

Application Notes

Electromechanical Relays

RF Relay

GRF121 Series

Surface Mount High Repeatability SPDT,
Broadband 16 GHz 40Gbps
Magnetic-Latching RF Relay



Application Note 192 Surface Mounting GRF121 Relays

This document provides surface mounting information and printed circuit board (PCB) artwork for circuit traces and RF ground plane configurations. Suggested information provided is intended for use with Teledyne Relays' GRF121 surface mountable, ultraminiature, Extended Centigrid® relays.

GRF121 Test PCB Artwork:

Circuit Side
Back (Ground Plane) Side
Drill Pattern
Trace Detail
Solder Stencil Layout
Ground Shield Detail
Soldermask Layer (Circuit Side)

Test PCB

- Rogers RO4350B High Frequency Laminate
- Dielectric Thickness: .030 +/- .0005 inch
- Copperclad Both Sides: 1 oz/sq ft (.00134 inch)
- Finish: Electroless Nickel / Immersion Gold (ENIG) per IPC-A-600H-2010, Class 2
- All holes to be plated thru, dimensions are after plating
- Layout: Coplanar traces .034" width .0075" gap, Ground VIA pattern .043" parallel to center of traces .040" spacing .015" diameter, Thru path is equivalent to length of 2 relay traces, At board edges traces taper to .025" width to match with SMI 292-04A-5 connectors

Suggested solder stencil thickness: 0.008"

GRF121 relays may be subjected to solder reflow peak temperatures of 250°C maximum, for 1 minute, 3 passes. Relay temperature during soldering shall not exceed 250°C. Check with solder supplier for recommended solder reflow temperature profile for selected solder paste and specific application requirements.

Solder bottom of RF ground shield to PCB component side RF ground plane for optimal RF performance.

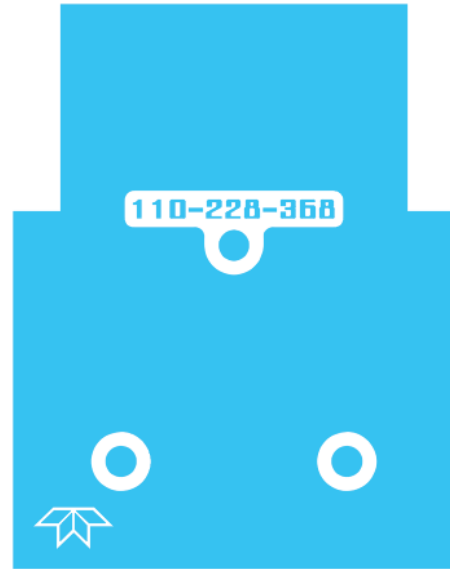
Trace configurations, board material, outline, size, etc. may require changes per user's application requirements.

For more information, call Teledyne Relays at (800) 284-7007.

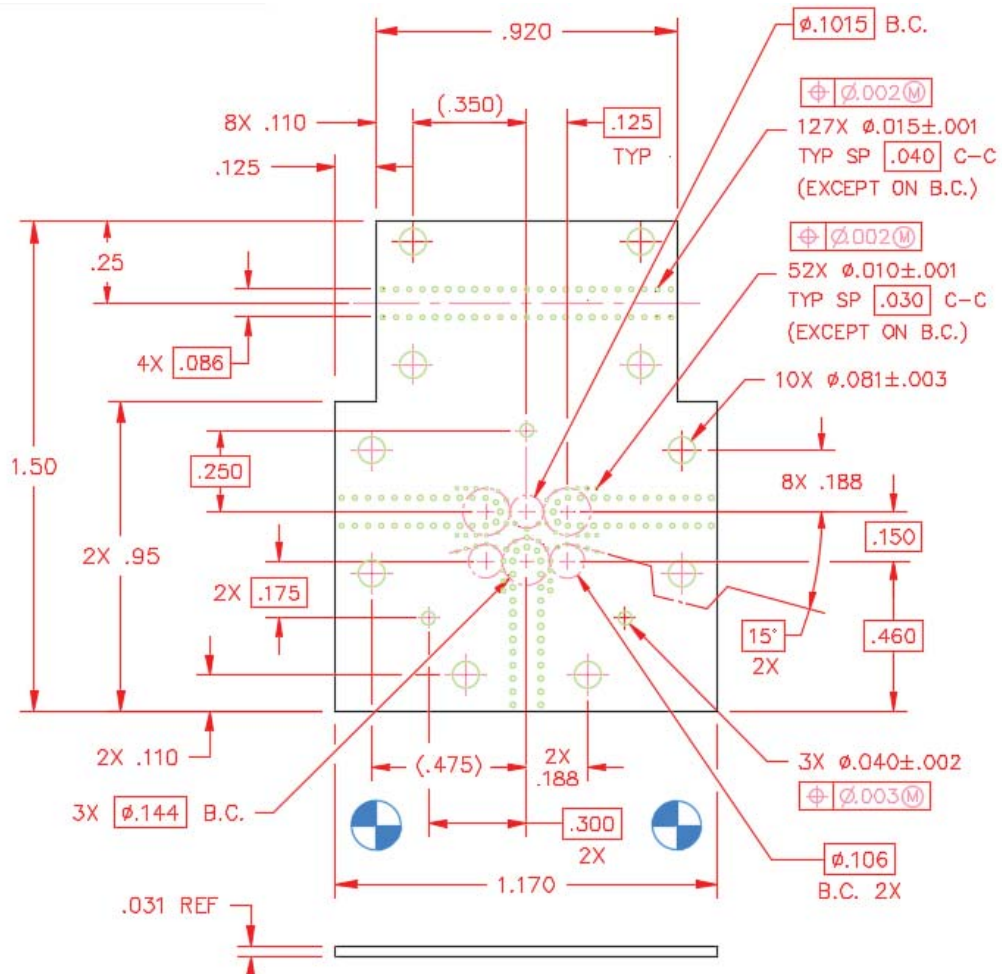
DXF versions of PCB layers, solder stencil, and Ground Shield are available.



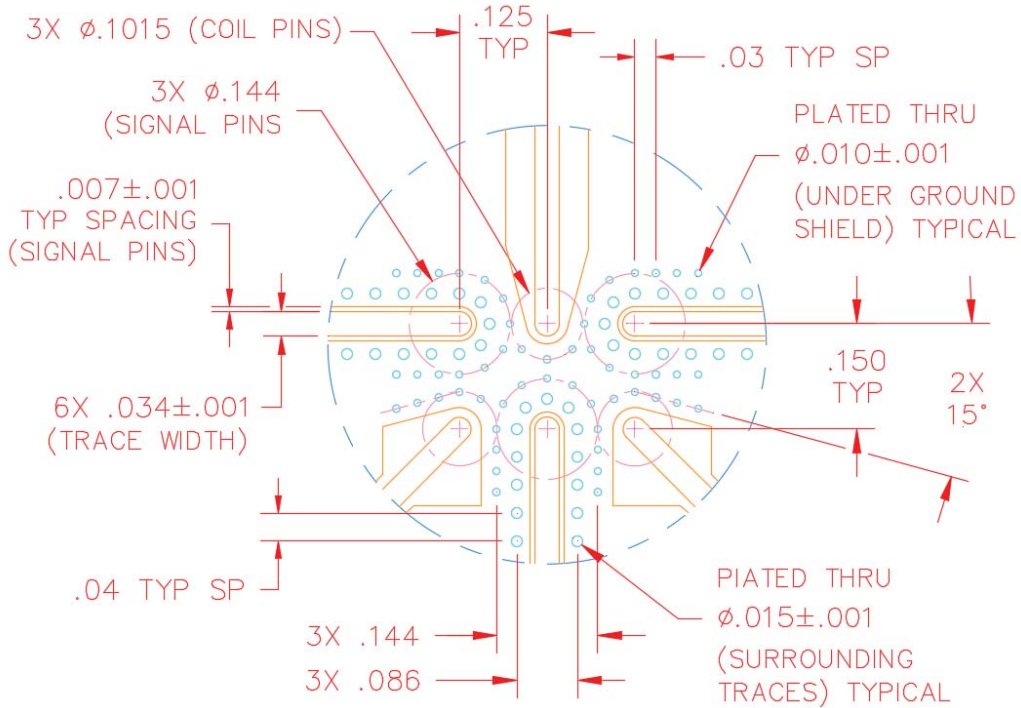
Circuit Side Copper Pattern



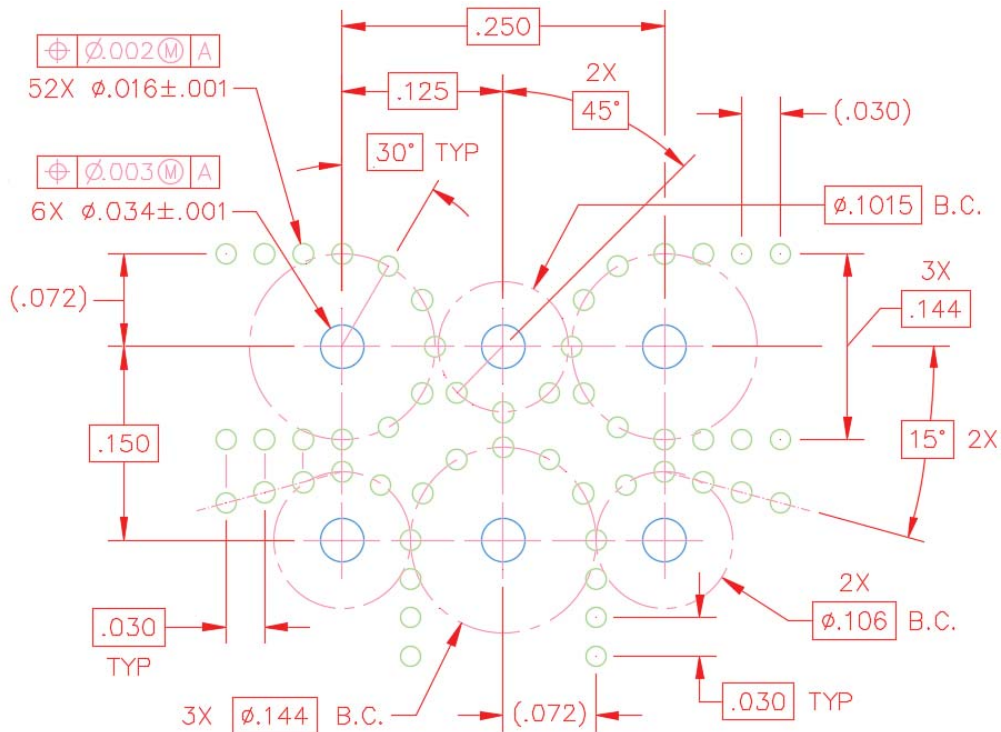
Back Side Copper Pattern



Board Outline and Hole Drill Pattern (Back Side Shown Up)

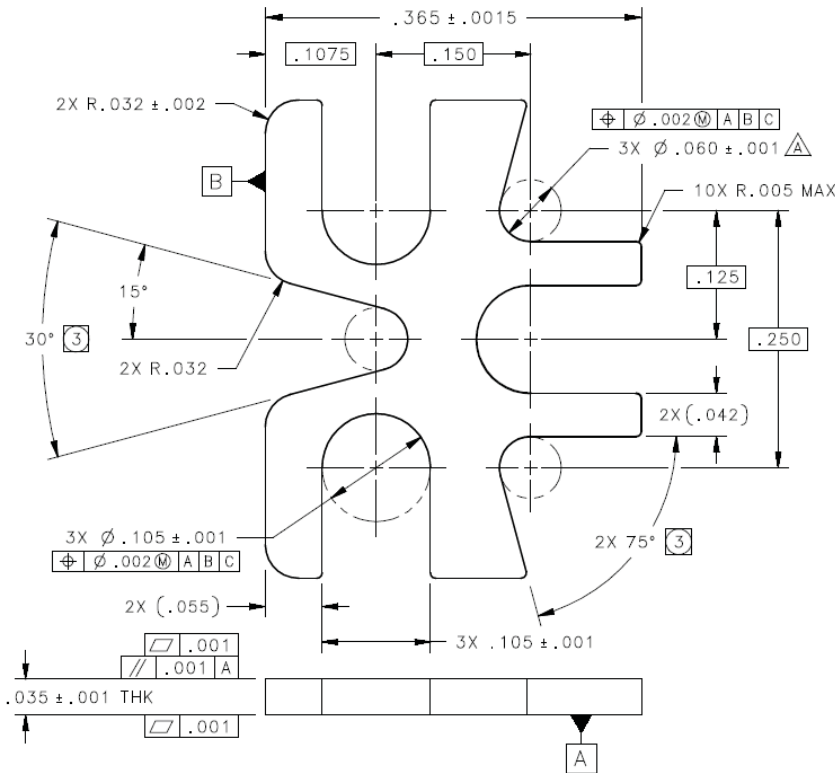


Detail View of Traces beneath Relay (Circuit Side Shown Up)



Max Reflow Temp:
250°C, 3 passes, 1 min each

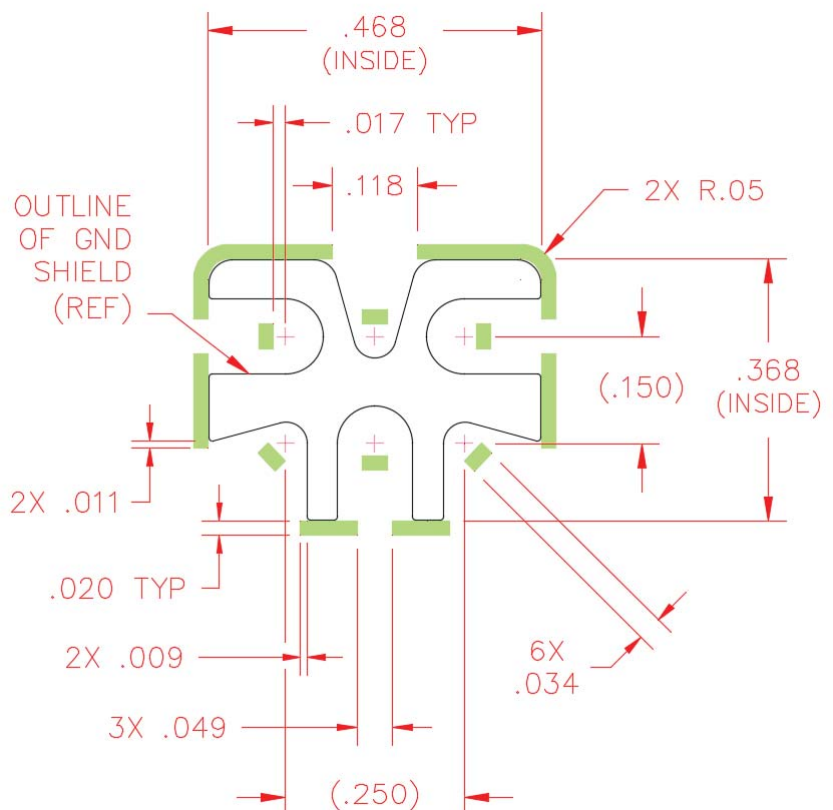
Solder Stencil Layout



GRF121 Ground Shield Outline, shown from below, tab side up.

6 I-leads at each + mark
.017" (+.002, -.001) diameter
.005" max concentricity

Detail of Soldermask layer, referenced to Relay Ground Shield.



Max Reflow Temp:
250°C, 3 passes, 1 min each