

**SEMI Comments on**  
**RoHS Oeko's Pack 22 Stakeholder Consultation**  
**March 2021**

SEMI welcomes the opportunity to provide feedback to the Oeko Pack 22 Stakeholder consultation. We generally support applications made on the behalf of the Umbrella Project Participants for each of those exemptions subject for this consultation.

Our expectation is that these consultations are only related to exemptions which expire shortly (e.g., July of 2021), and that no reduction will be made to the later expiry dates or the categories of equipment they cover.

The following shows parts known to be used in Semiconductor-Manufacturing (and Related) Equipment – SMRE – which depend on the indicated RoHS exemptions for compliance. Some of these are simple parts such as connectors or pins, and others are more complex devices such as sensors, and some are highly complex, such as control computers.

Although majority of SMRE are outside the scope of RoHS by the LSSIT or LSFI exclusion, removal of the exemption can affect availability of parts that are used in common with EEE within scope of RoHS and depending on the indicated RoHS exemptions for compliance will negatively impact the SMRE, forcing at a minimum a redesign of the equipment. In the case of SMRE that is in scope of RoHS, removal of the indicated exemption can result in disruption of the SMRE supply in the European market, as comparable lead-free solutions for most of parts that are currently being applied of the exemption have not been identified according to exemption extension application by the manufacturer (association).

Depending on the role of the part within the equipment, redesign of surrounding components might also be required (e.g. because of different mechanical fit of the replacement part, or different 'functional' fit of an active part (such as a controller).

Even in the simplest scenario, the new RoHS-compliant part that does not depend on the exemption will have to be given a new part number, and the 'where-used' assemblies and related drawings and bill of materials will also have to be revised as an engineering action. Even one such simple change could require 8 to 32 or more hours of engineering time (depending on the project management and review systems in place for the SMRE manufacturer), which, when realistically distributed into a normal work schedule in parallel with other projects, could require one to three weeks of real calendar time. It is clear from the following list that the impact could be to many parts simultaneously, which would no-doubt require a very significant engineer project to address assuming there is no direct impact to the SMRE process as a result of the changes.



If the part is directly related to the SMRE process, requalification of the equipment might be required to demonstrate there is no significant impact to customer processes. Such requalification projects can in, the best case, require many weeks of planning an analysis and potentially tens of thousands of dollars in machine time, employee time, and test work-piece costs.

Please find enclosed a table with exemption used.

| #   | Description                         | RoHS Exemption Used                               | Additional information | Exmpt. 6a | Exmpt. 6b | Exmpt. 6c | Exmpt. 7a | Exmpt. 7c1 | Exmpt. 7cII |
|-----|-------------------------------------|---|------------------------|-----------|-----------|-----------|-----------|------------|-------------|
| 279 | 100k,12 TURN POT                    | R2-6c, R2-7c1                                     | potentiometer          |           |           | 6c        |           | 7c1        |             |
| 75  | ADAPTER,CONN,BNC TO MICRODOT        | R2-6c   |                        |           |           | 6c        |           |            |             |
| 54  | ADAPTER,CONNECTOR,BNC,FEM-FEM       | R2-6c   |                        |           |           | 6c        |           |            |             |
| 45  | ADAPTER,CONNECTOR,M20,D6-12MM       | R2-6c   |                        |           |           | 6c        |           |            |             |
| 147 | ALARM,ENCASED PIEZO                 | R2-7c1  | piezoelectric buzzer   |           |           |           |           | 7c1        |             |
| 158 | AMPLIFIER,SENSOR,CCD MICROMETER     | R2-7a, R2-7c1                                     |                        |           |           |           | 7a        | 7c1        |             |
| 219 | TOWER, COMPUTER                     | R2-15, R2-6a, R2-6b, R2-6c, R2-7a, R2-7c1, R2-7c2 |                        | 6a        | 6b        |           | 7a        |            | 7cII        |
| 192 | BASE,INCANDESCENT INDICATOR,P/M     | R2-6b, R2-6c                                      |                        |           | 6b        | 6c        |           |            |             |
| 220 | TOWER, COMPUTER                     | R2-15, R2-6a, R2-6b, R2-6c, R2-7a, R2-7c1, R2-7c2 |                        | 6a        | 6b        |           | 7a        | 7c1        | 7cII        |
| 151 | BLOCK,MINI TERMINAL                 | R2-6c   |                        |           |           | 6c        |           |            |             |
| 148 | BLOCK,TERMINAL,5.0MM,16 POS         | R2-6c   |                        |           |           | 6c        |           |            |             |
| 149 | BLOCK,TERMINAL,5.0MM,20 POS         | R2-6c   |                        |           |           | 6c        |           |            |             |
| 213 | BUS COUPLER TERMINAL,ETHERCAT       | R2-6c, R2-7c1                                     |                        |           |           | 6c        |           | 7c1        |             |
| 226 | BUS COUPLER,TERM,E-BUS,SWITCH ADDR. | R2-6c, R2-7c1                                     |                        |           |           | 6c        |           | 7c1        |             |
| 180 | BUS TERMINAL,ANALOG INPUT           | R2-6c, R2-7c1                                     |                        |           |           | 6c        |           | 7c1        |             |
| 247 | BUSBAR 3 PHASE 12 POS 100A          | R2-6c   |                        |           |           | 6c        |           |            |             |
| 246 | BUSBAR,3PH,28 POSITION COMB         | R2-6c   |                        |           |           | 6c        |           |            |             |
| 109 | CA ASSY M8 FEM,4PIN CON,5 MTR       | R2-6c   |                        |           |           | 6c        |           |            |             |
| 108 | CABLE ASSY COAX,BNC,RG58,1.5"       | R2-6c   |                        |           |           | 6c        |           |            |             |
| 107 | CABLE ASSY COAX,N,RG58CU,1FT        | R2-6c   |                        |           |           | 6c        |           |            |             |
| 106 | CABLE ASSY,COAX                     | R2-6c   |                        |           |           | 6c        |           |            |             |
| 20  | CABLE CLAMP,ADPT G 7.0              | R2-6c   |                        |           |           | 6c        |           |            |             |
| 110 | CABLE CONNECTOR,5X22AWG,2M          | R2-6c   |                        |           |           | 6c        |           |            |             |
| 139 | CABLE,DRIFT DETECT,5M               | R2-6c   |                        |           |           | 6c        |           |            |             |
| 202 | CABLE,LIGHT CURTAIN,TX/RX,32FT      | R2-6c   |                        |           |           | 6c        |           |            |             |
| 138 | CABLE,R/A EUROFAST 12PIN,5M         | R2-6c   |                        |           |           | 6c        |           |            |             |
| 199 | CABLE,USB 2.0,EXTENSION,10FT        | R2-6c   |                        |           |           | 6c        |           |            |             |
| 200 | CABLE,USB 2.0,EXTENSION,6FT         | R2-6c   |                        |           |           | 6c        |           |            |             |
| 143 | CIR. BKR.,GEN,1 POLE,250VAC 10 A    | R2-8b   |                        |           |           |           |           |            |             |
| 141 | CIR. BKR.,GEN,1 POLE,250VAC,1.0 A   | R2-8b   |                        |           |           |           |           |            |             |
| 142 | CIR. BKR.,GEN,1 POLE,250VAC,1.0 A   | R2-8b   |                        |           |           |           |           |            |             |
| 13  | CLAMP, CABLE                        | R2-6c   |                        |           |           | 6c        |           |            |             |
| 248 | CO-AX,PLUG,50KV                     | R2-6b, R2-6c                                      |                        |           | 6b        | 6c        |           |            |             |

| #   | Description                           | RoHS Exemption Used | Additional information | Exmpt. 6a | Exmpt. 6b | Exmpt. 6c | Exmpt. 7a | Exmpt. 7c1 | Exmpt. 7cII |
|-----|---------------------------------------|---------------------|------------------------|-----------|-----------|-----------|-----------|------------|-------------|
| 78  | CONN IEC CABLE C14 MALE               | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 83  | CONN PWR 2.1MM,5A,24VDC,FEM           | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 48  | CONN, BNC, RU 59 (20GA CC)            | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 50  | CONN, COAX BNC PLUG                   | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 49  | CONN, PCB, 15POS, FEM, RA             | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 252 | CONN,12x1MM,5 PIN,FEMALE,90 DG        | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 29  | CONN,7 PIN FEMALE 10A HAN             | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 43  | CONN,COAX,1PIN,5KVDC,10A,50OHM        | R2-6b, R2-6c        | connector              |           | 6b        | 6c        |           |            |             |
| 41  | CONN,COAX,UHF,FEMALE                  | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 69  | CONN,DNET,T-RES,M12,5P,MALE           | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 67  | CONN,FEED THRU,5PIN,M12,4A            | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 18  | BASE,CONN 1 MODULE HAN SERIES         | R2-6a               | connector              | 6a        |           |           |           |            |             |
| 68  | CONN,HOUSING,DEVICENET,5P,TEE         | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 72  | CONN,INSERT 3 PIN MALE 10A HAN        | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 74  | CONN,INSERT 3PIN FEM 10A HAN          | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 21  | CONN,INSERT 5 PIN MALE 16A HAN        | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 71  | CONN,INSERT 5 PIN MALE 16A HAN        | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 73  | CONN,INSERT 5PIN FEM 16A HAN          | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 168 | CONN,INSERT,FEMALE,SOLDER,19PIN       | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 169 | CONN,INSERT,MALE,SOLDER,19PIN         | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 161 | CONN,PLUG,MALE,13-4P                  | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 160 | CONN,PLUG,MALE,15-15P                 | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 163 | CONN,PLUG,MALE,16-8P                  | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 162 | CONN,PLUG,MALE,22-55P                 | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 188 | CONN,RECEPT,MS3470L14-19S             | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 159 | CONN,RECEPTACLE,JAM NUT,22-55S        | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 56  | CONN,SIGNAL,M23,FEM THRED,12MM        | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 57  | CONN,STRAIGHT,PWR,M23 FEM             | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 76  | CONN,UHF,CRIMP RG-8                   | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 251 | CONNECTOR                             | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 35  | CONNECTOR BASE,TWIN                   | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 81  | CONNECTOR CORD RETAINER               | R2-6c               | connector              |           |           | 6c        |           |            |             |
| 184 | BIT,CONCRETE DRILL,CARBIDE TIP,1/2X6  | R2-6a               | connector              | 6a        |           |           |           |            |             |
| 232 | Connector Socket Insert HAN 6 way 35A | R2-6c               | connector              |           |           | 6c        |           |            |             |

| #   | Description                                | RoHS Exemption Used | Additional information             | Exmpt. 6a | Exmpt. 6b | Exmpt. 6c | Exmpt. 7a | Exmpt. 7c1 | Exmpt. 7cII |
|-----|--|---------------------|------------------------------------|-----------|-----------|-----------|-----------|------------|-------------|
| 80  | CONNECTOR, DC,2.1MMX5.5MM                  | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 231 | Connector, Modular, Insert 40A, 2 Pin Fem  | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 230 | Connector, Modular, Insert 40A, 2 Pin Male | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 42  | CONNECTOR,1PIN,COAX,20A,5KV                | R2-6b, R2-6c        | connector                          |           | 6b        | 6c        |           |            |             |
| 146 | CONNECTOR,50 PIN IDC                       | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 28  | CONNECTOR,7 PIN,MALE,HAN D                 | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 39  | CONNECTOR,BULKHEAD,BNC                     | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 236 | Connector,Circlr Insert Pins 0.8-1.5mm     | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 235 | Connector,Circlr Insert Sockets 0.8-1.5m   | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 38  | CONNECTOR,COAX N TYPE                      | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 7   | CONNECTOR,COAX,UHF                         | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 241 | Connector,Crimp Skt Insert 26-24AWG        | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 51  | CONNECTOR,DC POWER PLUG                    | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 82  | CONNECTOR,DC PWR PLUG 2.5x2.5              | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 64  | CONN,HOOD,1 LEVER M20                      | R2-6a               | connector                          | 6a        |           |           |           |            |             |
| 34  | CONNECTOR,HOOD CARRIER,TWIN                | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 283 | CONNECTOR,HV,KF40 MOUNT                    | R2-6b, R2-6c        | connector                          |           | 6b        | 6c        |           |            |             |
| 145 | CONNECTOR,IDC                              | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 164 | CONNECTOR,MALE,RIGHT ANGLE,19P             | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 65  | CONNECTOR,PCB,BNC,STRAIGHT                 | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 172 | CONNECTOR,POWER,12 PIN                     | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 240 | Connector Modular, Han(R) Coding Pin       | R2-6a               | connector                          | 6a        |           |           |           |            |             |
| 79  | CONNECTOR,SOC,CABLE,C13                    | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 111 | CONNECTOR,TERMINAL BLOCK,5P                | R2-6c               | connector                          |           |           | 6c        |           |            |             |
| 16  | CONTACT,14AWG MALE 16A PWR                 | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 14  | CONTACT,14AWG,FEMALE,HAN E                 | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 31  | CONTACT,16A F (7PIN HAN)                   | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 22  | CONTACT,16A F 16AWG                        | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 30  | CONTACT,16AWG,MALE,HAN D                   | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 10  | CONTACT,40A F 14AWG                        | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 173 | CONTACT,CRIMP,Han D,F,14 AWG               | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 171 | CONTACT,CRIMP,Han E, 14AWG                 | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 37  | CONTACT,HANQ M 18AWG                       | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |

| #   | Description                         | RoHS Exemption Used | Additional information             | Exmpt. 6a | Exmpt. 6b | Exmpt. 6c | Exmpt. 7a | Exmpt. 7c1 | Exmpt. 7cII |
|-----|-------------------------------------|---------------------|------------------------------------|-----------|-----------|-----------|-----------|------------|-------------|
| 9   | CONTACT,MALE,10AWG,HAN C            | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 12  | CONTACT,MALE,12AWG,HAN C            | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 15  | CONTACT,MALE,16AWG,HAN E            | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 32  | CONTACT,RELAY,14AWG MALE            | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 59  | CONTACT,SOCKET 0.75-2.5 SQMM        | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 152 | CONTACT,SOCKET,(F) M SERIES         | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 58  | CONTACT,SOCKET,0.08-0.56SQMM        | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 63  | CONTACT,SOCKET,18AWG                | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 60  | CONTACT,SOCKET,24-20AWG             | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 66  | CONTACT,SOCKET,30-26AWG             | R2-6c               | connector pin, terminal, or socket |           |           | 6c        |           |            |             |
| 6   | CONNECTOR,FEM SCRWLOCKS             | R2-6a               | complex controller                 | 6a        |           |           |           | 7c1        |             |
| 155 | CONNECTOR,RECEPTACLE,DSUB,25 POS    | R2-6a               | complex controller                 | 6a        |           |           |           | 7c1        |             |
| 185 | CONVERTER,PNP OUTPUT                | R2-7a               |                                    |           |           |           | 7a        |            |             |
| 19  | CORD GRIP PG11 6.5-9.5MM            | R2-6c               |                                    |           |           | 6c        |           |            |             |
| 181 | COUPLING,QUICK DISCONNECT BODY      | R2-6c               |                                    |           |           | 6c        |           |            |             |
| 182 | COUPLING,QUICK DISCONNECT BODY      | R2-6c               |                                    |           |           | 6c        |           |            |             |
| 33  | COVER,CONN HOOD, SIZE HAN 3A        | R2-6c               |                                    |           |           | 6c        |           |            |             |
| 93  | COVER,CONN,M12,FM,16.1DIA           | R2-6c               |                                    |           |           | 6c        |           |            |             |
| 62  | COVER,CONNECTOR 9PIN 45°METAL       | R2-6a               |                                    | 6a        |           |           |           |            |             |
| 234 | Crimp, rotary connector, female skt | R2-6c               |                                    |           |           | 6c        |           |            |             |
| 233 | Crimp, rotary connector, male pin   | R2-6c               |                                    |           |           | 6c        |           |            |             |
| 8   | CRIMP,MALE,2.5MM SQ                 | R2-6c               |                                    |           |           | 6c        |           |            |             |
| 137 | CRIMPER,#26-14 AWG                  | R2-6a               |                                    | 6a        |           |           |           |            |             |
| 254 | CRYSTAL 24MHZ SMD                   | R2-7a               |                                    |           |           |           | 7a        |            |             |
| 255 | CRYSTAL OSC 1.8432MHZ SMD           | R2-7a               |                                    |           |           |           | 7a        |            |             |
| 112 | DEVICENET, T-BRANCH, TAP            | R2-6c               |                                    |           |           | 6c        |           |            |             |
| 135 | DIODE,150VR 200MA IF THD            | R2-7c1              |                                    |           |           |           |           | 7c1        |             |
| 258 | DIODE,1N3595                        | R2-7c1              |                                    |           |           |           |           | 7c1        |             |
| 136 | DIODE,3A                            | R2-7a               |                                    |           |           |           | 7a        |            |             |
| 257 | DIODE,P6KE15CA.                     | R2-7a               |                                    |           |           |           | 7a        |            |             |
| 205 | E-CAT TERM,8X DIGITAL INPUT,NPN     | R2-6c, R2-7c1       |                                    |           |           | 6c        |           | 7c1        |             |
| 206 | E-CAT TERM,8X DIGITAL OUTPUT,NPN    | R2-6c, R2-7c1       |                                    |           |           | 6c        |           | 7c1        |             |
| 208 | E-CAT TERM,BUS END CAP              | R2-6c, R2-7c1       |                                    |           |           | 6c        |           | 7c1        |             |
| 207 | E-CAT TERM,E-BUS POWER SUPPLY       | R2-6c, R2-7c1       |                                    |           |           | 6c        |           | 7c1        |             |
| 204 | E-CAT TERM,I/O BUS SUPPLY W/FUSE    | R2-6c, R2-7c1       |                                    |           |           | 6c        |           | 7c1        |             |

| #   | Description                              | RoHS Exemption Used | Additional information                        | Exmpt. 6a | Exmpt. 6b | Exmpt. 6c | Exmpt. 7a | Exmpt. 7c1 | Exmpt. 7cII |
|-----|--|---------------------|---|-----------|-----------|-----------|-----------|------------|-------------|
| 115 | Emka Bow-type handle Version 1           | R2-6b               |   |           | 6b        |           |           |            |             |
| 4   | HANDLE, OVAL, SST, M5                    | R2-6a               |   | 6a        |           |           |           |            |             |
| 52  | FEEDTHRU,COAX,3KV,7A                     | R2-6b, R2-6c        |   |           | 6b        | 6c        |           |            |             |
| 53  | FEEDTHRU,COAX,3KV,7A                     | R2-6b, R2-6c        |   |           | 6b        | 6c        |           |            |             |
| 70  | FEEDTHRU,COAX,5KVDC,10A,50OHM            | R2-6b, R2-6c        |   |           | 6b        | 6c        |           |            |             |
| 24  | FITTING,CABLE,M25,18-25MM                | R2-6c               |   |           |           | 6c        |           |            |             |
| 23  | FITTING,CABLE,M25,9-16MM                 | R2-6c               |   |           |           | 6c        |           |            |             |
| 36  | FITTING,REDUCER,M32-M20                  | R2-6c               |   |           |           | 6c        |           |            |             |
| 170 | HOOD,CONN,HD,LOCKDOWN                    | R2-6a               |   | 6a        |           | 6c        |           |            |             |
| 253 | FUSEHOLDER + FUSE 2A SMD                 | R2-7a               |   |           |           |           | 7a        |            |             |
| 237 | Han r Single Insert Module Hood Frame    | R2-6c               |   |           |           | 6c        |           |            |             |
| 238 | Han(R) 4 insert Module A-D Hood Frame    | R2-6c               |   |           |           | 6c        |           |            |             |
| 40  | HOOD,D-SUB,15POS,45DEG,4-40THD           | R2-6a               |   | 6a        |           |           |           |            |             |
| 2   | JACK SCREW,4-40 X .250 LG                | R2-6a               |   | 6a        |           |           |           |            |             |
| 165 | HOOD,CONNECTOR,ANGLED,7-12 MM            | R2-6c               |   |           |           | 6c        |           |            |             |
| 166 | HOOD,CONNECTOR,STRAIGHT,3-7MM            | R2-6c               |   |           |           | 6c        |           |            |             |
| 167 | HOOD,CONNECTOR,STRAIGHT,7-12MM           | R2-6c               |   |           |           | 6c        |           |            |             |
| 245 | JACK SCREW,4-40 X .250 LG                | R2-6a               |   | 6a        |           |           |           |            |             |
| 224 | I/O MOD, 2 ANLG OUT,4-20MA,ETHERCAT      | R2-6c, R2-7c1       | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 193 | I/O MOD,2 ANLG IN,DIF INPUT,4-20MA,E-BUS | R2-6c, R2-7c1       | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 211 | I/O MOD,4 ANLG IN,DIF INPUT,4-20MA       | R2-6c, R2-7c1       | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 217 | I/O MODULE, 4 ANALOG OUT,4-20MA,ETHERCAT | R2-6c, R2-7c1       | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 210 | I/O MODULE,16 DIG OUT,24VDC,0.5,ETHERCAT | R2-6c, R2-7c1       | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 209 | I/O MODULE,16 DIGITAL IN,PNP,ETHERCAT    | R2-6c, R2-7c1       | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 212 | I/O MODULE,16 DIGITAL INPUT,NPN,ETHERCAT | R2-6c, R2-7c1       | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 215 | I/O MODULE,4 DIG IN,TWIN SAFE,ETHERCAT   | R2-6c, R2-7c1       | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |

| #   | Description                              | RoHS Exemption Used  | Additional information                        | Exmpt. 6a | Exmpt. 6b | Exmpt. 6c | Exmpt. 7a | Exmpt. 7c1 | Exmpt. 7cII |
|-----|--|----------------------|---|-----------|-----------|-----------|-----------|------------|-------------|
| 214 | I/O MODULE,4 DIG OUT,TWIN SAFE,ETHERCAT  | R2-6c, R2-7c1        | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 223 | I/O MODULE,8 DIG OUT,24VDC,0.5,ETHERCAT  | R2-6c, R2-7c1        | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 222 | I/O MODULE,8 DIGITAL IN,PNP,ETHERCAT     | R2-6c, R2-7c1        | interface module for machine control computer |           |           | 6c        |           | 7c1        |             |
| 122 | I/O UNIT,SEQ CONTR                       | R2-6c, R2-7a, R2-7c1 | interface module for machine control computer |           |           | 6c        | 7a        | 7c1        |             |
| 256 | IC REG POS VOLT 1A 5V D2PAK              | R2-7a                |   |           |           |           | 7a        |            |             |
| 218 | IO MOD,4 RELAY OUT,125VAC/30VDC,ETHERCAT | R2-6c, R2-7c1        |   |           |           | 6c        |           | 7c1        |             |
| 47  | JACKSCREW KIT, 4-40                      | R2-6a                |   | 6a        |           |           |           |            |             |
| 26  | SCREWLOCK,4-40 TO M2.6 FEMALE            | R2-6a                |   | 6a        |           |           |           |            |             |
| 183 | JACK, BANANA                             | R2-6c                |   |           |           | 6c        |           |            |             |
| 84  | JACK, BANANA, NON INSUL,0.175"           | R2-6c                |   |           |           | 6c        |           |            |             |
| 243 | SPRNG ANCHOR,6-32,STEEL,BLK OX           | R2-6a                |   | 6a        |           |           |           |            |             |
| 249 | JAM NUT FOR PCB/PANAL MOUNT              | R2-6c                |   |           |           | 6c        |           |            |             |
| 27  | THUMBSCREW, M2.6 X 1.90" LG              | R2-6a                |   | 6a        |           | 6c        |           |            |             |
| 5   | FOOT,LEVELER                             | R2-6a, R2-6b, R2-6c  |   | 6a        | 6b        | 6c        |           |            |             |
| 121 | LAN CABLE,CAT6, 5' YELLOW                | R2-6a, R2-6b, R2-6c  |   | 6a        | 6b        | 6c        |           |            |             |
| 119 | LAN CABLE,PATCH,CAT6,14'Ylw              | R2-6a, R2-6b, R2-6c  |   | 6a        | 6b        | 6c        |           |            |             |
| 116 | LAN CABLE,PATCH,CAT6,20' RED             | R2-6a, R2-6b, R2-6c  |   | 6a        | 6b        | 6c        |           |            |             |
| 117 | LAN CABLE,PATCH,CAT6,25R RE              | R2-6a, R2-6b, R2-6c  |   | 6a        | 6b        | 6c        |           |            |             |
| 201 | LIGHT CURTAIN,tx/rx,SET,28"              | R2-7a, R2-7c1        |   |           |           |           | 7a        | 7c1        |             |
| 244 | LUG, PWR FEED BUSBAR 100A                | R2-6c                |   |           |           | 6c        |           |            |             |





## About SEMI Europe

SEMI Europe is the European arm of SEMI, the industry association connecting more than 2,400 semiconductor and electronics manufacturing companies worldwide, including nearly 300 European headquartered businesses. SEMI members are responsible for the innovations in materials, design, equipment, software, devices and services that enable smarter, faster, more powerful and more affordable electronic products.

## Association Contact

Laith Altimime, President, SEMI Europe | [laltimime@semi.org](mailto:laltimime@semi.org)