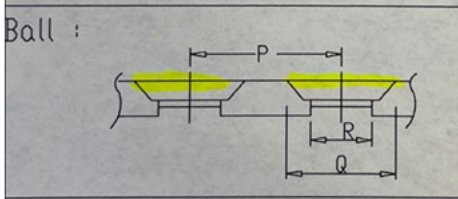
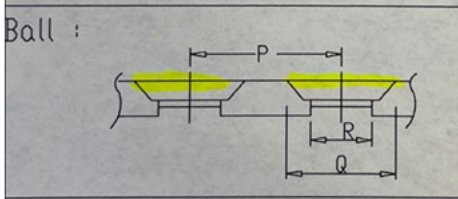
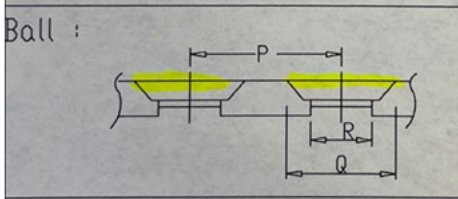


Product Change Notification

PCN Number:	2023-001
Date of Issue:	7/5/2023
PCN Effective Date:	7/5/2023

PCN Information														
Title of Change:	BGA substrate change to improve SnPb balling process													
Customer Approval Required	<input type="checkbox"/>			Notification Only <input checked="" type="checkbox"/>										
Type of Change:	Major <input type="checkbox"/>		Minor <input checked="" type="checkbox"/>		Obsolescence <input checked="" type="checkbox"/>									
Change Affects:	Form <input type="checkbox"/>	Fit <input type="checkbox"/>	Function <input type="checkbox"/>	Quality/Reliability <input type="checkbox"/>	Manufacturability <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>								
Change Description:	<p>VORAGO is implementing a new substrate/ball attach pad plating process for its plastic BGA products to improve manufacturability of the ball attach process. The current substrate bond pad opening from the BGA assembly supplier is 300um with a bare Cu finish. The SnPb solder ball attach done by a different supplier requires cleaning of the Cu bond pads followed by ENIG deposition followed by SnPb solder ball attach. The new BGA substrate will enlarge the ball attach pad opening to 330um and will have electroplated NiAu applied by the assembly supplier. This will eliminate the cleaning and ENIG deposition required by the solder ball attach supplier and facilitate an automated SnPb ball attach process. The yellow highlight in the below picture reflects where the change will be. A Qualification lot is in process per JESD47K with results available on request mid-Q3 2023.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;">  </td> <td style="width: 50%; vertical-align: top;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">P</td> <td>Pitch</td> </tr> <tr> <td>Q</td> <td>Finished Top Ball</td> </tr> <tr> <td>R</td> <td>Finished S/M Opening</td> </tr> </table> </td> </tr> </table>							<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">P</td> <td>Pitch</td> </tr> <tr> <td>Q</td> <td>Finished Top Ball</td> </tr> <tr> <td>R</td> <td>Finished S/M Opening</td> </tr> </table>	P	Pitch	Q	Finished Top Ball	R	Finished S/M Opening
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Potential Impact to Customer:	Once the current supply of Rev A package BGA parts is depleted, only the new Rev B package BGA parts will be available.													
Products Affected by Change:	<u>Obsolete Part Number List:</u> VA41620-PG196F0PBA VA41628-PG196F0PBA VA41629-PG196F0PBA VA41630-PG196F0PBA		<u>New Part Number Revision List:</u> VA41620-PG196F0PBB VA41628-PG196F0PBB VA41629-PG196F0PBB VA41630-PG196F0PBB											
Last Time Buy Date:	N/A													
Last Time Ship Date:	N/A													
Contact Email Address:	info@voragotech.com													