KOA SPEER ELECTRONICS, INC.

RoHS Certificate of Compliance

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European Union Directive 2002/95/EC is known as RoHS, for “restriction of hazardous substances.” It required the EU member states to ban the use of six substances–lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (Cr^{6+}), polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE)–in new electrical and electronic equipment except in specific applications and industries that have been exempt. These exemptions are periodically reviewed and updated.

European Union Directive 2011/65/EU, known as RoHS Recast or RoHS 2, consolidated the original RoHS directive with its later amendments, including changes to the exemption list, and added new procedures and labeling. It has replaced the previous directive as the primary RoHS legislation and has extended it to products that had not been subject to the original directive.

No KOA products use asbestos, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, or polybrominated diphenyl ethers. They are also free of perfluorooctane sulfonates (PFOS) and decabromodiphenyl ethers (deca-BDE), meeting the EU RoHS 2006/122/EC Directive.

A KOA part number includes a designator for the termination material, which is considered by RoHS 2 as one of the solder materials. Those parts with lead-free terminations (any designator other than ‘L’) are RoHS 2 compliant in all industries. Some of these parts may include lead in exempt applications. Please see the annexes for information on which exemptions apply to which series.

All KOA products and backward and forward compatible and may be used in both lead-free and lead-bearing solder processes. All products can withstand 10 seconds at 260°C temperatures for three cycles, have an MSL of 1 (with a recommended two-year shelf life for best practices), and meet J-STD-020C.

Annex I

The following series are RoHS directive 2011/65/EU compliant (without any use of exemptions) for all industries when specified with any termination designator other than ‘L’:

AC(X)
AFS
BGR
BLR
BPR
BSR
BWR
CC
CCF
CCF1F
CCP
CF
CFS
CFP
CNN
CSR
CW
CWH
CWP
CZB
CZP
DN(X)
J
JL
KL73
KLC
KT11835
KTZ
LCM
LF
LFF
LKS
LP
LP73
LPC4235
LPC4545
LR
LR72
LT
LT73
LT73V
LWA
MF
MFS
MHL
MLT
MO
MOS
MRP
MRS
NPO
NPR1 (3.9mΩ - 62mΩ)
NPR2 (3.9mΩ - 62mΩ)
NV73 1E
NV73 1H
NV73DS
PAP
PGD
PGE
PSB
PSE
PSI
PSN
PSO
PV
PWW
R(X)A
RCS
RCT
RCU
RCW
RD(X)
RD41
RM41
RN41
RN73
RN73H
RNS
RT(X)
RW
SDR
SDS
SDT101
SDT73H
SDT73V
SF
SF45
SHDR
SL07
SL1 (3mΩ - 100mΩ)
SL2 (3mΩ - 360mΩ)
SL3
SLF
SLN
SLW1
SLZ
SPR
ST
TF16AT
TF(X)
TLR
TLRH
TLRZ
TPR
TSL
UR73
UR73D
WF
X5R
X7R
Y5V
Z

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Annex II

The following series are RoHS directive 2011/65/EU compliant for all industries, using exemption 7(c)-I "Electrical and electronic components containing LEAD in a glass or ceramic other than dielectric ceramic in capacitors (piezoelectronic devices) or in a glass or ceramic matrix compound", when specified with any termination designator other than 'L':

BR
CN
CN_A
CN_H
CN_K
CN_N
CNB
CND
CN_RT
CN_KRT
CNZ
CPCN
CR
GS
HPC
HV73
KA
KQ
KQC
KQT
LA73
LPC4045
LPC9040E
LPC9040N
LPC10065
LPC12065
MCM
NPR1 (68mΩ - 22MΩ)
NPR2 (68mΩ - 22MΩ)
NT73
NV73 1J
NV73 2A
NV73 2B
NV73 2E
NV73 2J
NV73 2L
NV73 DL
NVD
PCF
PN
PT72
RCR
RF
RF25CC
RF26
RF73
RK1/4
RK1/2
RK1
RK26
RK73A
RK73B
RK73G
RK73H
RK73_RT
RK73Z
RK92
RKC
RKH
RKL
SA
SDT310
SDT310HCTP
SG73
SG73_RT
SG73P
SG73S
SL1 (110mΩ - 22MΩ)
SL2 (390mΩ - 22MΩ)
SR73
TF10BN
TF16SN
WK73

Annex III

The following series are RoHS directive 2011/65/EU compliant for all industries, using exemption 7(a) "LEAD in high melting temperature type solders (lead-based alloys containing 85% by weight or more lead)", when specified with any termination designator other than 'L':

KL32 (0.12µH - 0.82µH)
KL32 (100µH - 330µH)

Annex IV

The following series are RoHS directive 2011/65/EU compliant for all industries, using exemption 7(a) "LEAD in high melting temperature type solders (lead-based alloys containing 85% by weight or more lead)" and exemption 7(c)-I "Electrical and electronic components containing LEAD in a glass or ceramic other than dielectric ceramic in capacitors (piezoelectronic devices) or in a glass or ceramic matrix compound", when specified with any termination designator other than 'L':

KL32 (0.005µH - 0.10µH)
KL32 (1.0µH - 82µH)
MRGF16

Annex V

The following series are RoHS directive 2011/65/EU compliant for the telecom industry, using exemption 7(b) "LEAD in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications", when specified with the 'L' (SnPb) termination designator:

AC(X)
AFS
BGR
BLR
BPR
BSR
BWR
CC
CCF
CCF1F
CCP
CF
CFS
CFP
CNN
CSR
CW
CWH
CWP
CZB

CZP
DN(X)
J
JL
KL73
KLC
KT11835
KTZ
LCM
LF
LFF
LKS
LP
LP73
LPC4235
LPC4545
LR
LR72
LT
LT73
LT73V
LWA
MF
MFS
MHL
MLT
MO
MOS
MRP
MRS
NPO
NPR1 (3.9mΩ - 62mΩ)
NPR2 (3.9mΩ - 62mΩ)
NV73 1E
NV73 1H
NV73DS
PAP
PGD
PGE
PSB
PSE
PSI
PSN
PSO
PV
PWW
R(X)A
RCS
RCT
RCU
RCW
RD(X)
RD41
RM41
RN41
RN73
RN73H
RNS
RT(X)
RW
SDR
SDS
SDT101
SDT73H
SDT73V
SF
SF45
SHDR
SL07
SL1 (3mΩ - 100mΩ)
SL2 (3mΩ - 360mΩ)
SL3
SLF
SLN
SLW1
SLZ
SPR
ST
TF16AT
TF(X)
TLR
TLRH
TLRZ
TPR
TSL
UR73
UR73D
WF
X5R
X7R
Y5V
Z

Annex VI

The following series are RoHS directive 2011/65/EU compliant for the telecom industry, using exemption 7(b) “LEAD in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications” and exemption 7(c)-I “Electrical and electronic components containing LEAD in a glass or ceramic other than dielectric ceramic in capacitors (piezoelectronic devices) or in a glass or ceramic matrix compound”, when specified with the ‘L’ (SnPb) termination designator:

BR
CN
CN_A
CN_H
CN_K
CN_N
CNB
CND
CN_RT
CN_KRT
CNZ
CPCN
CR
GS
HPC
HV73
KA
KQ
KQC
KQT
LA73
LPC4045
LPC9040E
LPC9040N
LPC10065
LPC12065
MCM
NPR1 (68mΩ - 22MΩ)
NPR2 (68mΩ - 22MΩ)
NT73
NV73 1J
NV73 2A
NV73 2B
NV73 2E
NV73 2J
NV73 2L
NV73 DL
NVD
PCF
PN
PT72
RCR
RF
RF25CC
RF26
RF73
RK1/4
RK1/2
RK1
RK26
RK73A
RK73B
RK73G
RK73H
RK73_RT
RK73Z
RK92
RKC
RKH
RKL
SA
SDT310
SDT310HCTP
SG73
SG73_RT
SG73P
SG73S
SL1 (110mΩ - 22MΩ)
SL2 (390mΩ - 22MΩ)
SR73
TF10BN
TF16SN
WK73

Annex VII

The following series are RoHS directive 2011/65/EU compliant for the telecom industry, using exemption 7(a) “LEAD in high melting temperature type solders (lead-based alloys containing 85% by weight or more lead)” and exemption 7(b) “LEAD in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications”, when specified with the ‘L’ (SnPb) termination designator:

KL32 (0.12µH - 0.82µH) KL32 (100µH - 330µH)

Annex VIII

The following series are RoHS directive 2011/65/EU compliant for the telecom industry, using exemption 7(a) “LEAD in high melting temperature type solders (lead-based alloys containing 85% by weight or more lead)”, exemption 7(b) “LEAD in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications”, and exemption 7(c)-I “Electrical and electronic components containing LEAD in a glass or ceramic other than dielectric ceramic in capacitors (piezoelectronic devices) or in a glass or ceramic matrix compound”, when specified with the ‘L’ (SnPb) termination designator:

KL32 (0.005µH - 0.10µH) KL32 (1.0µH - 82µH) MRGF16

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