

Lead Free / RoHS Status

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS). As part of this ongoing program, we periodically update this document with the status regarding the availability of our lead-free components. All our standard part numbers are now manufactured lead-free.

Resistors						
Standard Product Series	Description	Package / Termination Type	Legacy Series	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
ASR	Anti-Surge Leaded Resistor	Axial	-	99.3/0.7 Sn/Cu	Apr-05	05/14
ASRM	Mini-Anti Surge Leaded Resistor	Axial	-	99.3/0.7 Sn/Cu	Apr-05	05/14
BR	Open Air Bare Element Current Sense Resistor	Special	-	100% Matte Sn	Jan-06	06/01
BVM	Ceramic Housed Vertical Wirewound Bracket Mount Resistor	Special	-	100% Matte Sn	Always	Always
CB	General Purpose Ceramic Housed with Axial Leads Wirewound Resistor	Axial	-	100% Matte Sn	Jan-06	06/01
CD	Axial Leaded Zero Ohm Resistor	Axial	-	100% Matte Sn	Jan-04	04/01
CEL	Commercial Power Resistor (Coated)	Axial	-	100% Matte Sn	Always	Always
CF	Carbon Film Leaded Resistor	Axial	-	100% Matte Sn	Jan-04 (Taiwan, China)	04/01
CFM	Mini-Carbon Film Leaded Resistor	Axial	-	100% Matte Sn	Jan-04 (Taiwan, China)	04/01
CSNL	Metal Foil Current Sensing Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	May-04	04/18
CSR	Thick Film Current Sensing Surface Mount Chip Resistor	SMD	CSF	100% Matte Sn over Ni	May-04	04/18
CSRF	Foil on Ceramic Current Sensing Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	Jul-04	04/27
CSRN	Thick Film Current Sensing Surface Mount Chip Resistor, Narrow	SMD	-	100% Matte Sn over Ni	May-04	04/18
CSS	Ultra Precision Current Sensing Chip Resistor	SMD	-	100% Matte Sn over Ni	Always	Always
CSSH	Ultra Precision Current Sensing Chip Resistor (High Power)	SMD	-	100% Matte Sn over Ni	Always	Always

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EL	Commercial Power Resistor (Uncoated)	Axial	-	100% Matte Sn	Always	Always
ESA(U)	Low and Ultra-Low Capacitance ESD Suppressor Arrays	SMD	-	100% Matte Sn over Ni	Always	Always
ESD(U)	Low and Ultra-Low Capacitance ESD Suppressor	SMD	-	100% Matte Sn over Ni	Always	Always
EWT	Non-Flammable Edgewound Tubular Wirewound Vitreous Enamel Coating Resistor	Special	-	100% Matte Sn	Always	Always
FCR	Trimable Thick Film Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	Jan-04	04/01
FRN	Axial Leaded Fusing Resistor	Axial	-	99.3/0.7 Sn/Cu	Apr-05	05/14
GP	Commercial Grade - Conformal Coated Leaded Wirewound Resistor	Axial	-	100% Matte Sn	Jan-06	06/01
HDM	Moisture Resistant Carbon Film Leaded Resistor	Axial	-	100% Matte Sn	Always	Always
HLD	Open air Bare Element Current Shunt / Sensing Resistor	Special (4 Leads)	-	100% Matte Sn	Always	Always
HMC	High Value Thick Film Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	Jan-04	04/01
HPC	High Power Surface Mount Resistor	SMD	-	100% Matte Sn	Always	Always
HVC	High Voltage Thick Film Surface Mount Chip Resistor	SMD	-	100% Matte Sn ("T")	Always	Always
HVD	High Voltage Leaded Resistor Dividers	Radial Special	-	96.3/3.7 Sn/Ag	Always	Always
HVR	High Voltage Leaded Resistor Networks	Radial Special	-	100% Matte Sn	Always	Always
JW	Tin Plated Jumper Wire Resistor	Axial	-	100% Matte Sn	Jan-04	04/01
KAL	Aluminum Housed Surface Mount Resistor General Purpose/Precision High Power Resistor	Special	-	100% Matte Sn	Jan-06	06/01
LCB	Ceramic Housed Current Sensing Resistor with 2 Leads	Axial	-	100% Matte Sn	Jan-06	06/01
LVM	Ceramic Housed Vertical Mount Low Resistance Resistor (Ribbon Element)	Radial	-	100% Matte SN	Jan-06	06/01
MCB	Ceramic Housed General Purpose Metal Oxide Element Resistor	Axial	-	100% Matte Sn	Jan-06	06/01
MG	High Voltage Metal Glaze Leaded Resistor	Axial	-	100% Matte Sn	Jan-06	04/01

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MGM	High Voltage Mini Metal Glaze Leaded Resistor	Axial	-	100% Matte Sn	Always	Always
MHL	Metal Clad Wirewound Resistor	Special	-	100% Matte Sn	Always	Always
MLF	Precision Metal Film Melf Resistor	SMD	-	100% Matte Sn	Always	Always
MLFM	Precision Metal Film Mini Melf Resistor	SMD	-	100% Matte Sn	Always	Always
MPR	Flameproof Rectangular Type Metal Plate Resistor	Radial Special	-	100% Matte Sn	Always	Always
MR	Low Resistance Value Leaded Resistor - Molded 2 Leads	Axial Kelvin	-	100% Matte Sn	Jan-06	06/01
MVM	Ceramic Housed Vertical Mount Wirewound Resistor (Metal Oxide)	Radial	-	100% Matte Sn	Jan-06	06/01
MWW	General Purpose and Precision Leaded Wirewound Resistor - Molded	Axial	-	100% Matte Sn	Jan-06	06/01
NMCR	Non-Magnetic Chip Resistor REPLACED BY NMCT	SMD	-	100% Matte Sn	Always	Always
NMCT	Non-Magnetic Chip Resistor	SMD	-	100% Matte Sn	Always	Always
NSP	Ceramic Housed - Consumer Grade Leaded Resistor	Axial	-	99.3/0.7 Sn/Cu	Jan-04	04/01
NSZ	Ceramic Housed Wirewound Resistor with Specialty Leads	Radial	-	99.3/0.7 Sn/Cu	Jan-04	04/01
NVM	Ceramic Housed Vertical Mount Wirewound	Radial	-	100% Matte Sn	Jan-06	06/01
NWW	General Purpose and Precision Leaded Wirewound Resistor - Conformal Coated - Non-Inductive	Axial	-	100% Matte Sn	Jan-06	06/01
PCB	Ceramic Housed Leaded Wirewound Resistor - Commercial Grade - PC Mount	Radial	-	100% Matte Sn	Always	Always
RACF	Thick Film Surface Mount Chip Resistor Array Concave Terminations	SMD	RAC	100% Matte Sn over Ni	Jan-04	04/01
RAF	Thick Film Surface Mount Chip Resistor Array Flat Terminations	SMD	-	100% Matte Sn over Ni	Jul-04	04/27
RAVF	Thick Film Surface Mount Chip Resistor Array Convex Terminations	SMD	RAV	100% Matte Sn over Ni	Jan-04 (Japan) Jul-04 (Taiwan)	04/01 04/27
RC	Carbon Composition Leaded Resistor	Axial	-	100% Matte Sn	Jan-86	86/01
RGC	Semi-Precision Thick Film Surface Mount Resistor	SMD	-	100% Matte Sn over Ni	Jul-04	04/27

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RHC	High Power Thick Film Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	Jul-04	04/27
RMCF	General Purpose Thick Film Surface Mount Chip Resistor	SMD	RMC	100% Matte Sn over Ni	Jan-04 (Japan) Jan-05 (Taiwan, China)	04/01 05/01
RMCG	Gold Barrier Thick Film Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	Jan-06	06/01
RMCP	General Purpose High Power Thick Film Chip Resistor	SMD	-	100% Matte Sn over Ni	Always	Always
RMCS	Sulfur Resistant Thick Film Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	Always	Always
RNCF	Precision Thin Film Surface Mount Chip Resistor	SMD	RNC	100% Matte Sn over Ni	May-04	04/18
RNCP	High Power Anti-Sulfur Thin Film Chip Resistor	SMD	-	100% Matte Sn over Ni	Always	Always
RNCS	Anti-Corrosive Tantalum Nitride Replacement Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	May-04	04/18
RNCW	Thin Film Wire-Bondable Chip Resistor	SMD	-	Gold Plating	Always	Always
RNF	General Purpose Metal Film Leaded Resistor	Axial	RN	99.3/0.7 Sn/Cu 100% Matte Sn	Apr-05 (Japan) Jan-04 (Taiwan, China)	05/14 04/01
RNMF	General Purpose Mini Metal Film Leaded Resistor	Axial	RNM	99.3/0.7 Sn/Cu 100% Matte Sn	Apr-05 (Japan) Jan-04 (Taiwan, China)	05/14 04/01
RNS	Ultra-Miniature Metal Film Resistor	Axial	-	100% Matte Sn	Always	Always
RNV	High Voltage Anti-Moisture Metal Film Resistor	Axial	-	99.3 0.7 Sn/Cu	Always	Always
RPC	Pulse Withstanding Thick Film Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	Jan-03	03/01
RSF	General Purpose Metal Oxide Leaded Resistor	Axial	RS	99.3/0.7 Sn/Cu 100% Matte Sn	Apr-05 (Japan) Jan-04 (Taiwan, China)	05/14 04/01
RSMF	Mini-Metal Oxide Leaded Resistor	Axial	RSM	99.3/0.7 Sn/Cu 100% Matte Sn	Apr-05 (Japan) Jan-04 (Taiwan, China)	05/14 04/01
RSPF	Flameproof Power Leaded Resistor	Axial	-	99.3/0.7 Sn/Cu	Apr-05	05/14
RSPL	Flameproof Power Leaded Resistor Low Resistance	Axial	-	99.3/0.7 Sn/Cu	Apr-05	05/14
RVC	Medium Voltage Thick Film Surface Mount Chip Resistor	SMD	-	100% Matte Sn over Ni	Jan-03	03/01
RWT	Thermal Fusing Vertical Mount Wirewound Leaded Resistor	Radial	-	100% Matte Sn	Always	Always

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SM	Surface Mount - General Purpose and Precision Wirewound Resistor	SMD	-	100% Matte Sn	Jan-06	06/01
SP	UL1412 Certified Fusing Wirewound Resistor	Axial	-	100% Matte Sn	Always	Always
SPR	Discharge Path Leaded Resistor	Axial	-	99.3/0.7 Sn/Cu	Apr-05	05/14
SWT	Non-Flammable Edgewound Tubular Wirewound Silicone Coating Resistor	Special	-	100% Matte Sn	Always	Always
TCB	Ceramic Housed Current Sensing Resistor with 4 Leads	Special (4 Leads)	-	100% Matte Sn	Jan-06	06/01
TMR	Low Resistance Value Leaded Resistor - Molded 4 Leads	Axial Kelvin	-	100% Matte Sn	Jan-06	06/01
TR	TO-220 and TO-247 Style Power Leaded Resistor	Radial Special	-	100% Matte Sn	Always	Always
VM	Ceramic Housed Vertical Mount Wirewound Resistor (Standard WW)	Radial	-	100% Matte Sn	Jan-06	06/01
WCB	Ceramic Housed with Axial Leads Wirewound Resistor	Axial	-	100% Matte Sn	Jan-06	06/01
WRC	Conformal Coated Welded Wirewound Resistor	Axial	-	100% Matte Sn	Always	Always
WRF	Consumer Grade - Conformal Coated Leaded Wirewound Resistor	Axial	-	99.3/0.7 Sn/Cu	Jan-04	04/01
WVM	Ceramic Housed Vertical Mount Wirewound Resistor (Precision Wirewound)	Radial	-	100% Matte Sn	Jan-06	06/01
WW	General Purpose and Precision Leaded Wirewound Resistor - Conformal Coated - Non-Inductive	Axial	-	100% Matte Sn	Jan-06	06/01
WWF	General Purpose and Precision Fusing Wirewound Resistor	Axial	-	100% Matte Sn	Always	Always

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Varistors						
Standard Product Series	Description	Package / Termination Type	Legacy Series	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
AV	Automotive SMD Varistor (12 & 24 Volt Power Supply)	SMD	-	Proprietary Barrier Termination (special designation "N") for lead-free assembly; AgPd for Pb-containing assembly	Always	Always
AVL	Automotive Leaded Varistor Straight Leads	Leaded	AV	100% Matte Sn	Jul-05	05/27
CV	Low & Medium Voltage Leaded Varistor	Leaded	-	100% Matte Sn	Jul-05	05/27
CVH	Medium Voltage Leaded Varistor	Leaded	CV+	100% Matte Sn	Jul-05	05/27
DV	Low & Medium Voltage SMD Varistor	SMD	-	Proprietary Barrier Termination	Always	Always
MV	Low Voltage Leaded Dual Function Varistor - RFI Suppressor	Leaded	-	100% Matte Sn	Jul-05	05/27
OV	Automotive Leaded Dual Function Varistor - RFI Suppressor	Leaded	-	100% Matte Sn	Jul-05	05/27
PV	Low & Medium Voltage Plastic Encapsulated SMD Varistor	SMD	-	Tinned Cu	Always	Always
SV	Special Medium Voltage Leaded Varistor	Leaded	-	100% Matte Sn	Jul-05	05/27
ZOV	High Energy Varistor	SMD	-	100% Matte Sn	Always	Always
ZV	Standard Low Voltage SMD Varistor	SMD	-	Proprietary Barrier Termination (special designation "N") for lead-free assembly; AgPd for Pb-containing assembly	Always	Always
ZVE	ESD Suppression SMD Varistor	SMD	-		Always	Always
ZVL	Low Voltage Radial Leaded MLV Varistor	Leaded	ZV	100% Matte Sn	Jul-05	05/27
ZVX	Low Energy, Low Capacitance SMD Varistor	SMD	-	Proprietary Barrier Termination (special designation "N") for lead-free assembly; AgPd for Pb-containing assembly	Always	Always

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Inductors						
Standard Product Series	Description	Package / Termination Type	Legacy Series	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
AL	Thin Film Surface Mount Chip Inductor	SMD	-	100% Matte Sn over Ni	May-04	04/18
NL	Surface Mount Ferrite Wirewound Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PCD	Unshielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PCDR	Shielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PCDS	Shielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PCS	Shielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PD	Unshielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PDH	Unshielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PDRH	Shielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PS	Shielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PSDB	Shielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
PTS	Shielded SMD Power Inductor	SMD	-	100% Matte Sn	Always	Always
SCDS	Shielded SMD Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
VLH	Miniature Wirewound Surface Mount Power Inductor	SMD	-	100% Matte Sn	Aug-05	05/31
WL	Wirewound Ceramic Surface Mount Chip Inductor	SMD	-	100% Matte Sn	Aug-05	05/31