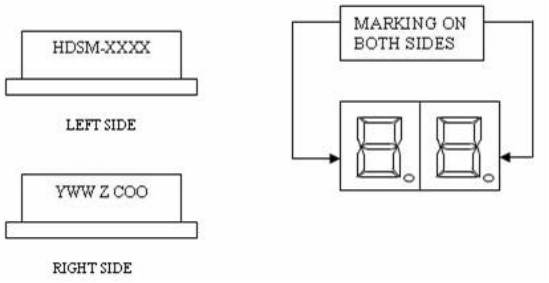
Tolerance: +/ -15%

There is also a slight difference in the appearance of the package i.e. back color, segment and package appearance between the existing and new package. Below are the pictures showing the difference between them.

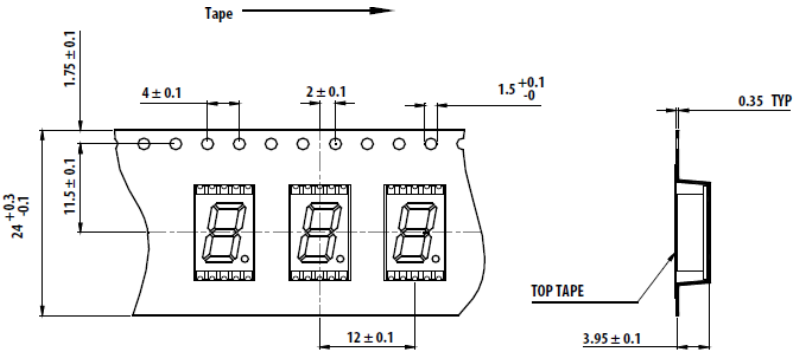
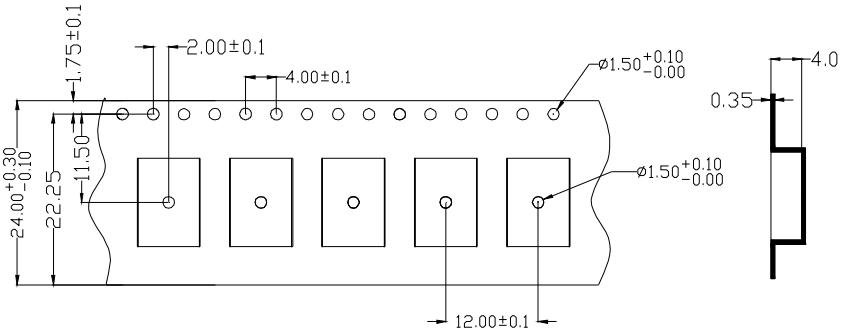
Package type	Picture			
	New ODM Package		Current ODM Package	
	Top view	Bottom view	Top view	Bottom view
0.28" (7mm) Single digit				
0.28" (7mm) Dual digits				
0.56"(14mm) Single digit				
0.56"(14mm) Dual digits				

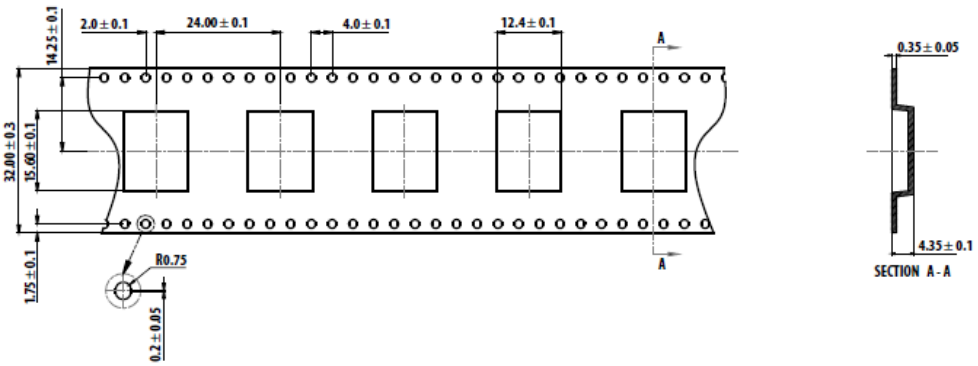
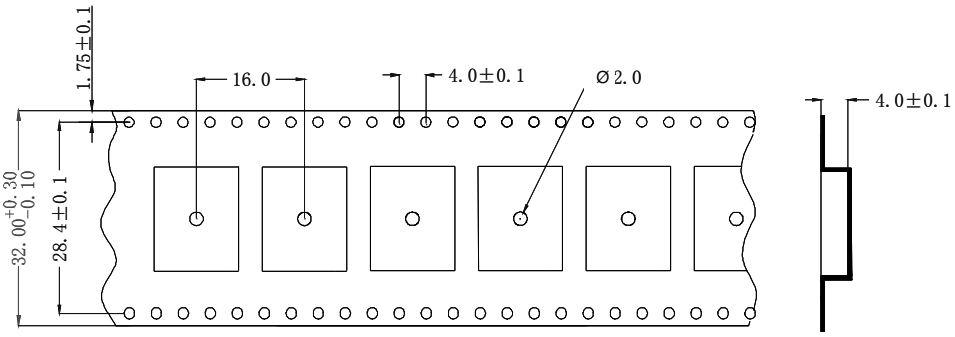
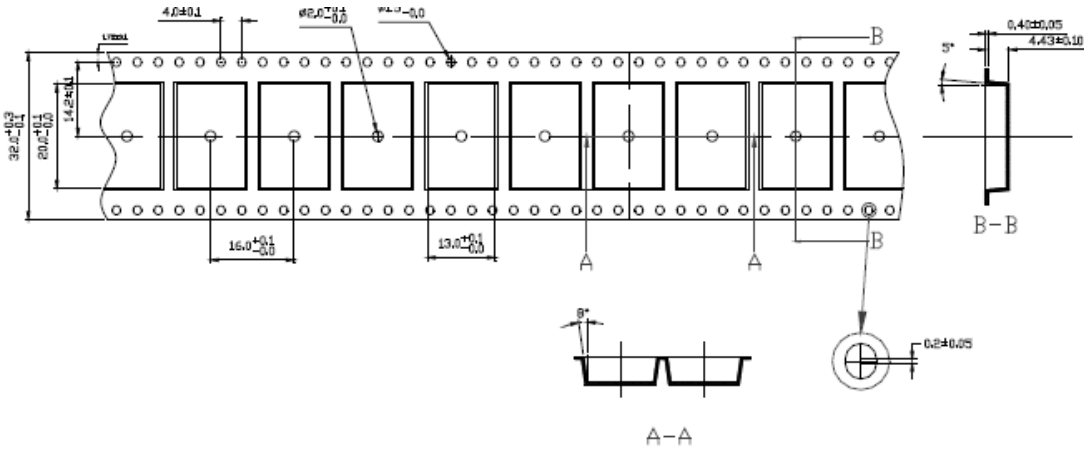
There will be marking location change for 0.56"(14mm) package only. The location of the marking is as shown below.

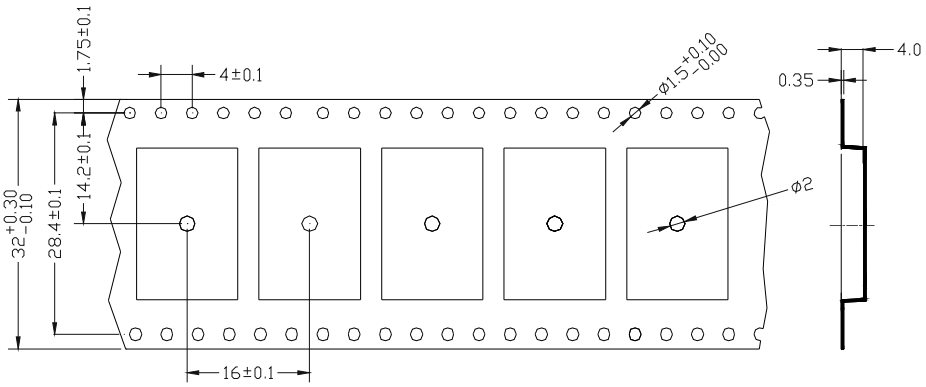
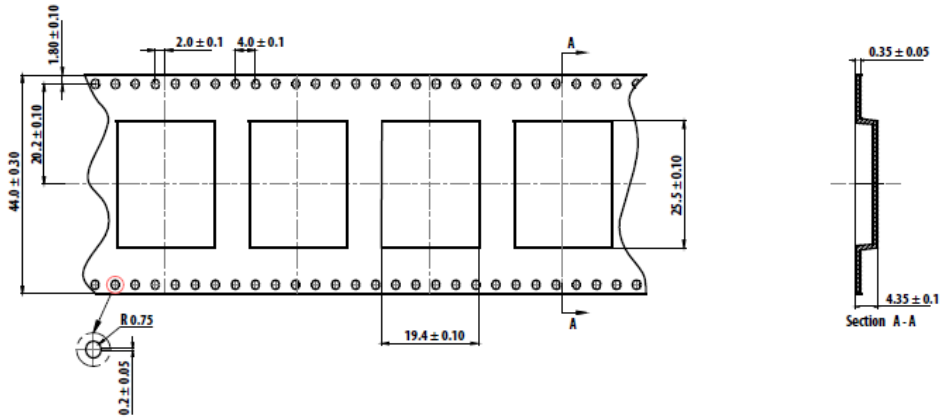
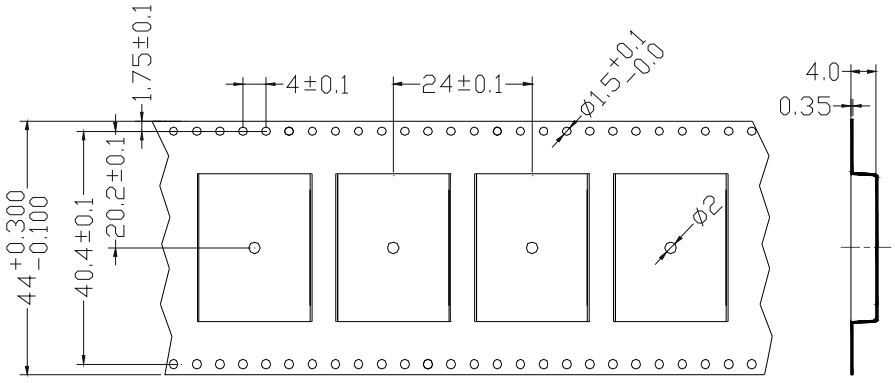
Package type	Current ODM Package	New ODM Package
0.56"(14mm) Single digit		

0.56”(14mm) Dual digits	YWW = Date Code (Year/Workweek) Z = Bin code COO = Country of Origin 	YWW = Date Code (Year/Workweek) Z = Bin code COO = Country of Origin 

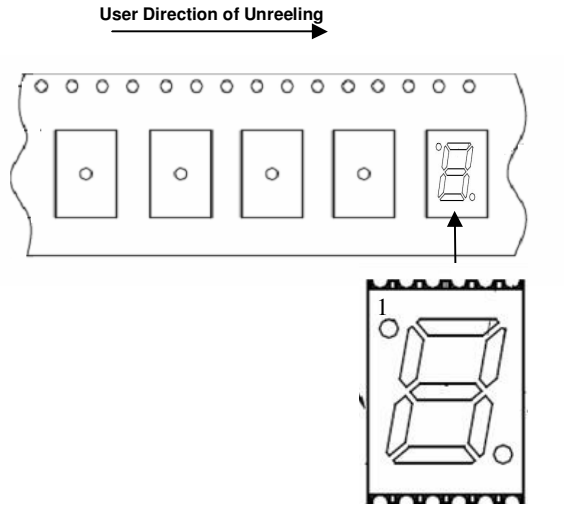
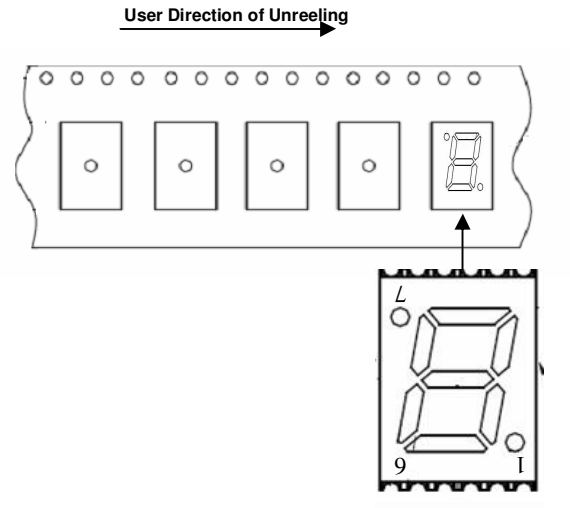
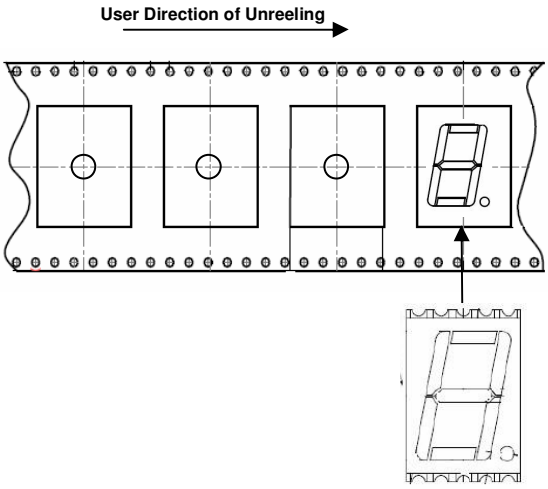
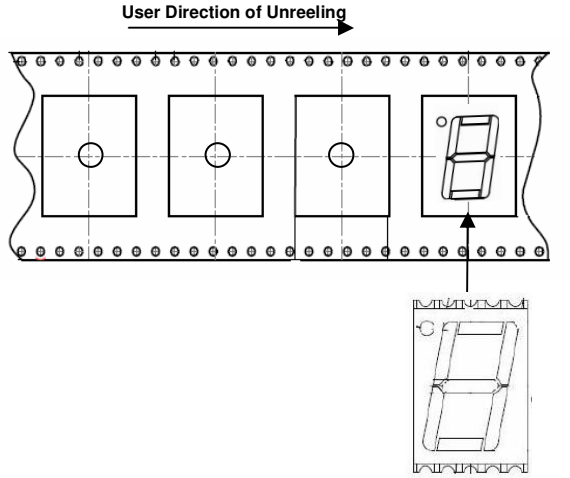
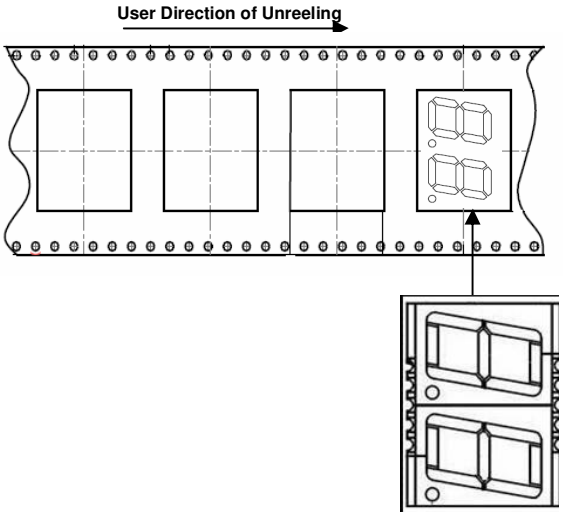
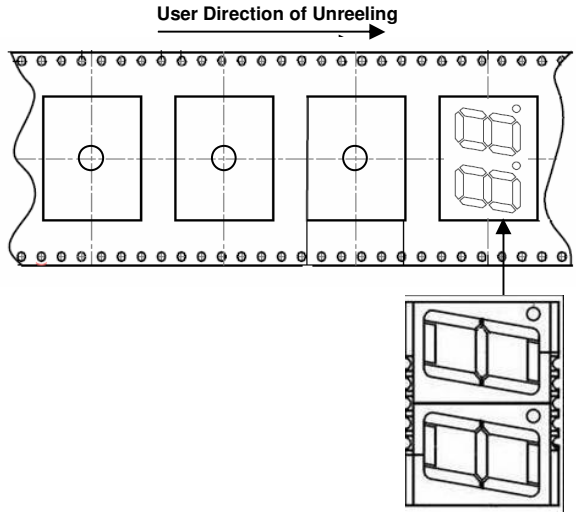
There will be improvement in the carrier tape as shown below:-

Package type	Carrier Tape specification (unit: mm)
0.28” (7mm) Single digit	**Current**  **New** 

0.28” (7mm) Dual digits	**Current**  **New** 
0.56”(14mm) Single digit	**Current** 

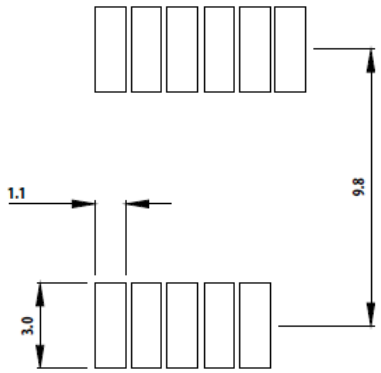
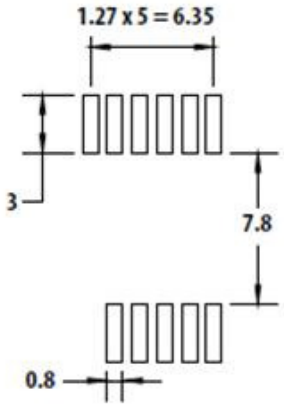
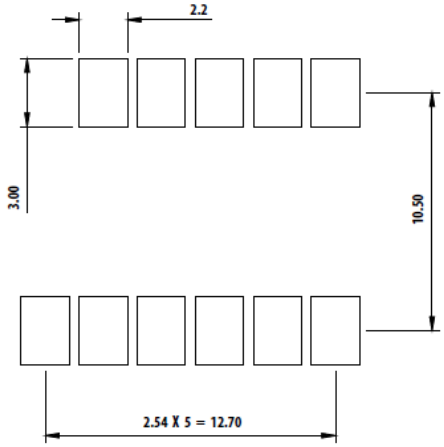
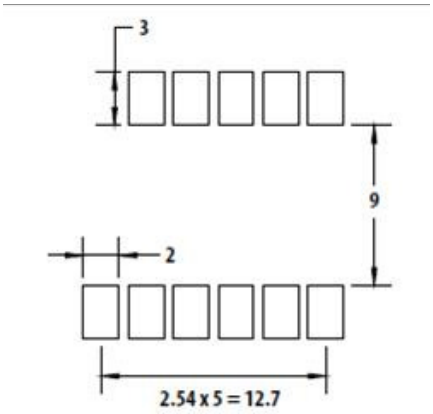
	New 
0.56”(14mm) Dual digits	**Current**  **New** 

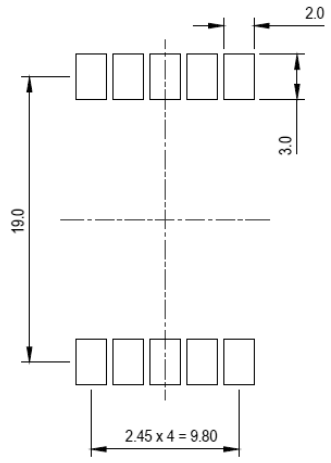
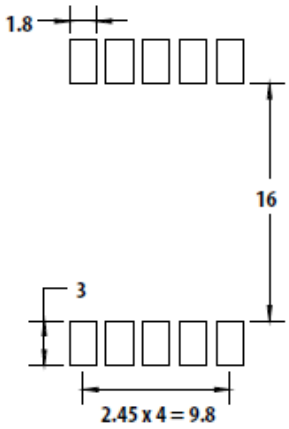
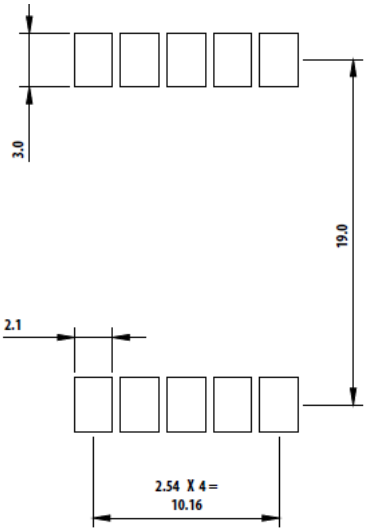
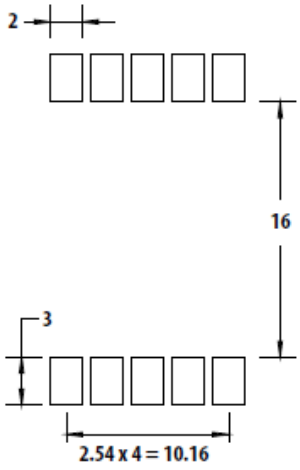
There will be unit orientation change in the carrier tape as shown below:-

Package type	Current ODM Package	New ODM Package
0.28" (7mm) Single digit		
0.56"(14mm) Single digit		
0.56"(14mm) Dual digits		

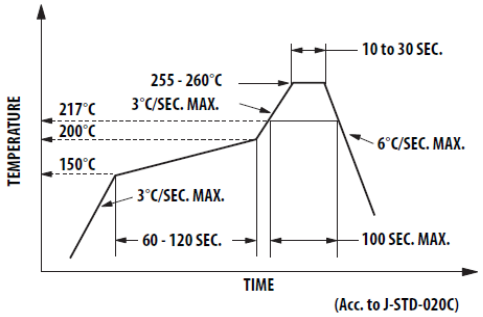
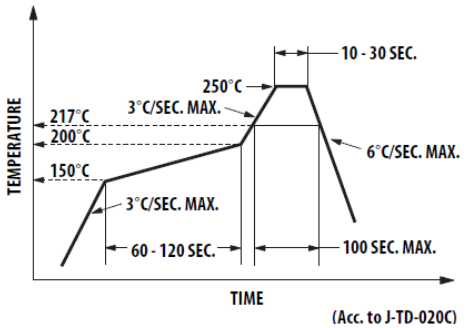
We have also updated the product datasheet to recommend better soldering land pattern and soldering profile for customer end application as shown below .This recommendation is only applicable to customers' PCB design:-

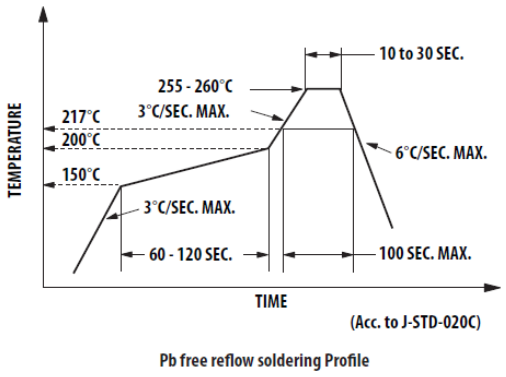
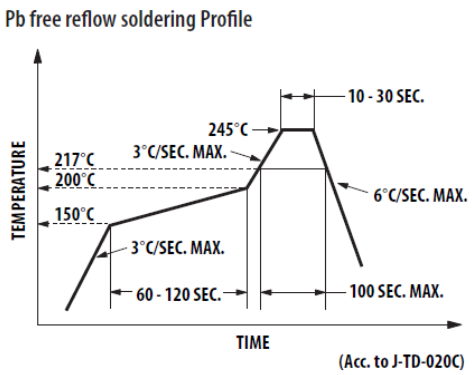
Soldering land pattern

Package type	Current recommended soldering land pattern	New recommended soldering land pattern
0.28" (7mm) Single digit		 Recommended stencil window opening is 80%
0.28" (7mm) Dual digits		 Recommended stencil window opening is 80%

0.56”(14mm) Single digit		 Recommended stencil window opening is 80%
0.56”(14mm) Dual digits		 Recommended stencil window opening is 80%

Soldering Profile

Package type	Current recommended SMT Soldering profile	New recommended SMT Soldering profile
0.28” (7mm) Single digit	 Pb free reflow soldering Profile	Pb free reflow soldering Profile 

0.28" (7mm) Dual digits **and** **0.56"(14mm) Single & Dual digits**	 Pb free reflow soldering Profile	

Remarks: The peak temperature refers to the peak temperature measured on the package.

Effective Date of Change:

Updated product datasheet will be effective by 5th May 2010. Avago Technologies will begin to ship part from the new source by 5th May 2010 onwards. There may be mixed shipments between current and new manufacturing source until the current inventory is fully depleted.

Qualification Data:

Qualification data has been generated and approved. The following are the reliability performance:

Reliability Test	Stress Condition	Result
Temperature Cycle	-40/105℃, 15min/5min/15min ,100x	PASSED
Temperature Humidity Operating Life Test	85°C/85%RH , 5mA, 1000hrs	PASSED
Temperature Humidity Storage Life Test	85°C/85%RH , 1000hrs	PASSED
High Temperature Operating Life Test	105℃, 5mA, 1000hrs	PASSED
Low Temperature Operating Life Test	-40℃, 25mA, 1000hrs	PASSED
Room Temperature Operating Life Test	25℃, 25mA, 1000hrs	PASSED
Solderability	245℃, 5 sec, 1x	PASSED

Please contact your Avago field sales engineer for further details or support requirements.

Thank you for your continuous attention to these changes.

These changes have been reviewed and approved by Avago Technologies engineers and managers per Avago Technologies procedure: Change Control and Customer Notification, A-5962-6052-80.

Please contact your Avago Technologies field sales engineer or Contact Center (http://www.avagotech.com/contact/) for any questions or support requirements. Please return any response as soon as possible, but not to exceed 90 days.