

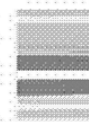


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Food and Drug Administration
Center for Tobacco Products
Document Control Center (DCC)
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RE: Premarket Tobacco Product Application – Vuse Solo ENDS Products

Dear Madam or Sir:

RAI Services Company,¹ on behalf of R.J. Reynolds Vapor Company (“RJR” or the “Company”), hereby submits this Premarket Tobacco Product Application (“PMTA” or the “Application”) to the U.S. Food and Drug Administration (“FDA” or “the Agency”). RJR is seeking a marketing order under Section 910(c)(1)(A)(i) of the Federal Food, Drug, and Cosmetic Act (“FD&C Act” or the “Act”), as amended by the Family Smoking Prevention and Tobacco Control Act, for the Vuse Solo Electronic Nicotine Delivery Systems (ENDS) products listed in [Section A.3](#) below. With this cover letter, RJR is submitting a complete PMTA, organized according to the recommendations in FDA’s 2019 Guidance for Industry (FDA 2019).

Each of the Vuse Solo ENDS tobacco products in this Application consists of a power unit that works in combination with closed e-liquid cartridges. Two generations of Vuse Solo cartridge designs, designated as Generation 1 (G1) and Generation 2 (G2), are included in this Application. Seven Vuse Solo e-liquid flavors are available in each of these two cartridge designs. Both cartridge designs work with the same power unit, contain the same volume and formulations of e-liquids, and are not readily distinguishable by the consumer. The materials and construction of the two cartridges are very similar, with the primary differences being the outer tube material (G1 uses stainless steel, G2 uses Tritan™ copolyester) and the placement of the authentication/memory chip.

RJR’s testing of Vuse Solo includes a range of scientific studies using well-known and established methodologies for the comparative assessment of tobacco products and associated health risks. The data and information submitted with this Application include the results of product analyses, nonclinical health risk information, and human health impact information, including the impact to both users and nonusers of tobacco products. The results of these studies demonstrate that the marketing of these Vuse Solo products is appropriate for the protection of public health.

¹ RAI Services Company (“RAIS”) is a wholly owned subsidiary of Reynolds American Inc. (“RAI”) that coordinates regulatory compliance for RAI’s subsidiary companies, including R.J. Reynolds Tobacco Company (“RJRT”) and R.J. Reynolds Vapor Company (“RJR”). References herein to “Company” may pertain individually and/or collectively to RAIS, RJRT, RJR, and/or an affiliated subsidiary company, as appropriate.

Based on the data and information included in this Application, RJRV requests that FDA issue orders authorizing the marketing of these Vuse Solo products.

This Application contains confidential commercial and non-public trade secret information belonging to the Company or its vendors and is exempt from public disclosure under 21 U.S.C. §§ 331(j) and 387f(c) and 5 U.S.C. §§ 552 (b)(4). We respectfully request that FDA maintain the confidentiality of the information in this Application.

The Company appreciates FDA's careful consideration of this Application and looks forward to working with the Agency to secure a marketing order under Section 910(c)(1)(A)(i) of the FD&C Act for the Vuse Solo tobacco products discussed herein. Please contact the undersigned with any questions.

Respectfully,



Michael W. Ogden, Ph.D.
Senior Vice President – Scientific & Regulatory Affairs
RAI Services Company

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H. Scientific Studies and Analyses

H.1 Product Analyses and Manufacturing

H.1.1 Components, Ingredients, and Additives

FD&C Act §910(b)(1)(B) requires a full statement of the components, ingredients, additives, and properties, and of the principles of operation of new tobacco products. FDA interprets this statutory requirement to mean that applicants should provide a complete list of uniquely identified components, ingredients, and additives by quantity in each new product, as well as the applicable specifications and description of the intended function for each (FDA, 2019a).

H.1.1.1 Finished Product – Aerosolizing Apparatus with E-liquid

Vuse Solo is an electronic nicotine delivery system (ENDS) consisting of a power unit that works in combination with closed e-liquid cartridges. R.J. Reynolds Vapor Company ("RJRV") is the owner and registrant for Vuse Solo products and is responsible for product specifications and materials procurement. R.J. Reynolds Tobacco Company ("RJRT"), under contract with RJRV, manufactures these Vuse Solo products.

The power unit and cartridges are not adjustable by the user. The closed design of the cartridges and the absence of adjustable parameters on the power unit and cartridges mitigate the potential for a consumer to change product characteristics, adjust product performance, or modify product ingredients. The power unit and cartridge use a proprietary snap-fit connection unique to Vuse Solo.

The Vuse Solo Kit includes the following components and accessory:

- A rechargeable Vuse Solo Power Unit (Figure H-1)
- Prefilled Vuse Solo Replacement Cartridges¹ (Figure H-2)
- An accessory USB charger for the power unit (Figure H-3)

Figure H-1: Vuse Solo Power Unit



Figure H-2: Vuse Solo Replacement Cartridge



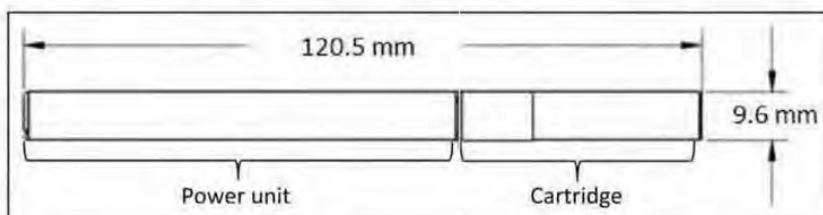
¹ "Replacement Cartridges" and "Cartridges" are used interchangeably throughout this Application to describe the cartridge component of the Vuse Solo products.

Figure H-3: Accessory USB Charger



Figure H-4 illustrates the nominal length and diameter of an assembled Vuse Solo cartridge and power unit.

Figure H-4: Nominal Dimensions, Assembled Vuse Solo



H.1.1.2 Power Unit Components and Design

The section provides detailed technical descriptions of the Vuse Solo Power Unit. The power unit is composed of several components and contains a rechargeable battery that powers the e-cigarette.

Figure H-5 shows a photo of the power unit with the overall nominal dimensions.

Figure H-5: Nominal Dimensions, Vuse Solo Power Unit



H.1.1.2.1 Vuse Solo Power Unit Components

Figure H-6 shows a detailed view of the power unit to illustrate each of the components of the power unit.

Figure H-6: Vuse Solo Power Unit Detailed View

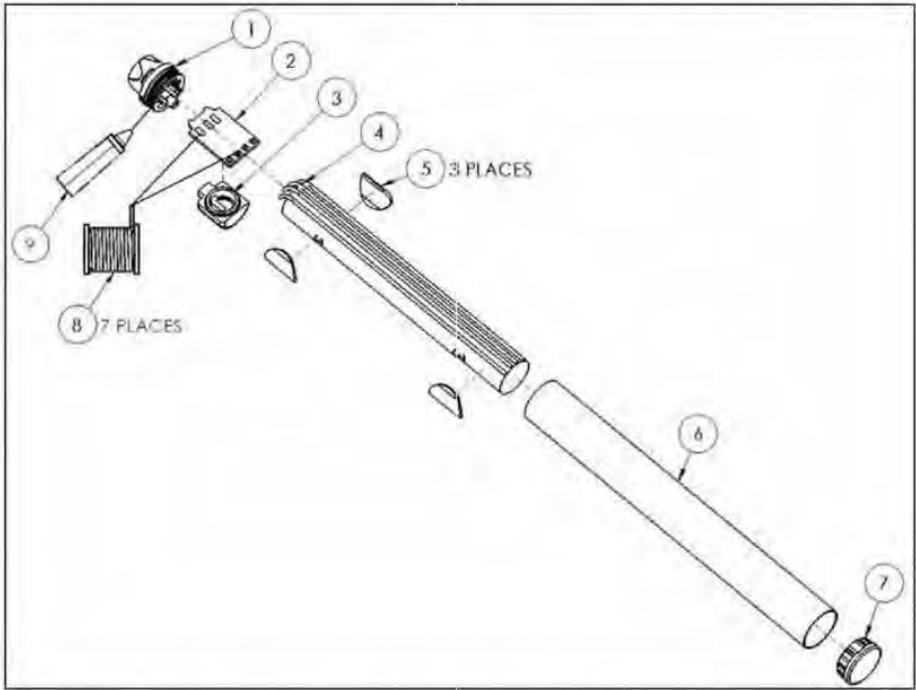


Table H-1 provides a description and material composition of each component of the Vuse Solo Power Unit.

Table H-2 illustrates the location within the assembly shaded in dark gray. A picture of each component is also provided (not to scale).

Table H-1: Vuse Solo Power Unit Components

#	Name/Description	Material
1	Connector Assembly	Polycarbonate, tin-plated copper
2	PCBA (printed circuit board assembly)	Fiberglass/epoxy board, electronics
3	Seal	Silicone elastomer
4	Battery	Lithium-ion battery assembly
5	Battery Foam	Ethylene-vinyl acetate copolymer
6	External Tube	304 Stainless steel
7	End Cap	Polycarbonate
8	Solder	Lead-free solder
9	Glue	Silicone adhesive

The total weight of the Vuse Solo Power Unit is nominally 12.5 grams.

Table H-2: Vuse Solo Power Unit Component Details

#	Location and Description	Physical Appearance
1	Connector Assembly:  The "Connector Assembly" is composed of four subcomponents (described below) that, combined, provide the mechanical and electrical connections in the power unit that connect with corresponding components in the cartridge. After the power unit is assembled, the connector is etched with a date code (partially displayed in the following image). 	 Bottom view  Top view  Computer aided design (CAD) model

#	Location and Description	Physical Appearance
1a	<i>Subcomponent:</i> The "Connector" is made from polycarbonate and locks the terminals in place while electrically insulating them from each other. This component connects to the cartridge and uses four trapezoidal features to limit rotation after connection.	 Bottom view  Top view
1b	<i>Subcomponent:</i> The "Contact, Signal Center" or signal pin, is made from tin-plated copper and provides the inner ring contact that connects with the inner contact of the cartridge.	
1c	<i>Subcomponent:</i> The "Contact, Ground" or ground pin, is made from tin-plated copper and provides the middle ring contact that connects with the middle contact of the cartridge.	
1d	<i>Subcomponent:</i> The "Contact, Plus Voltage" or power supply pin, is made from tin-plated copper and provides the outer ring contact that connects with the outer contact of the cartridge.	

#	Location and Description	Physical Appearance
2	Printed Circuit Board Assembly (PCBA):  The PCBA holds the pressure sensor, controller, and other electronic components. The PCBA senses a puff, drives the heater coil, regulates battery charging, and authenticates the cartridge. The PCBA receives four leads from the battery assembly (see part #4 "Battery" below for an image of the four leads): • (red) positive voltage • (black) negative voltage • (blue) connection to the red light-emitting diode (LED) • (yellow) connection to the white LED The PCBA also has three solder points that align with the three electrical terminals in the connector that interface with the cartridge or accessory USB charger: • Contact, signal center • Contact, ground (negative) • Contact, plus voltage	 Top view  Bottom view
3	Seal:  The "Seal" is made from silicone elastomer and forms a seal around the pressure sensor on the PCBA, isolating vacuum draw from ambient pressure. Using this pressure differential, the PCBA determines when air is drawn through the cartridge.	 Bare seal  Seal on PCBA

#	Location and Description	Physical Appearance
4	Battery:  The "Battery" is an assembly which includes: • a single-cell 3.7 V (nominal) rechargeable lithium-ion battery • a PCBA which holds a protection integrated circuit (IC) and red and white LEDs to provide visual feedback to the consumer during use • color coded wires • Kapton tape The battery PCBA, wires, and tape are assembled onto the battery cell, as pictured here, prior to the power unit assembly build. The battery assembly is integrated into the product, such that it is not accessible and cannot be replaced by the consumer. The battery cell has been tested and conforms to the following standards: • UN38.3 • IEC 62133 • UL 1642 • For battery certifications, see Vuse Solo Power Unit Battery Certifications.	  
5	Battery Foam:  The "Battery Foam" is made from ethylene-vinyl acetate (EVA) with an adhesive backing. This component cushions the battery at three locations and secures the battery within the external tube.	
6	External Tube:  The "External Tube" is made from 304 stainless steel and forms the outer housing of the power unit, encapsulating all power unit components.	

#	Location and Description	Physical Appearance
7	End Cap:  The "End Cap" is made from polycarbonate with a branded applique and closes one end of the power unit tube. Two recessed sections around the circumference allow air to enter the product to maintain atmospheric pressure on the vented side of the PCBA pressure sensor. Illumination of the LEDs is visible through the end cap.	 Top view  Bottom view
8	Solder:  "Solder" is lead-free solder used to create the electrical connections at the PCBA.	
9	Glue:  The "Glue" is a silicone adhesive that is applied to seal the connector cavity of the PCBA on the side where the connectors are soldered. In conjunction with the silicone seal, the adhesive isolates vacuum draw from ambient pressure.	

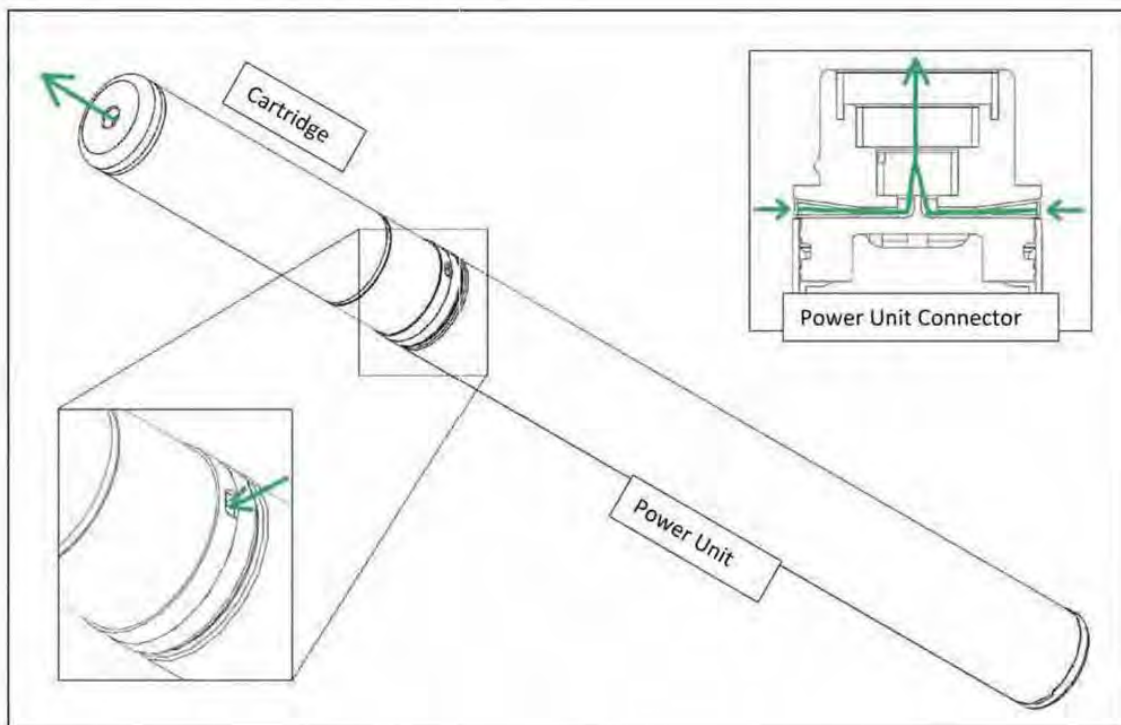
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H.1.1.2.2 Vuse Solo Power Unit Air Flow Path

Figure H-7 shows the path of air through the product when air is drawn through the cartridge. Inlet airflow enters at two locations on the power unit connector and travels axially through the cartridge exiting at the mouth end cap.

Figure H-7: Vuse Solo Power Unit Air Flow Path



H.1.1.2.3 Vuse Solo Power Unit Vacuum Draw

Figure H-8 shows how Vuse Solo functions when air is drawn through the cartridge and depicts the airflow (green) through the power unit connector that generates a slight vacuum in the power unit (light blue), which acts on one face of the pressure sensor. The opposite face of the pressure sensor is vented to atmosphere (dark blue) and the induced pressure differential activates the pressure sensor. The two sides of the pressure sensor (orange) are sealed to allow for this pressure differential.

Figure H-11: Vuse Solo G1 Cartridge (Original Flavor)



H.1.1.3.1.1 Vuse Solo G1 Cartridge Components

A detailed view of the Vuse Solo G1 Replacement Cartridge is shown in Figure H-12 to illustrate each of the components that compose the cartridge. These components are described (by the labeled numbers) in the following sections. A cross-sectional view of the assembled Vuse Solo G1 Replacement Cartridge is shown in Figure H-13.

Figure H-12: Vuse Solo G1 Cartridge Detailed View

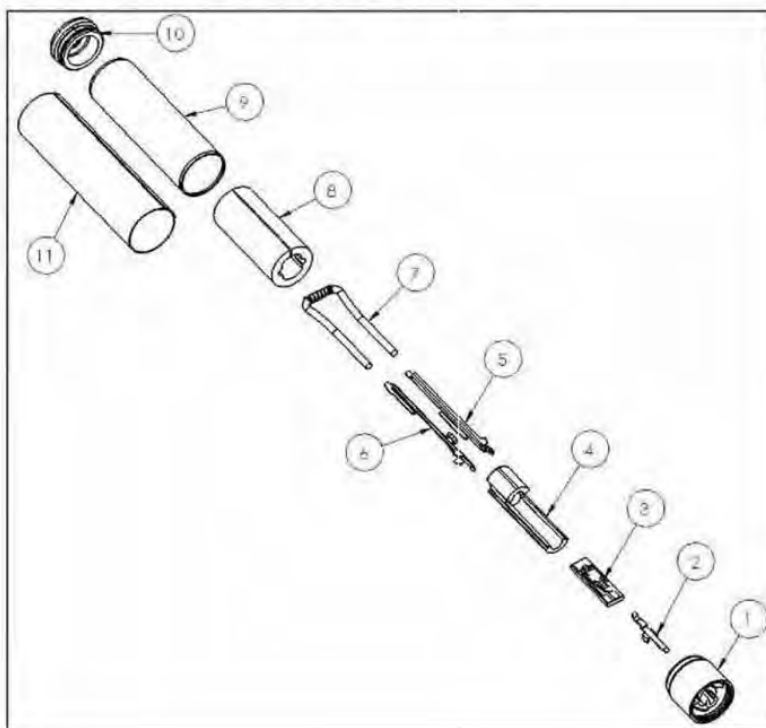


Figure H-13: Vuse Solo G1 Cartridge Cross-sectional View

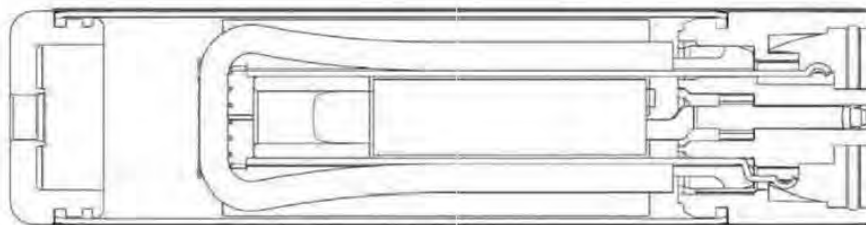


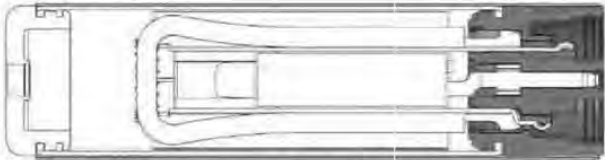
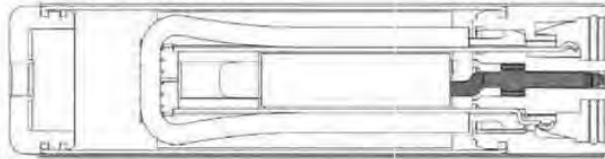
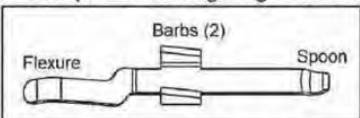
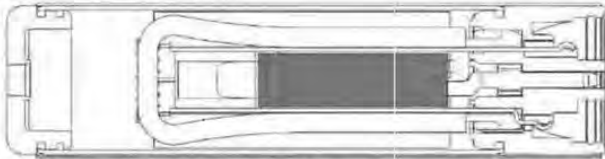
Table H-5 provides a description and material composition for each Vuse Solo G1 Replacement Cartridge component. The numbered labels in Figure H-12 correspond to the numbered rows in Table H-5.

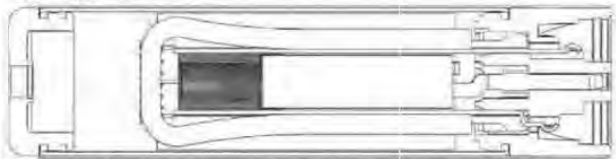
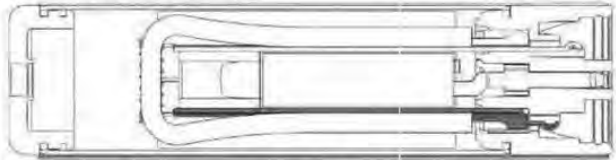
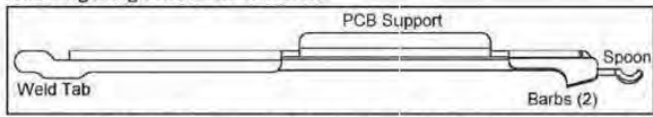
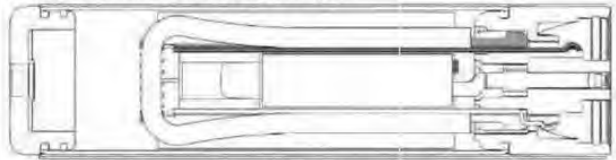
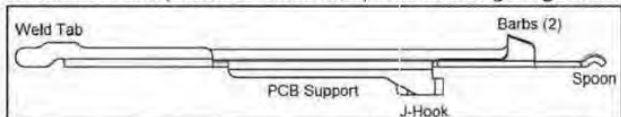
Table H-5: Vuse Solo G1 Cartridge Components

#	Name/Description	Material
1	CARTRIDGE BASE G1	Tritan (copolyester)
2	TERMINAL CENTER CONTACT G1	304 Stainless steel
3	CARTOMIZER PCB ASSEMBLY	Ceramic printed circuit board, integrated computer chip
4	FLOW TUBE G1	Tritan (copolyester)
5	TERMINAL PLUS VOLTAGE SINGLE	304 Stainless steel
6	TERMINAL GROUND WICK SUPPORT SINGLE	304 Stainless steel
7	HEATER WICK ASSEMBLY G1 COMPOSITE	Glass fiber wick, Nichrome wire
8	COMMON RESERVOIR SUBSTRATE	Cellulose acetate fiber, alpha cellulose fiber, polyvinyl alcohol fiber
9	EXTERNAL STAINLESS TUBE	304 Stainless steel
10	MOUTH END CAP G1	Tritan (copolyester)
11	LABEL	Adhesive label

The total weight of the Vuse Solo G1 cartridge is nominally 3.12 grams for the dry components plus the weight of the e-liquid. The e-liquid weight is approximately 590 mg but varies slightly among flavors due to differences in the e-liquid formulations. Table H-6 provides a description of each component of the G1 cartridge and illustrates the location within the cartridge assembly shaded in dark gray. A photo of each component (not to scale) is also provided.

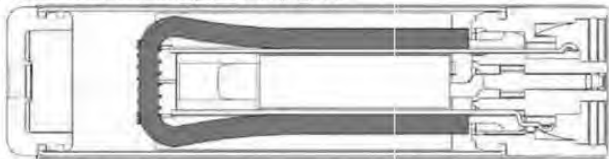
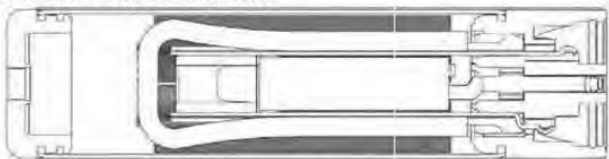
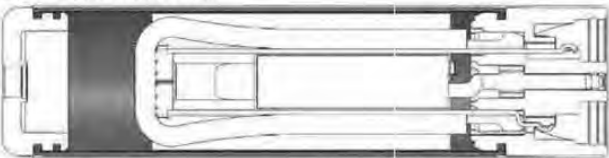
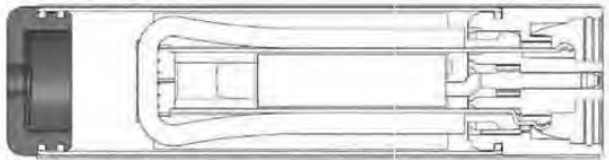
Table H-6: Vuse Solo G1 Cartridge Component Details

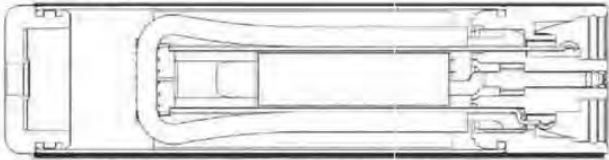
#	Location and Description	Physical Appearance
1	Cartridge Base G1:  The "Cartridge Base G1" is made from Tritan (copolyester) and positions the terminals in place while electrically insulating them from each other. The base connects to the power unit and uses four trapezoidal features to limit rotation after connection.	
2	Terminal Center Contact G1:  The "Terminal Center Contact G1" is made from 304 stainless steel and forms part of the electrical circuit between the power unit and cartomizer PCB assembly. The following image shows its features.  The flexure contacts the signal pad on the Cartomizer PCB assembly. The barbs resist removal after being pressed into the base. The spoon passes through the base to make contact with the corresponding terminal on the power unit.	
3	Cartomizer PCB Assembly:  The "Cartomizer PCB Assembly" (Cartomizer PCBA) is a printed circuit board assembly that holds the cartridge microchip and interfaces with the control circuit of the power unit for authentication and data storage (for more information on authentication and data storage, see Section H.1.1.3.3). The board is alumina ceramic, and the electronic components are covered by a conformal coating of Parylene C.	

#	Location and Description	Physical Appearance
4	Flow Tube G1:  The "Flow Tube G1" is made from Tritan (copolyester) and directs air flow across the heater.	
5	Terminal Plus Voltage Single:  The "Terminal Plus Voltage Single" is made from 304 stainless steel and forms part of the electrical circuit between the power unit and heater coil. The following image shows its features.  • The weld tab is laser welded to one end of the heater abutting the coils. • The middle tab supports the back side of the Cartomizer PCBA. • The barbs resist removal after being pressed into the base. • The spoon passes through the base to make contact with the corresponding terminal on the power unit.	
6	Terminal Ground Wick Support Single:  The "Terminal Ground Wick Support Single" is made from 304 stainless steel and forms part of the electrical circuit between the power unit, heater coil, and Cartomizer PCBA (obscured in this view). The following image shows its features.  • The weld tab is laser welded to one end of the heater abutting the coils. • The middle tab supports the back side of the Cartomizer PCBA. • The J-hook contacts the ground pad on the Cartomizer PCBA. • The barbs resist removal after being pressed into the base. • The spoon passes through the base to make contact with the corresponding terminal on the power unit.	

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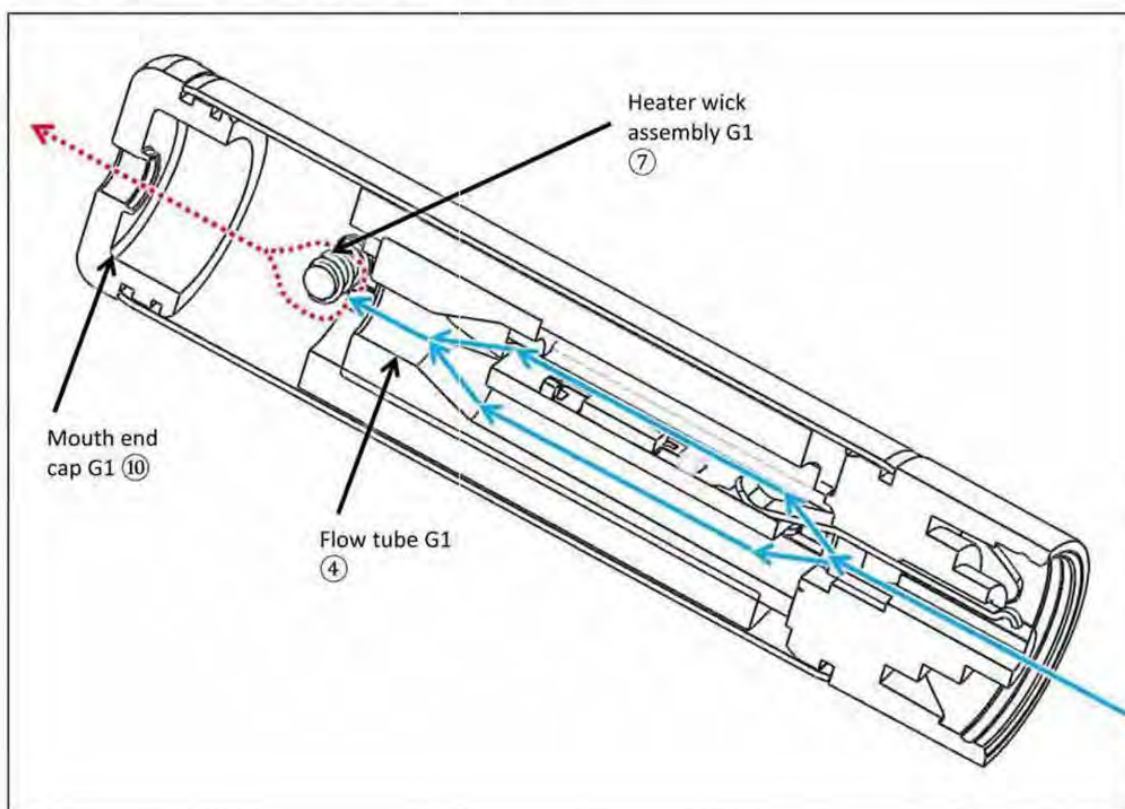
#	Location and Description	Physical Appearance
7	Heater Wick Assembly G1 Composite:  The "Heater Wick Assembly G1 Composite" is a pre-assembled unit composed of two components: the wick and the heater coil. The wick is braided glass fiber through which the e-liquid travels. The heater is a coil of 36 AWG (American Wire Gauge) nichrome wire that wraps around the wick to form the heater coil. The heater aerosolizes the e-liquid.	
8	Common Reservoir Substrate:  The "Common Reservoir Substrate" is made from cellulose acetate fiber and is wrapped around the flow tube, contacting the wick. The substrate is saturated with 0.5 mL (nominal) of e-liquid after unfilled cartridge assembly, and holds the e-liquid in the finished cartridge. Alpha cellulose fiber (high alpha wood pulp) and polyvinyl alcohol fiber (PVA fiber) are also used in the substrate at less than 5% by weight each.	
9	External Stainless Tube:  The "External Stainless Tube" is made from 304 stainless steel and provides the outer housing of the cartridge assembly, containing all internal components. The tube is crimped at either end to join the part to the cartridge base and the mouth end cap.	
10	Mouth End Cap G1:  The "Mouth End Cap G1" is made from Tritan (copolyester) and provides a smooth surface at the consumer interface.	

#	Location and Description	Physical Appearance
11	Vuse Label G1:  The Vuse label provides product branding and identifies the e-liquid flavor based on different accent colors (see Section E for more information on packaging and labeling, and Section E.1 for images of the labels for all Vuse Solo G1 Replacement Cartridges).	 (label applied to cartridge)

H.1.1.3.1.2 Vuse Solo G1 Cartridge Air Flow Path

Figure H-14 shows the path of air (blue line) and aerosol (red dashed line) through the cartridge when air is drawn through the mouth end cap (upper left in figure).

Figure H-14: Vuse Solo G1 Cartridge Air Flow Path



H.1.1.3.2 Vuse Solo G2 Cartridge Components and Design

This section provides detailed technical descriptions of the cartridge assembly for the Vuse Solo G2 Replacement Cartridge. The G2 cartridge is composed of nine components and contains the e-liquid (see Section H.1.1.7 for information regarding e-liquid composition).

Figure H-16 shows a Vuse Solo G2 Replacement Cartridge and the overall nominal length and diameter. In this figure, the Original flavor variant is shown. Other flavor variants feature a label with a different accent color such that the consumer can quickly and easily distinguish between different flavors (see Section E.1 for images of the labels for all Vuse Solo G2 Replacement Cartridges).

Figure H-16: Vuse Solo G2 Cartridge (Original Flavor)



H.1.1.3.2.1 Vuse Solo G2 Cartridge Components

A detailed view of the G2 cartridge is shown in Figure H-17 to illustrate each of the components that compose the cartridge. These components are described (by the labeled numbers) in the following sections. A cross-sectional view of the assembled Vuse Solo G2 Replacement Cartridge is shown in Figure H-18.

Figure H-17: Vuse Solo G2 Cartridge Detailed View

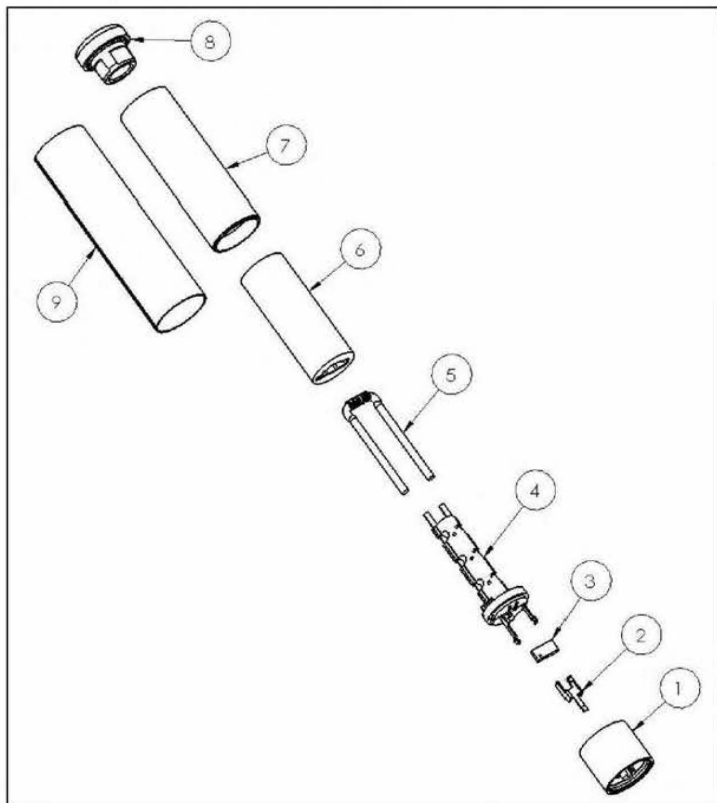


Figure H-18: Vuse Solo G2 Cartridge Cross-sectional View

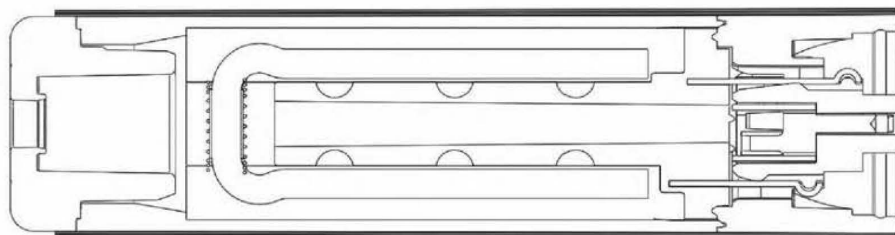


Table H-7 provides a description and material composition for each component of the G2 cartridge. The numbered labels in Figure H-17 correspond to the numbered rows in Table H-7.

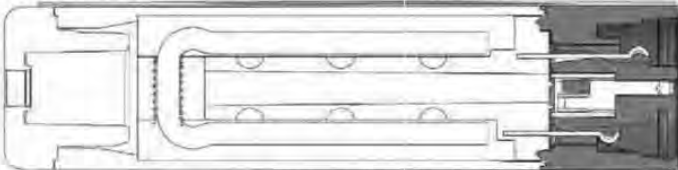
Table H-7: Vuse Solo G2 Cartridge Components

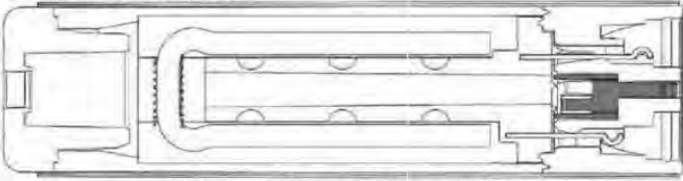
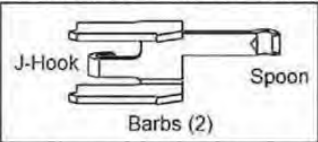
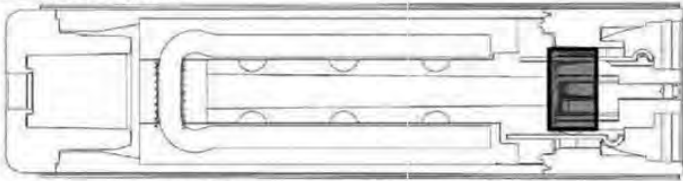
#	Name/Description	Material
1	BASE CARTOMIZER G2	Tritan (copolyester)
2	TERMINAL CENTER CONTACT G2	304 Stainless steel
3	CARTOMIZER CHIP G2	Integrated computer chip
4	FLOW TUBE G2	Tritan (copolyester), 304 Stainless steel
5	HEATER WICK ASSEMBLY G2 COMPOSITE	Glass fiber wick, Nichrome wire
6	RESERVOIR SUBSTRATE G2	Cellulose acetate fiber, alpha cellulose fiber, polyvinyl alcohol fiber
7	EXTERNAL TUBE G2	Tritan (copolyester)
8	MOUTH END CAP G2	Tritan (copolyester)
9	VUSE ORIGINAL LABEL G2	Adhesive label

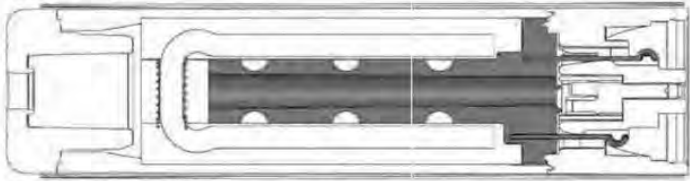
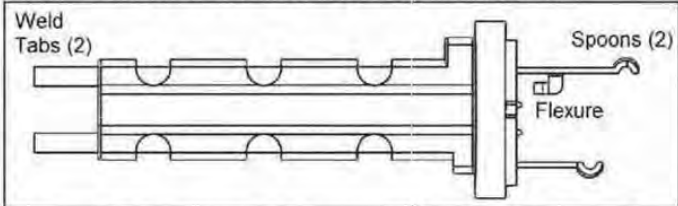
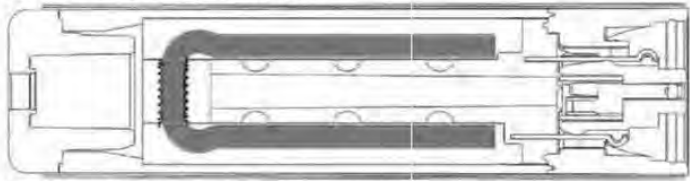
The total weight of the Vuse Solo G2 cartridge is nominally 1.94 grams for the dry components plus the weight of the e-liquid. E-liquid weight is approximately 590 mg but varies slightly among flavors due to differences in the e-liquid formulations.

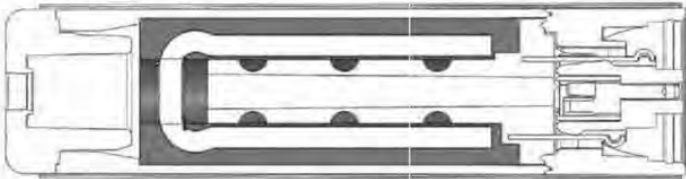
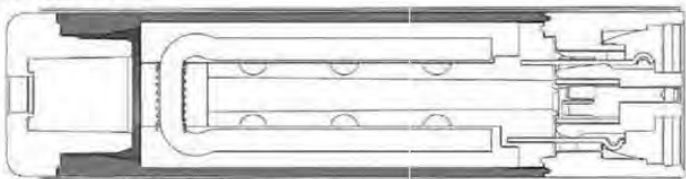
Table H-8 provides descriptions of each component of the G2 cartridge and illustrates the location within the cartridge assembly shaded in dark gray. A photo of each component (not to scale) is also provided.

Table H-8: Vuse Solo G2 Cartridge Component Details

#	Location and Description	Physical Appearance
1	Base Cartomizer G2:  The "Base Cartomizer G2" is made from Tritan (copolyester) and positions the terminals in place while electrically insulating them from each other. The base houses the microchip and connects to the power unit, using four trapezoidal features to limit rotation after connection.	

#	Location and Description	Physical Appearance
2	Terminal Center Contact G2:  The "Terminal Center Contact G2" is made from 304 stainless steel and forms part of the electrical circuit between the power unit and microchip. The following image shows its features.  • The J-hook contacts the signal pad on the microchip. • The barbs resist removal after being pressed into the base. • The spoon passes through the base to make contact with the corresponding terminal on the power unit.	
3	Cartomizer Chip G2:  The "Cartomizer Chip G2" is an authentication microchip that interfaces with the control circuit of the power unit for authentication and data storage (for more information on authentication and data storage, see Section H.1.1.3.3).	

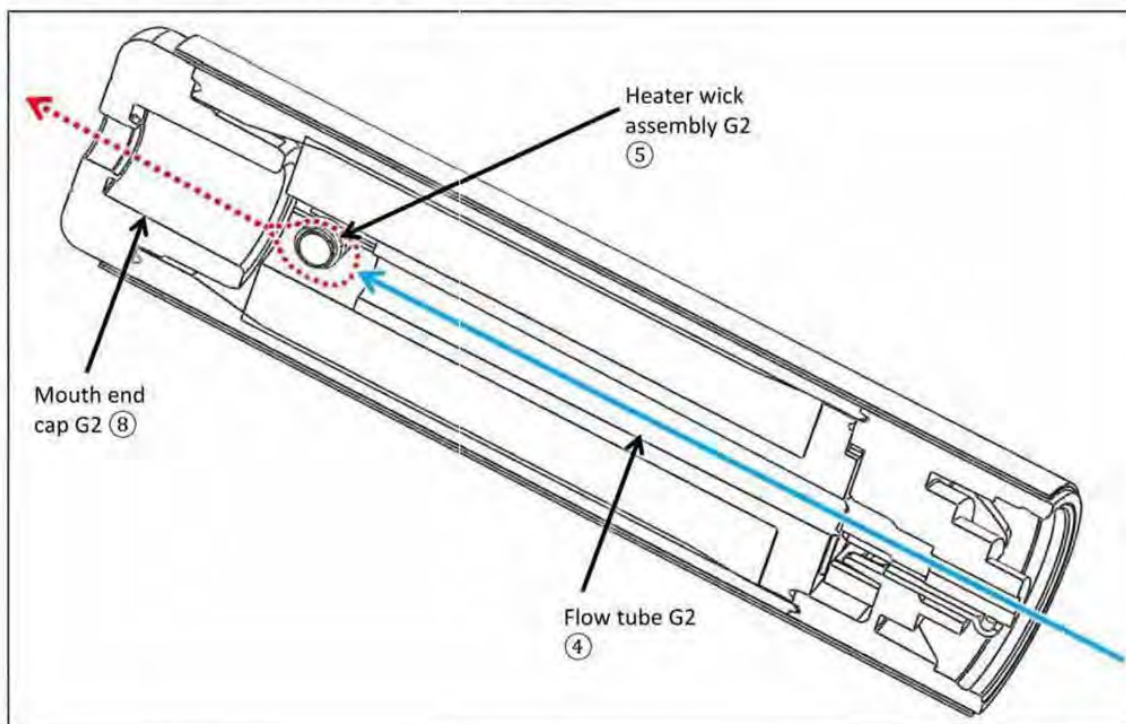
#	Location and Description	Physical Appearance
4	Flow Tube G2:  The "Flow Tube G2" is a pre-assembled component composed of two sub-components, a flow tube and two in-molded electrical terminals. The flow tube is made from Tritan (copolyester) and directs air flow across the heater. The flow tube is ultrasonically welded to the base and captures the center terminal and microchip. The two terminals are made from 304 stainless steel and form parts of the electrical circuit between the power unit and heater coil, as well as the power unit and microchip. The following image shows their features.  The weld tabs are laser welded to opposite ends of the heater where the coils abut. • The flexure contacts the ground pad on the microchip. • The spoons pass through the base to make contact with the corresponding terminals on the power unit.	
5	Heater Wick Assembly G2 Composite:  The "Heater Wick Assembly G2 Composite" is a pre-assembled component composed of two sub-components: the wick and the heater coil. The wick is braided glass fiber through which the e-liquid travels. The heater is a coil of 36 AWG (American Wire Gauge) nichrome wire that wraps around the wick to form the heater coil. The heater aerosolizes the e-liquid.	

#	Location and Description	Physical Appearance
6	Reservoir Substrate G2:  The "Reservoir Substrate G2" is made from cellulose acetate fiber and is wrapped around the flow tube, contacting the wick. The substrate is saturated with 0.5 mL (nominal) of e-liquid after unfilled cartridge assembly, and holds the e-liquid in the finished cartridge. Alpha cellulose (high alpha wood pulp) and polyvinyl alcohol fiber (PVA fiber) are also used in the substrate at less than 5% by weight each.	
7	External Tube G2:  The "External Tube G2" is made from Tritan (copolyester) and provides the sealed outer housing of the cartridge assembly, containing all internal components. The tube is ultrasonically welded to the base and the mouth end cap.	
8	Mouth End Cap G2:  The "Mouth End Cap G2" is made from Tritan (copolyester) and provides a smooth surface at the consumer interface. This component is ultrasonically welded to the external tube.	
9	Vuse label:  The Vuse label provides product branding and identifies the e-liquid flavor based on different accent colors (see Section E for more information on packaging and labeling, and Section E1 for images of the labels for all Vuse Solo G2 Replacement Cartridges).	 (label applied to cartridge)

H.1.1.3.2.2 Vuse Solo G2 Cartridge Air Flow Path

Figure H-19 shows the path of air (blue line) and aerosol (red dashed line) through the G2 cartridge when air is drawn through the mouth end cap (upper left in figure).

Figure H-19: Vuse Solo G2 Cartridge Air Flow Path



H.1.1.4 Electrical Connections and Mechanical Interface

Figure H-22 shows the physical elements in the electrical circuits for both Vuse Solo G1 and G2 cartridges. Note that only components directly related to the electrical circuit of the cartridge are included in the images.

Figure H-22: Vuse Solo Cartridge Electrical Circuit View, G1 (Left) and G2 (Right)

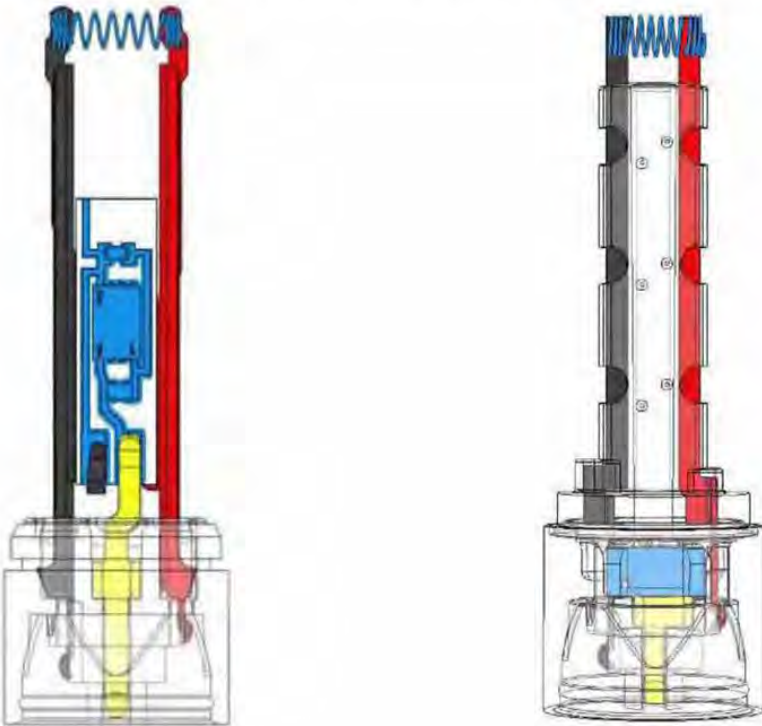


Figure H-22 Key: Color of Components and Associated Electrical Connections.

Color of Components	Electrical Connection
Red	Electrically connected to the positive terminal of the power unit
Black	Electrically connected to the negative terminal of the power unit
Yellow	Provide signal data between the cartridge and power unit
Blue	Electrically connected between circuit terminals
White components (transparent for clarity)	Act as electrical insulators

Figure H-23 shows the mechanical connections of the power unit's electrical circuit. These contacts form the electrical circuit with the terminals described in the Vuse Solo cartridges above. Note that only components immediately related to the electrical circuit between the power unit and cartridge are included in the image.

Figure H-23: Vuse Solo Power Unit Connector Circuit

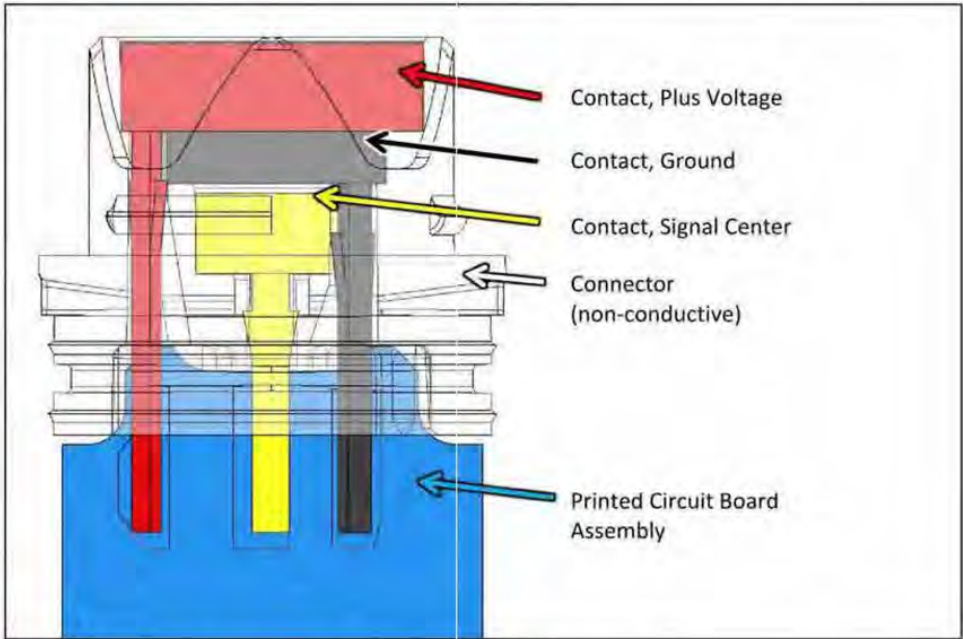


Figure H-23 Key: Color of Components and Associated Electrical Connections	
Color of Components	Electrical Connection
Red	Connects to the output of the power unit PCBA, which provides positive voltage during a puff
Black	Connects to the negative terminal of the battery
Yellow	Provides signal data between the power unit and cartridge
Blue	Represents the power unit PCBA which is electrically connected to each circuit terminal
White components (transparent for clarity)	Acts as electrical insulators