

MATERIAL DECLARATION SHEET



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|-----------------|------------------------------|-----|-----|--|
| Material Number | ES-L | | | |
| Product Line | Shaftless Contacting Encoder | | | |
| Compliance Date | September 30, 2005 | | | |
| RoHS Compliant | Yes | MSL | N/A | |

| No. | Construction Element (subpart) | Homogeneous Material | Material weight [g] | Homogeneous Material/ Substances | CASRN if applicable | Materials Mass % | Material Mass % of total unit wt. | Subpart mass of total wt. (%) |
|-----|--------------------------------|----------------------|---------------------|--|---------------------|------------------|-----------------------------------|-------------------------------|
| 1 | PCB | FR-4 | 2.166 | Phenol, 4,4'-(1-methylethylidene)bis(2,6-dibromo-, polymer with (chloromethyl) oxirane and 4,4'-(1-methylethylidene) bis(phenol) | 26265-08-7 | 33 | 13.146 | 39.836 |
| | | | | Copper | 7440-50-8 | 18 | 7.171 | |
| | | | | Glass | | 49 | 19.519 | |
| | | Copper Plating | 0.1 | Copper | 7440-50-8 | 90 | 1.655 | 1.839 |
| | | | | Proprietary Ingredients | | 10 | 0.184 | |
| | | Soldermask | 0.011 | Bisphenol A, epichlorohydrin polymer (2-Methoxymethylethoxy) propanol | 25068-38-6 | 40 | 0.081 | 0.202 |
| | | | | | 34590-94-8 | 10 | 0.02 | |
| | | | | Barium sulfate | 7727-43-7 | 35 | 0.071 | |
| | | | | 2-Methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one | 71868-10-5 | 10 | 0.02 | |
| | | | | Dipropylene glycol ethyl ether | 15764-24-6 | 5 | 0.01 | |
| | | ENIG | 0.014 | Nickel bis(sulfamidate) | 13770-89-3 | 97 | 0.249 | 0.258 |
| | | | | Gold | 7440-57-5 | 3 | 0.008 | |

MATERIAL DECLARATION SHEET



Reliable Electronic Solutions

| | | | | | | | | |
|---|----------------|-----------------|---------|--|------------|------|--------|--------|
| 2 | Element Lube | Lube | 0.00815 | Decanoic acid, mixed esters with heptanoic acid, octanoic acid | 68130-53-0 | 54.4 | 0.082 | 0.149 |
| | | | | Lithium 12-hydroxystearate | 7620-77-1 | 5.7 | 0.009 | |
| | | | | Isohexadecyl-isooctadecanoate | 52006-45-8 | 33.7 | 0.051 | |
| | | | | Polyisobutylene | 9003-27-4 | 6.2 | 0.009 | |
| 3 | Terminal X 3 | Phosphor Bronze | 0.0822 | Copper | 7440-50-8 | 94.8 | 1.433 | 1.512 |
| | | | | Tin | 7440-31-5 | 5 | 0.076 | |
| | | | | Phosphorus | 7723-14-0 | 0.2 | 0.003 | |
| | | Plating | 0.005 | Tin | 7440-31-5 | 100 | 0.092 | 0.092 |
| 4 | Solder | Solder | 0.018 | Tin | 7440-31-5 | 96.5 | 0.319 | 0.331 |
| | | | | Silver | 7440-22-4 | 3 | 0.009 | |
| | | | | Copper | 7440-50-8 | 0.5 | 0.002 | |
| 5 | Rotor | POM | 0.6002 | Polyoxymethylene Homopolymer | 30846-29-8 | 94 | 10.377 | 11.039 |
| | | | | Stabilizer | | 2 | 0.221 | |
| | | | | Pigment | | 3 | 0.331 | |
| | | | | Carbon Black | 1333-86-4 | 1 | 0.11 | |
| 6 | Contact Spring | Wire | 0.01548 | Copper | 7440-50-8 | 55 | 0.157 | 0.285 |
| | | | | Nickel | 7440-02-0 | 18 | 0.051 | |
| | | | | Zinc | 7440-66-6 | 27 | 0.077 | |
| | | Spacer Strip | 0.00756 | Nickel | 7440-02-0 | 18 | 0.025 | 0.139 |
| | | | | Copper | 7440-50-8 | 55 | 0.077 | |
| | | Laminated Strip | 0.05 | Zinc | 7440-66-6 | 27 | 0.038 | 0.919 |
| | | | | Copper | 7440-50-8 | 70 | 0.644 | |
| 7 | Housing | Nylon | 2.283 | Nylon | 32131-17-2 | 85 | 35.69 | 41.988 |
| | | | | Glass | | 15 | 6.298 | |

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|----|--|-----------------|---------|---|------------|-------|-------|-------|
| 8 | Detent Spring | Stainless Steel | 0.0655 | Iron | 7439-89-6 | 70.85 | 0.854 | 1.205 |
| | | | | Carbon | 7440-44-0 | 0.15 | 0.002 | |
| | | | | Chromium | 7740-47-3 | 17 | 0.205 | |
| | | | | Manganese | 7439-96-5 | 2 | 0.024 | |
| | | | | Nickel | 7440-02-0 | 9 | 0.108 | |
| | | | | Silicon | 7440-21-3 | 1 | 0.12 | |
| 9 | Front Bearing and Detent Surfaces Lube | Lube | 0.00815 | Siloxanes and Silicones, Me 3,3,3-trifluoropropyl | 63148-56-1 | 84 | 0.126 | 0.149 |
| | | | | Polyurea for lubricants | | 15 | 0.022 | |
| | | | | Proprietary Ingredients | | 1 | 0.001 | |
| 10 | Marking Ink | Ink | 0.003 | Epoxy Resin | | 100 | 0.055 | 0.055 |
| | | Total weight | 5.437 | | | | | |

This Document was updated on: January 24, 2007

Important remarks:

1. It is the responsibility of the user to verify they are accessing the latest version.