


MATERIAL DECLARATION SHEET



Material number	HES38U-RS485			
Product Line	Precision Potentiometer			
Compliance Date	June 9th, 2019			
RoHS Compliant	Yes	MSL	N/A	

No.	Construction Element (subpart)	Homogeneous Material	Material weight [g]	Homogeneous Material/	CASRN	Materials Mass %	Material Mass % of total unit wt.	Subpart mass of total wt. (%)
				Substances	if applicable			
1	Lube	NYE-799	0.10	Decanoic acid, mixed esters with heptanoic acid, octanoic acid, trimethylolpropane	68130-53-0	54.40	0.019	0.04
				Lithium 12-hydroxystearate	7620-77-1	5.70	0.002	
				Isohexadecyl-isoctadecanoate	52006-45-8	33.70	0.012	
				Polyisobutylene	9003-27-4	5.20	0.002	
2	Slider	PBT	0.39	PBT (Polybutylene terephthalate)	26062-94-2	54.25	0.07	0.14
				Glass Fiber	65997-17-3	32.00	0.04	
				Antimony trioxide	1309-64-4	2.50	0.003	

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3	Ball Bearing	Martensitic S.S 400	1.18	Carbon	7440-44-0	0.05	0.0002	0.42
				Manganese	7439-96-5	1.00	0.004	
				Phosphorus	7723-14-0	0.03	0.0001	
				Sulfur	7704-34-9	0.03	0.00013	
				Silicon	7440-21-3	1.00	0.004	
				Chromium	7440-47-3	12.00	0.05	
				Aluminum	7429-90-5	0.25	0.001	
				Iron	7439-89-6	85.64	0.36	
4	Retaining Ring	Stainless Steel PH 15-7 MO	0.01738	Carbon	7440-44-0	0.09	0.00001	0.01
				Manganese	7439-96-5	1.00	0.00006	
				Phosphorus	7723-14-0	0.04	0.000002	
				Sulfur	7704-34-9	0.04	0.000002	
				Silicon	7440-21-3	1.00	0.00006	
				Chromium	7440-47-3	13.83	0.001	
				Nickel	7440-02-0	7.00	0.0004	
				Molybdenum	7439-98-7	2.00	0.0001	
				Aluminum	7429-90-5	1.00	0.0001	
				Iron	7439-89-6	74.000	0.0046	
5	Strap	Nickel Silver Alloy CDA 752	2.30	Copper	7440-50-8	65.00	0.53	0.82
				Nickel	7440-02-0	18.00	0.15	
				Zinc	7440-66-6	17.00	0.14	
6	Contact Spring	Nickel/Silver C77000	0.05	Copper	7440-50-8	55.00	0.01	0.02
				Nickel	7440-02-0	18.00	0.003	
				Zinc	7440-66-6	27.00	0.005	

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7	Collector Bar	Nickel Silver Alloy CDA 770	0.07	Copper	7440-50-8	55.00	0.013	0.02
				Zinc	7440-66-6	27.00	0.006	
				Nickel	7440-02-0	18.00	0.004	
8	Epoxy	UV Epoxy	0.01	Cycloaliphatic epoxide	trade secret	40.00	0.001	0.00
				Polyetherpolyol resins	39072-02-1	15.00	0.000	
				Silicon dioxide	67762-90-7	25.00	0.001	
				Hydrated alumina	21645-51-2	20.00	0.000	
9	Epoxy	Epoxy BP-FR-C	0.01	Epoxy resin	25085-99-8	49.000	0.002	0.004
				Antimony trioxide	1309-64-4	11.000	0.000	
				Silicon dioxide	7440-21-3	11.000	0.0004	
				Aluminum oxide	1344-28-1	11.000	0.0004	
				Kaolin clay	1332-58-7	9.000	0.0003	
				Mg alumino silicate	1302-88-1	9.000	0.0003	
10	Capacitor x 13	Ceramic Body	0.14	Barium	7440-39-3	48.500	0.025	0.05
				Oxygen	7782-44-7	20.200	0.010	
				Titanium	7440-32-6	16.800	0.009	
				Nickel	7440-02-0	14.500	0.007	
				Copper	7440-50-8	47.000	0.024	
		Tin		7440-31-5	37.400	0.019		
		Soldering Termination		Nickel	7440-02-0	15.600	0.008	

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11	Resistor x7 Bourns 0471703901 Resistor CR0603	Ceramic	11.63	Aluminum oxide	1344-28-1	96.000	3.982	4.76
				Silicon dioxide	14808-60-7	4.000	0.166	
		Thick Film Conductor	0.32	Silver	7440-22-4	96.000	3.982	
				Bismuth	7440-69-9	1.000	0.001	
				Barium	7440-39-3	1.000	0.001	
				Silicon	7440-21-3	1.000	0.001	
				Boron	7440-42-8	1.000	0.001	
				Thick Film Resistor	0.18	Ruthenium dioxide	12036-10-1	
		Silver	7440-22-4			40.000	0.045	
		Palladium	2023568.00			15.000	0.010	
		Lead	7439-92-1			20.000	0.013	
		Epoxy	0.021	Epoxy	29690-82-2	100.000	0.007	
		Epoxy	0.021	Epoxy	25085-99-8	100.000	0.007	
		NI-CR	0.021	Nickel	7440-02-0	80.000	0.006	
				Chromium	7440-47-3	20.000	0.001	
Nickel	0.616	Nickel	7440-02-0	100.000	0.220			
Tin	0.546	Tin	7440-31-5	100.000	0.195			
12	Wiper Terminal	Brass 360	0.04	Copper	7440-50-8	62.00	0.008	0.01
				Zinc	7440-66-6	35.05	0.005	
				Iron	7439-89-6	0.35	0.00005	
				Lead	7439-92-1	2.60	0.00035	
		Plating	0.01	Gold	7440-57-5	100.00	0.013	

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13	Varnish	Varnish	0.15	Phenolic Resin	9003-35-4	100.00	0.05	0.05
14	Housing	Shinkong D202G30 DF4886 Blue	1.97	PBT (Polybutylene terephthalate)	26062-94-2	54.25	0.38	1.05
				Glass Fiber	65997-17-3	32.00	0.23	
				Brominated flame retardant	Trade Secret	10.50	0.07	
				Antimony trioxide	1309-64-4	2.50	0.02	
				Carbon black	1333-86-4	0.75	0.01	
		Resistive Wire	0.96	Nickel	7440-02-0	75.00	0.26	
				Chromium	7440-47-3	21.00	0.07	
				Aluminum	7429-90-5	3.00	0.01	
15	Shaft	Stainless Steel 303	1.18	Carbon	7440-44-0	0.10	0.0004	0.42
				Manganese	7439-96-5	2.00	0.01	
				Silicon	7440-21-3	1.00	0.004	
				Phosphorus	7723-14-0	0.40	0.002	
				Sulfur	7704-34-9	0.15	0.001	
				Chromium	7440-47-3	18.00	0.08	
				Nickel	7440-02-0	9.00	0.08	
				Iron	7439-89-6	69.35	0.08	

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16	Terminal	Nickel Silver Alloy CDA 752	0.08	Copper	7440-50-8	65	0.017	0.000003
				Zinc	7440-66-6	17	0.00455	
				Nickel	7440-02-0	18	0.00481	
		Plating	0.01	Gold	7440-57-5	100	0.02674	
		Inlay	0.01	Silver	7440-22-4	56	0.01498	
				Copper	7440-50-8	22	0.00588	
				Zinc	7440-66-6	17	0.00455	
				Tin	7440-31-5	5	0.00134	
17	Element	Nickel Silver	0.08	Copper	7440-50-8	65.00	0.017	0.000003
				Zinc	7440-66-6	17.00	0.005	
				Nickel	7440-02-0	18.00	0.005	
		Plating	0.01	Gold	7440-57-5	100.00	0.002	
		Inlay	0.01	Silver	7440-22-4	56.00	0.001	
				Copper	7440-50-8	22.00	0.001	
				Zinc	7440-66-6	17.00	0.0004	
				Tin	7440-31-5	5.00	0.0001	
18	Cable x 3	Copper Wire	4.50	Copper	7440-50-8	54.98	0.88	0.00016
		Coating		Polyamide	32131-17-2	45.02	0.72235	
19	Cable Tie	Nylon	0.64	Nylon 6.6 (polyhexamethylene adipamide)	32131-17-2	66.00	0.14943	0.00002
				Glass fiber	65997-17-3	32.00	0.07245	
				Molybdenum disulfide	1317-33-5	2.00	0.00453	

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20	LDO Voltage Regulators x 2	Epoxy Molding Compound	1.00	Silica	14808-60-7	53.00	0.18898	0.00005
				Epoxy Resin	29690-82-2	25.00	0.08914	
				Phenolic Resin	9003-35-4	15.00	0.05348	
				Antimony trioxide	1309-64-4	3.00	0.01070	
				Brominated epoxy resin	40039-93-8	3.00	0.01070	
				Carbon black	1333-86-4	1.00	0.00357	
		Copper Terminal	0.22	Copper	7440-50-8	100.00	0.07844	
		Plating	0.14	Tin	7440-31-5	100.00	0.04992	
		Solder	0.04	Tin	7440-31-5	96.50	0.01376	
				Silver	7440-22-4	3.00	0.00043	
Copper	7440-50-8			0.50	0.00007			
21	Cover Anodized	Aluminum 2011	1.27	Aluminum	7429-90-5	94.50	0.42792	0.00005
				Copper	7440-50-8	5.50	0.02491	
22	PCB	Soder Paste	2.67	Silver	7440-22-4	3.00	0.029	0.00018
				Tin	7440-31-5	96.50	0.920	
				Copper	7440-50-8	0.50	0.005	
		Solder	0.04	Tin	7440-31-5	96.50	0.012	
				Silver	7440-22-4	3.00	0.0004	
				Copper	7440-50-8	0.50	0.0001	
		ESD Clamp Protector	2.325	Aluminum oxide	1344-28-1	85.60	0.710	
				Platinum	7440-06-4	2.10	0.017	
				Silicon dioxide	7631-86-9	0.30	0.002	
				Zinc oxide	01314-13-2	3.00	0.025	
				Bismuth trioxide	1304-76-3	0.61	0.005	

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				Silicon dioxide	7631-86-9	0.40	0.003	
				Polymer (Epoxy)	25068-38-6	2.55	0.021	
				Silver	7440-22-4	2.50	0.021	
				Nickel	7440-02-0	2.50	0.021	
				Tin	7440-31-5	0.44	0.004	
				Copper	7440-50-8	42.11	0.014	
				Epoxy resin	25085-99-8	57.89	0.019	
		Printed Circuit	0.09					
23	Washer	Stainless Steel PH 15-7 MO	0.03	Carbon	7440-44-0	0.09	0.00001	0.00000
				Manganese	7439-96-5	1.00	0.0001	
				Phosphorus	7723-14-0	0.04	0.000004	
				Sulfur	7704-34-9	0.04	0.000004	
				Silicon	7440-21-3	1.00	0.0001	
				Chromium	7440-47-3	14.00	0.001	
				Nickel	7440-02-0	6.50	0.001	
				Molybdenum	7439-98-7	2.00	0.0002	
				Aluminum	7429-90-5	0.75	0.0001	
				Iron	7439-89-6	74.58	0.007	
24	Cable / Connector RJ45	Plating	0.19	Nickel	7440-02-0	100.00	0.0686	0.00521
		Phosphor Bronze Alloy Wire	143.00	Copper	7440-50-8	93.80	47.8266	
				Tin	7440-31-5	5.65	2.8808	
				Phosphorus	7723-14-0	0.20	0.1020	
				Zinc	7440-66-6	0.30	0.1530	
				Lead	7439-92-1	0.05	0.0255	
		Lexan	2.97	Polycarbonate	111211-39-3	100.00	1.0590	

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25	Transceiver	Terminal	0.11	Copper	7440-50-8	99.99	0.0047	0.00001
				Oxygen	7782-44-7	0.001	0.0000004	
		Terminal Plating	0.07	Tin	7440-31-5	100.00	0.0250	
26	Heat Shrink Tubing	GS-51 Nylatron	0.75	Nylon 6.6 (polyhexamethylene adipamide)	32131-17-2	66.00	0.1765	0.00003
				Glass fiber	65997-17-3	32.00	0.0856	
				Molybdenum disulfide	1317-33-5	2.00	0.0856	
27	Diode	High-melting point Solder paste	2.15	Tin	7440-31-5	5.00	0.0383	0.00330
				Lead	7439-92-1	92.50	0.7091	
				Silver	7440-22-4	2.50	0.0192	
		Dice	2.35	Aluminum oxide	1344-28-1	2.50	0.0209	
				Silicon dioxide	7631-86-9	10.00	0.0838	
				Lead-containing glass	7439-92-1	12.50	0.1047	
				Nickel	7440-02-0	14.80	0.1240	
				Boron	7440-42-8	0.01	0.0001	
				Phosphorus (wht/yellow)	7723-14-0	0.01	0.0001	
		Lead frame / Leads / Disc	33.50	Silicon	7440-21-3	60.18	0.5043	
				Copper	7440-50-8	99.80	11.9208	
				Iron	7439-89-6	0.15	0.0179	
		Molding Compound	53.50	Phosphorus	7723-14-0	0.05	0.0060	
				Silica	14808-60-7	76.00	14.4977	
				Epoxy resin	25928-94-3	9.00	1.7168	
Phenolic resin	9003-35-4			8.00	1.5261			
Plating	1.00	Hydroxide metal	21645-51-2	6.00	1.1446			
		Carbon black	1333-86-4	1.00	0.1908			
				Tin	7440-31-5	100.00	0.3569	

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28	Terminal Pin x 5	Brass	1.50	Copper	7440-50-8	70.00	0.3744	0.00005
				Zinc	7440-66-6	29.88	0.1598	
				Lead	7439-92-1	0.07	0.0004	
				Iron	7439-89-6-	0.05	0.0003	
		Plating	0.001	Nickel	7440-02-0	100.00	0.0004	
		Plating	0.001	Tin	7440-31	100.00	0.0004	
29	Rotor	Shinkong D202G30 DF4886 Blue	1.97	PBT (Polybutylene terephthalate)	26062-94-2	54.25	0.38	0.00011
				Glass Fiber	65997-17-3	32.00	0.23	
				Brominated flame retardant	Trade Secret	10.50	0.07	
				Antimony trioxide	1309-64-4	2.50	0.02	
				Carbon black	1333-86-4	0.75	0.01	
				Carbon	7440-44-0	0.10	0.0004	
				Manganese	7439-96-5	2.00	0.01	
				Silicon	7440-21-3	1.00	0.004	
				Phosphorus	7723-14-0	0.40	0.002	
				Sulfur	7704-34-9	0.15	0.001	
				Chromium	7440-47-3	18.00	0.08	
				Nickel	7440-02-0	9.00	0.04	
				Iron	7439-89-6	69.35	0.29	
30	O-Ring	Silicon Rubber	0.01	Silicon	63394-02-5	100.00	0.004	0.0000004
31	Mandrel	Copper	1.13	Silver	7440-22-4	100.00	0.4029	0.00004
		Coating	0.00005	Arsenic	7440-38-2	100.00	0.40291	
		Total Weight (g)	280.47943					

This Document was updated on: 07/09/2019

Important remarks:

1. It is the responsibility of the user to verify they are accessing the latest version.
2. See Certificate of Compliance for RoHS exemptions used.