

Features

- Surface mount packaging for automated assembly
- Tiny footprint size (0402) and low profile for space-constrained mobile applications
- Ultra-low resistance, quick response
- RoHS compliant* and halogen free**
- Agency recognition:

Applications

- Thermal protection for wearables, Li-ion & polymer battery packs
- PC motherboards – Plug & Play protection
- Mobile phones – battery & charging protection
- USB port protection
- Game console port protection

PRCP-ASML/X Series - Polymer Resettable Circuit Protectors

Electrical Characteristics

Model	V max. Volts	I max. Amps	I _{hold}	I _{trip}	Resistance		Max. Time To Trip		Tripped Power Dissipation	Agency Recognition	
			(A) at 23 °C		(Ω) at 23 °C		(A) at 23 °C	(Sec) at 23 °C	(W) at 23 °C	cUL	TÜV
					R _{min}	R _{1max}			Typ.	E300792	R50458724
PRCP-ASML010/6	6	50	0.10	0.3	0.15	3.0	0.5	1.0	0.5	✓	✓
PRCP-ASML020/6	6	50	0.20	0.5	0.10	1.6	1.0	1.0	0.5	✓	✓
PRCP-ASML035/6	6	50	0.35	0.7	0.05	0.85	8.0	0.1	0.5	✓	✓
PRCP-ASML050/6	6	50	0.50	1.0	0.04	0.50	8.0	0.1	0.5	✓	✓

Environmental Characteristics

Item	Condition	Criteria
Operating Temperature	-40 °C to +85 °C	
Storage Condition	Before Opening	+40 °C max. / 70 % RH max.
	After Opening	+40 °C max. / 10 % RH max.
Floor Condition After Opening	Consumption within 4 weeks at floor condition +30 °C max. / 60 % RH max.	
Passive Aging	+85 °C, 1000 hours	±10 % typical resistance change
Humidity Aging	+85 °C, 85 % R.H. 24 hours	±30 % typical resistance change
Thermal Shock	-40 °C to +85 °C, 20 times	±30 % typical resistance change
Solvent Resistance	MIL-STD-202, Method 215	No change (marking still legible)
Vibration	MIL-STD-883C, Method 2007.1 Condition A	No change (R _{min} < R < R _{1max})
Moisture Sensitivity Level (MSL)	2a	
ESD Classification	Class 6 (per AEC-Q200-2, HBM)	

Test Procedures and Requirements

Item	Test Condition	Accept/Reject Criteria
Visual/Mechanical	Verify dimensions and materials	Per P.R.C.P. physical description
Resistance	In still air @ 23 °C	R _{min} ≤ R ≤ R _{1max}
Time to Trip	At specified current, V _{max} , 23 °C, still air	T ≤ max. time to trip (seconds)
Hold Current	30 min. at I _{hold} , still air	No trip
Trip Cycle Life	V _{max} , I _{max} , 100 cycles	No arcing or burning
Trip Endurance	V _{max} , I _{max} , 48 hours	No arcing or burning
Solderability	245 °C ±5 °C, 5 seconds	95 % min. coverage

* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

** NIDEC COMPONENTS considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine(Br) and Chlorine (Cl) content is 1500 ppm or less.

Specifications are subject to change without notice
Users should verify actual device performance in their specific applications.

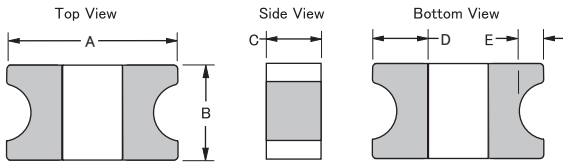
PRCP-ASML/X Series – Polymer Resettable Circuit Protectors

Product Dimensions

Model	Style	A		B		C		D	E
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.
PRCP-ASML010/6	1								
PRCP-ASML020/6	2	$\frac{0.85}{(0.033)}$	$\frac{1.15}{(0.045)}$	$\frac{0.35}{(0.014)}$	$\frac{0.65}{(0.026)}$	$\frac{0.20}{(0.008)}$	$\frac{0.60}{(0.024)}$	$\frac{0.10}{(0.004)}$	$\frac{0.03}{(0.0012)}$
PRCP-ASML035/6	2								
PRCP-ASML050/6	2								

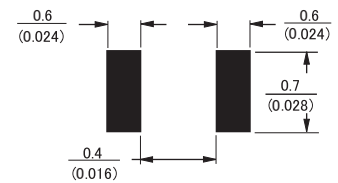
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Style 1

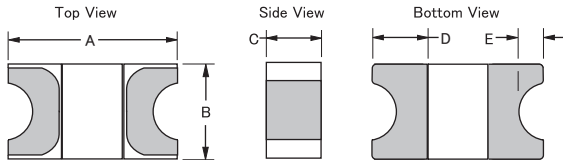


Terminal material:
ENIG-plated terminals

Recommended Pad Layout



Style 2

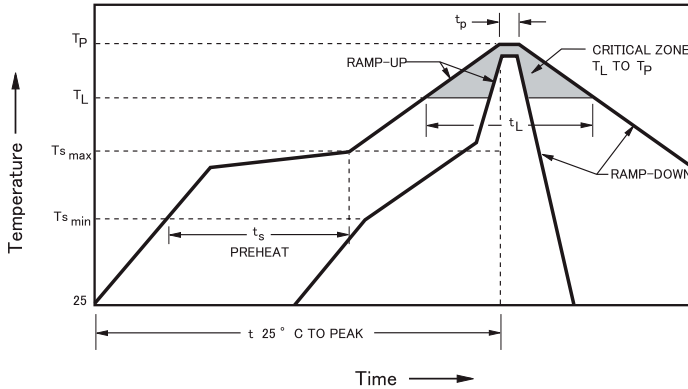


Thermal Derating Table - I_{hold} (Amps)

Model	Ambient Operating Temperature								
	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C
PRCP-ASML010/6	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.04
PRCP-ASML020/6	0.32	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08
PRCP-ASML035/6	0.56	0.49	0.42	0.35	0.28	0.24	0.21	0.17	0.14
PRCP-ASML050/6	0.80	0.70	0.60	0.50	0.40	0.35	0.30	0.25	0.20

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Solder Reflow Recommendations



Notes:

- PRCP-ASML/X models are intended for reflow soldering (including, not limited to heating plate, hot air, IR, nitrogen, and vapor phase).
- Wave soldering is permissible only if the device is on the top of the PCB, opposite the heat source.
- Hand soldering is not recommended for these devices.
- All temperatures refer to the topside of the device, measured on the device body surface.
- If reflow temperatures exceed the recommended profile, devices may not meet the published specifications.
- Compatible with Pb and Pb-free solder reflow profile.
- Excess solder may cause a short circuit.

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (Ts_max to Tp)	3 °C / second max.
PREHEAT: Temperature Min. (Ts_min) Temperature Max. (Ts_max) Time (Ts_min to Ts_max) (ts)	150 °C 200 °C 60~180 seconds
TIME MAINTAINED ABOVE: Temperature (T_L) Time (t_L)	217 °C 60~150 seconds
Peak Temperature (Tp)	260 °C
Time within 5 °C of Actual Peak Temperature (tp)	20~40 seconds
Ramp-Down Rate	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

How to Order

PRCP - ASML 050 / 6 - 2

Product Designator

Series
ASML = 0402 Low Ohmic Surface Mount Component

Hold Current, I_hold
010 - 050 (0.10 Amps - 0.50 Amps)

Maximum Voltage, V_max
6 = 6 Volts

Packaging
-2 = Tape and Reel
Packaged per EIA-481

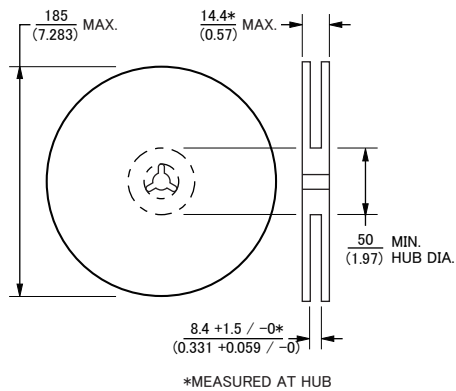
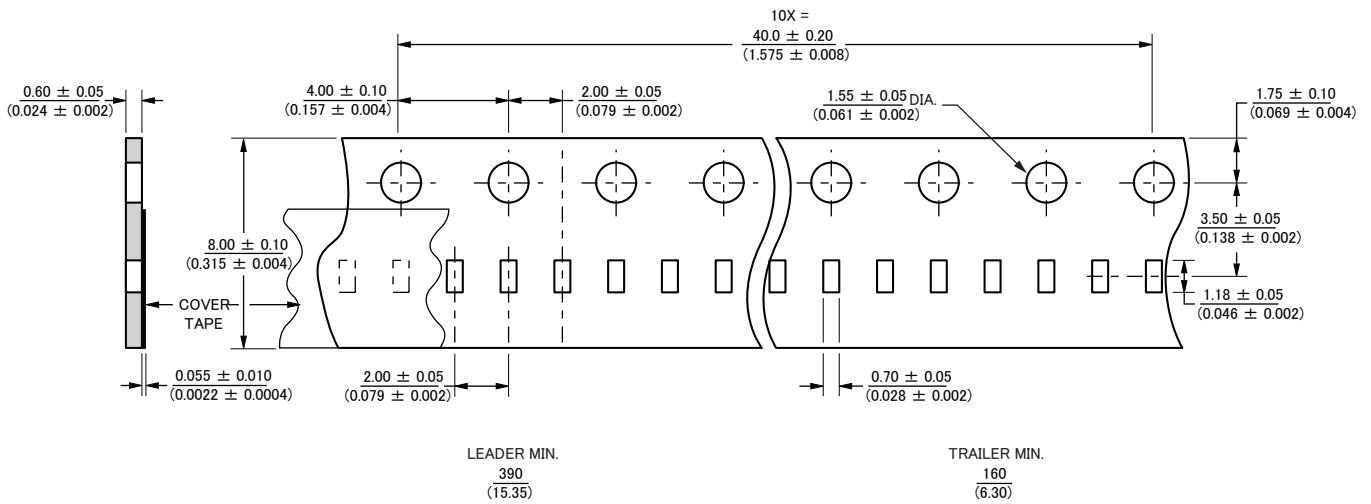
Typical Part Marking

No marking.

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Packaging Specifications

PRCP-ASML/X Series per EIA-481



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$