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瑞萨电子公司网址：<http://www.renesas.com>

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瑞萨电子公司

【发行】瑞萨电子公司（<http://www.renesas.com>）

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二极管

瑞萨二极管制造工序上的质量管理

从制造到产品出货，瑞萨一直致力于保证其二极管产品的质量。尤其是在整个制造工序中采用了特别精细的质量管理，因此能迅速检测出产品的异常，有助于保持稳定的质量。

制造工序如图1所示，工序中质量管理的详细内容如图2（玻璃封装型二极管）、图3（塑料封装型二极管）所示。

为保证瑞萨二极管的质量，对产品进行全数检查，并根据JIS Z 9015进行各种抽样检查以及采取定期的可靠性保证体制。

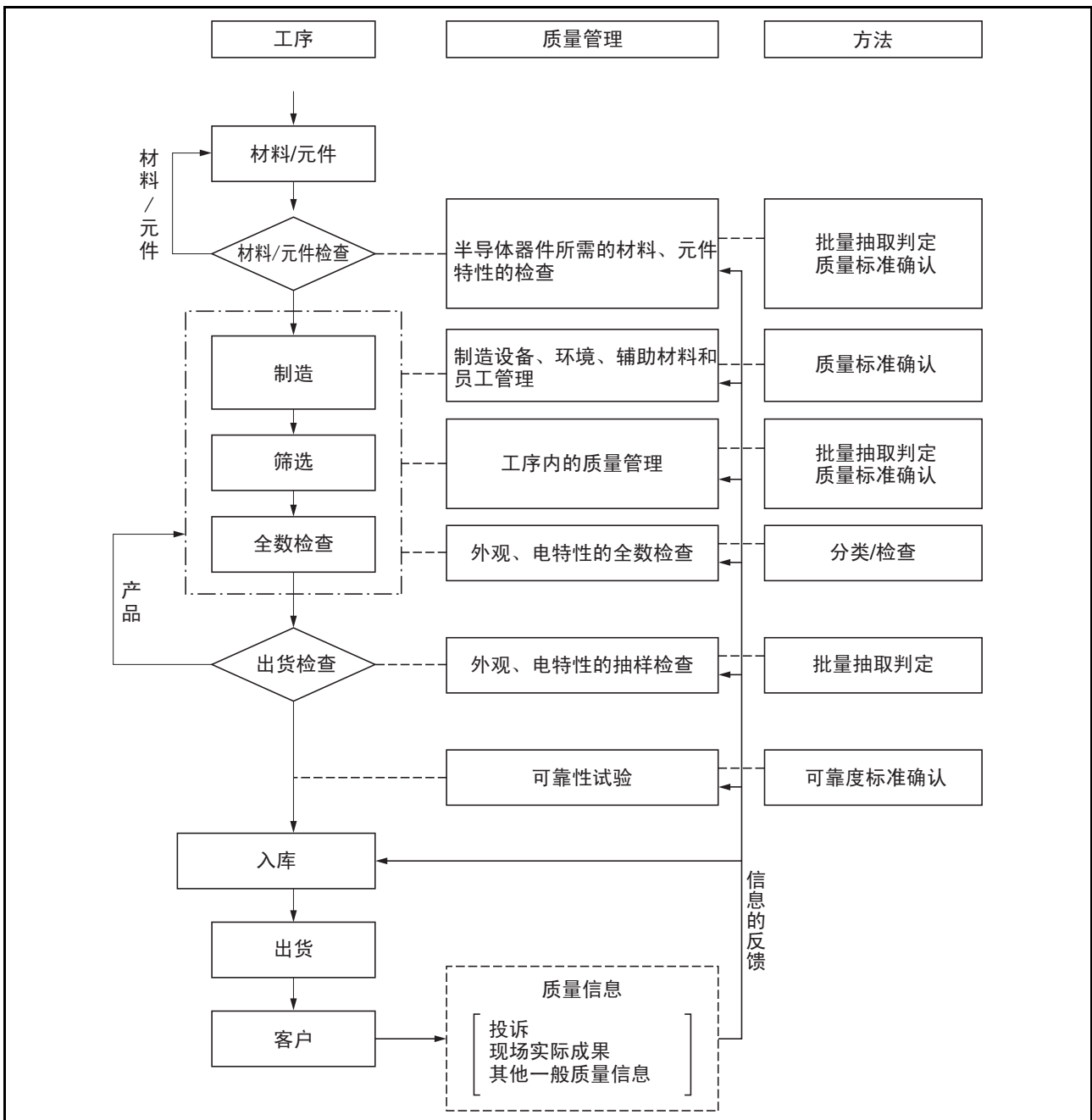


图1 制造工序上的质量管理流程图

工序	管理/确认项目	管理要点
<p>材料购入</p> <p>晶片</p> <p>扩散</p> <p>膜厚度的检查</p> <p>掩模</p> <p>光敏电阻</p> <p>光敏电阻的检查</p> <p>电极形成</p> <p>PQC</p> <p>切片</p> <p>芯片分类</p> <p>芯片清洗</p> <p>PQC</p> <p>引脚玻璃</p> <p>组装</p> <p>封装</p> <p>焊料处理</p> <p>PQC</p> <p>筛选 *1)</p> <p>全数电特性的检查</p> <p>PQC *1)</p> <p>标识</p> <p>卷带、包装</p> <p>出货检查</p> <p>入库</p> <p>出货</p>	<p>型号</p> <p>膜厚度、电阻率</p> <p>晶片外观</p> <p>膜厚度</p> <p>晶片外观</p> <p>芯片外观</p> <p>芯片外观</p> <p>型号</p> <p>外观检查, 焊料膜厚度</p> <p>加振IR</p> <p>电特性</p> <p>分类故障分析</p> <p>卷带尺寸</p> <p>电特性、外观</p>	<p>指定购入元件的确认</p> <p>标准膜厚度的确保</p> <p>扩散状态的掌握</p> <p>指定购入元件的确认</p> <p>划痕、错位</p> <p>标准膜厚度的确保</p> <p>划痕、电极形成状态的掌握</p> <p>正品、次品的分类</p> <p>芯片划痕、裂纹</p> <p>指定购入元件的确认</p> <p>外观的确认</p> <p>分析信息的反馈</p>
<p>○: 作业工序</p> <p>◇: PQC(Process Quality Control)工序</p> <p>□: 检查工序</p>	<p>【注】 *1: H、J规格, 按个别标准实施。</p> <p>*2: 为主要制造流程, 有时工序顺序不同。</p>	

图2 玻璃封装型二极管的质量保证工序图

工序	管理/确认项目	管理要点
<p>材料购入</p> <p>晶片</p> <p>扩散</p> <p>膜厚度检查</p> <p>掩膜</p> <p>光敏电阻</p> <p>光敏电阻的检查</p> <p>电极形成</p> <p>PQC</p> <p>切片</p> <p>芯片分类</p> <p>PQC</p> <p>帧</p> <p>焊接</p> <p>引线键合</p> <p>PQC</p> <p>树脂</p> <p>模制</p> <p>引脚表面处理</p> <p>标识</p> <p>引脚切断</p> <p>PQC</p> <p>全数电特性的检查</p> <p>卷带、包装</p> <p>出货检查</p> <p>入库</p> <p>出货</p>	<p>型号</p> <p>膜厚度、电阻率</p> <p>晶片外观</p> <p>膜厚度</p> <p>晶片外观</p> <p>芯片外观</p> <p>芯片外观</p> <p>型号</p> <p>外观、焊接强度</p> <p>型号</p> <p>切断后的外观检查</p> <p>电特性</p> <p>卷带剥离强度</p> <p>电特性、外观</p>	<p>指定购入元件的确认</p> <p>标准膜厚度的确保 扩散状态的掌握 指定购入元件的确认</p> <p>划痕、错位</p> <p>标准膜厚度的确保 划痕、电极形成状态的掌握</p> <p>正品、次品的分类 芯片划痕、裂纹</p> <p>指定购入元件的确认</p> <p>焊接状态的确认</p> <p>指定购入元件的确认</p> <p>外观的确认</p>
<p>○：作业工序</p> <p>◇：PQC(Process Quality Control)工序</p> <p>□：检查工序</p>	<p>【注】*1：为主要制造流程，有时工序顺序不同。</p>	

图3 塑料封装形二极管的质量保证工序图

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修订记录

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