



ENGINEERING RELEASE RESOURCE

Prototype-to-Production Readiness Checklist

A printable stage-gate checklist for converting prototype learning into controlled low-volume and repeat production.

Gate	Purpose	Exit evidence
EVT	Discover design and build risks.	DFM findings, controlled actions, bring-up evidence.
DVT	Stabilize design, sourcing, and test.	Frozen files, qualified BOM, validated acceptance.
PVT	Prove repeatable production.	Pilot yield, approved process, fixtures, packaging.
Ramp	Control repeat builds and changes.	Yield trend, traceability, CAPA, delivery control.

Project		Current gate	
Owner		Review date	
Ready items		Blocked items	
Decision	☐ Advance ☐ Hold ☐ Conditional	Next review	

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Web resource: pcbapartner.com/blog-static/prototype-to-low-volume-pcba-ramp.html

EVT and DVT release gates

EVT - Engineering Validation Test	Discover and convert uncertainty into controlled actions.
01	☐ Identify one revision for schematic, PCB, BOM, centroid, and assembly drawing. Critical
02	☐ Document critical polarity, orientation, connector, and mechanical constraints. Critical
03	☐ Complete DFM review; assign every open finding an owner and decision date. Critical
04	☐ Mark no-substitute parts, approved alternates, and customer-supplied material. Critical
05	☐ Screen long-lead, lifecycle, MOQ, and counterfeit-sensitive components. Critical
06	☐ Capture prototype process deviations, rework, and build observations.
07	☐ Record bring-up plan, firmware version, instruments, and pass/fail observations. Critical
08	☐ Separate failures into design, assembly, component, or firmware causes.
09	☐ Convert every lesson into an ECO, BOM note, test update, or work instruction. Critical

DVT - Design Validation Test	Stabilize the design, supply plan, process, and test.
01	☐ Freeze electrical and mechanical design changes for validation. Critical
02	☐ Align stack-up, impedance, finish, panel, and assembly data. Critical
03	☐ Control the approved vendor list and substitution approval rules. Critical
04	☐ Confirm material availability supports the pilot quantity and schedule. Critical
05	☐ Document stencil, paste, reflow, inspection, and special-process settings. Critical
06	☐ Agree workmanship, cosmetic, and functional acceptance criteria. Critical
07	☐ Validate test points, fixtures, firmware access, calibration, and coverage. Critical
08	☐ Define serial-number, test-log, and failure-analysis linkage.
09	☐ Close critical design and test findings before DVT exit. Critical

PVT release gate

PVT should prove that the intended line, tooling, inspection, test, records, and packaging can repeatedly produce an acceptable unit.

PVT - Production Validation Test	Prove production repeatability before release.
01	☐ Release one controlled production package and archive the approved revision. Critical
02	☐ Agree production sourcing, buffers, alternates, and excess-material ownership. Critical
03	☐ Validate line setup, feeder plan, first article, SPI/AOI/X-ray, and reflow controls. Critical
04	☐ Review pilot yield, top defects, rework hours, and root causes. Critical
05	☐ Define repair, deviation, CAPA, and customer-notification rules. Critical
06	☐ Approve production fixture, software, limits, takt time, and data retention. Critical
07	☐ Validate ESD, moisture, trays, labels, cartons, and export packaging.
08	☐ Check transport risks for tall, fragile, or mechanical assemblies.
09	☐ Release the golden sample, approved parameters, and process baseline. Critical
10	☐ Authorize low-volume or mass-production release at the PVT exit review. Critical

Required PVT evidence	Owner / location
☐ Approved first article or golden sample Critical	
☐ Pilot yield, defect pareto, rework, and CAPA review Critical	
☐ Production test limits, fixture, software, and log format Critical	
☐ Packaging and shipment validation	
☐ Signed production-release decision with effective lot/date Critical	

Production ramp and handoff

Ramp - Repeat Production	Control yield, changes, traceability, and delivery.
01	☐ Share rolling forecast and replenishment cadence with procurement.
02	☐ Monitor first-pass yield, top defects, cycle time, and schedule adherence. Critical
03	☐ Retain quality records and lot traceability for containment and repeat builds. Critical
04	☐ Control firmware and test-program revisions. Critical
05	☐ Stabilize shipment documents, Incoterms, labels, and partial-shipment rules.
06	☐ Give every engineering change a validation path and effective lot/date. Critical
07	☐ Feed RMA, complaints, and recurring defects into CAPA and process updates.
08	☐ Maintain owners, escalation path, review cadence, and release authority.

Priority handoff package

Package item	Status	Revision / evidence
Released Gerber/ODB++, BOM, centroid, and assembly drawing	☐	
Approved AVL, sourcing rules, and material ownership	☐	
Stencil, reflow, inspection, and special-process baseline	☐	
Programming, ICT/FCT, fixtures, limits, and test logs	☐	
Golden sample, first article, pilot yield, and CAPA records	☐	
Serial/lot traceability and quality-record retention	☐	
Packaging, labels, export documents, and delivery assumptions	☐	
Engineering change, deviation, RMA, and escalation workflow	☐	

Risk review and release decision

Risk score	Priority	Required action
15-25	High	Do not advance without mitigation, owner, and approved exception.
8-14	Medium	Assign mitigation and confirm evidence before the next gate.
1-7	Low	Monitor through the normal review cadence.

Risk	P	I	Score	Owner / mitigation

Release decision	Name / date	Evidence or exception reference
☐ Advance		
☐ Hold		
☐ Conditional release		

Editable workbook: pcbapartner.com/downloads/prototype-to-production-readiness-checklist.xlsx