

Vishay Lead-Free Family Summary Sheet-Capacitor Components

Technology/ Product Line	Product Family	Vishay Division	Pb-free Quant. Complete and Report Available (QTY)	Pb-free Samples available (QTY)	Pb-free Mass production (QTY)	Pb Free "2nd-Level Interconnect" Status			Tin Lead (Sn/Pb) Products/Termination available after Conversion	Moisture Sensitivity Level	Pb-Free ECA/STP+2420C compliant (1 sec./Cycle)	Backward Compatibility	RoHS Qual. Complete and Report Available (QTY)	RoHS Compl. Samples (QTY)	RoHS Compl. Mass production (QTY)	Exemptions Used	China Pollution Act Information (SJ/T11363-2006)						PCN-Status						
						Termination Finish	Underlayer	Lead or Base material									How to Order-Web (Lead Free)	China RoHS Compliant (YES/NO) 符合中国RoHS (是否)	EUPP (YEARS) 环保使用期限 (年)	Location of Hazardous Substance(s) 有害物质物质所在部件	Pb 含量	Hg 含量	Cd 含量	Cr(VI) 六价铬	PBB 多溴联苯	PBDE 多溴二苯醚	Product Change Notification No. / Ref	Product Change Notification Date	
Aluminum/Electrolytic																													
ALU ROE	Radial EKA, EKB,EKE ("K"), EK, EK, EKI, EK, EKO, EKOU, EKS, EK, EK, EK, EKX	RO	✓	✓	✓	100% Sn matte	Cu	Fe	Standard Part Number	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	TBD	Oct 04
ALU ROE	Radial EKA, EKB,EKE ("E")	RO	✓	✓	✓	100% Sn matte	Cu	Fe	14th digit: "E" -> "F"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	TBD	Oct 04
ALU ROE	Snap-In EYN, EYH	RO	✓	✓	✓	100% Sn matte	Cu	Fe	Standard Part Number	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	TBD	Oct 04
ALU ROE	SMD Vertical ECA, ECB, ECV NOT Lead Free Solderable	RO	✓	✓	✓	100% Sn matte	Cu	Fe	Order ECA, ECB, ECV, "RK" for Lead Free Solderable 13th&14th: "0K" -> "RK"	NO	1	225/10/2	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	NA	NA
ALU ROE	SMD Vertical ECA, ECB, ECV dia ≤ 6.3 mm Lead Free Solderable	RO	✓	✓	✓	100% Sn matte	Cu	Fe	New Part Number ECA, ECB, ECV 13th&14th: "RK"	NO	1	250/10/2	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	NA	NA
ALU ROE	SMD Vertical ECA, ECB, ECV dia 8 - 10 mm Lead Free Solderable	RO	✓	✓	✓	100% Sn matte	Cu	Fe	New Part Number ECA, ECB, ECV 13th&14th: "RK"	NO	1	250/5/2	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	NA	NA
ALU ROE	Axial ELM/ EBM/ EGM, EL/ EB/ EG, EBU/ EBT, EBR, EBL/ EGL	RO	✓	✓	✓	100% Sn matte	Cu6S n5	Cu	14th digit: "B" -> "C" 14th digit: "V" -> "W"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU ROE	Mounting Ring EGM, EG, EGL	RO	✓	✓	✓	100% Sn matte	Cu6S n5 / Cu	Fe	14th digit: "B" -> "C" 14th digit: "V" -> "W"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU ROE	DIN-PW+SL EYD, EYK, EYV, EYZ, EY	RO	✓	✓	✓	100% Sn matte	Cu6S n5 / Cu	Fe	14th digit: "V" -> "W"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	ST 2222 101_ /102_ /103_ /104..._ /106	BC	✓	✓	✓	NA	NA	NA	Standard Part Number	NO	NA	NA	NA	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	Clamps for ST series 4322 043 0331 (dia 40) 4322 043 04281 (dia 50) 4322 043 04291 (dia 65) 4322 043 23321 (dia 76) NOT RoHS compliant	BC	✓	✓	✓	Cr(VI) passivation	Zn	Fe	Order New Part Numbers 4322 043 24011 (dia 40) 4322 043 24051 (dia 50) 4322 043 24061 (dia 65) 4322 043 23322 (dia 76) for RoHS compliant versions	NO	NA	NA	NA	NO	NO	None	NO	50	anti-rust coating	O	O	O	O	X	O	O	O		
ALU BCC	Clamps for ST series 4322 043 24041 (dia 40) 4322 043 24051 (dia 50) 4322 043 24061 (dia 65) RoHS compliant	BC	✓	✓	✓	RoHS compliant passivation	Zn	Fe	New Part Numbers 4322 043 24041 (dia 40) 4322 043 24051 (dia 50) 4322 043 24061 (dia 65)	NO	NA	NA	NA	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O		
ALU BCC	Clamps for ST series 4322 043 23322 (dia 76) RoHS compliant	BC	✓	✓	✓	NA	NA	Stainless Steel	New Part Number 4322 032 23322 (dia 76)	NO	NA	NA	NA	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O		
ALU BCC	Axial 2222 021 xxxxx series excl 2222 021 16472 excl 2222 021 27102	BC	✓	✓	✓	100% Sn matte	Cu6S n5	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	Axial PNs 2222 021 16472 2222 021 27102 Lead Containing	BC	NO	NO	NO	Sn95Pb5	none	Cu	Order New Part Numbers 2222 021 90062 2222 021 90064 for Lead Free versions	NO	NA	NA	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O	O	O		
ALU BCC	Axial PNs 2222 021 90062 2222 021 90064 Lead Free	BC	✓	✓	✓	100% Sn matte	Cu6S n5	Cu	New Part Numbers 2222 021 90062 2222 021 90064	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O		
ALU BCC	Axial 2222 118 xxxxx series excl 2222 118 25102	BC	✓	✓	✓	100% Sn matte	Cu6S n5	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	Axial PNs 2222 118 25102 Lead Containing	BC	NO	NO	NO	Sn95Pb5	none	Cu	Order New Part Number 2222 118 90039 for Lead Free version	NO	NA	NA	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O	O	O		
ALU BCC	Axial PNs 2222 118 90039 Lead Free	BC	✓	✓	✓	100% Sn matte	Cu6S n5	Cu	New Part Number 2222 118 90039	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O		
ALU BCC	Axial 2222 119 xxxxx series excl 2222 119 14102	BC	✓	✓	✓	100% Sn matte	Cu6S n5	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	Axial PNs 2222 119 14102 Lead Containing	BC	NO	NO	NO	Sn95Pb5	none	Cu	Order New Part Number 2222 119 90032 for Lead Free version	NO	NA	NA	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O	O	O		
ALU BCC	Axial PNs 2222 119 90032 Lead Free	BC	✓	✓	✓	100% Sn matte	Cu6S n5	Cu	New Part Number 2222 119 90032	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O		
ALU BCC	Axial 2222 022_ /023_ /024_ /025_ /026_ /027_ /030_ /031_ /041_ /042_ /043_ /117_ /120_ /132_ /133_ /138_	BC	✓	✓	✓	100% Sn matte	Cu6S n5	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	Mounting Ring 2222 021_ /022_ /023_ /024_ /025_ /026_ /027_ /041_ /042_ /043_ /118_ /119_ /120_ /132_ /133_ /138_	BC	✓	✓	✓	100% Sn matte	Cu6S n5 / Cu	Fe	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	Radial 2222 013_ /036_ /045_ /046_ /047_ /048_ /116_ /135_ /136_ /140_ /148_ /150_ /151_ /152_ /165_	BC	✓	✓	✓	100% Sn matte	Cu	Fe	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	Radial 2222 037 >9mm diameter, 2222 038 all diameters, 2222 044 all diameters, 2222 134 >3,5 mm diameter	BC	✓	✓	✓	100% Sn matte	Cu	Fe	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	NO	50	solder coating	X	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	Radial 2222 134 < 4 mm diameter	BC	NO	NO	NO	Sn95Pb5	Cu	Fe	Order 2222 134 devices with >3,5 mm diameter for Lead Free versions	YES	NA	NA	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O	O			
ALU BCC	Radial 2222 037 <9 mm diameter, 037	BC	✓	✓	✓	Sn / SnBi3	Cu	Fe	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	Snap-In + DIN-PW + SL 2222 050_ /051_ /052_ /053_ /056_ /057_ /058_ /059_ /100_ /156_ /157_ /158_ /159_ /162_ /163_ /193_ /198_	BC	✓	✓	✓	100% Sn matte	Cu6S n5 / Cu	Fe	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	O	O	HPC-55-04010	7/12/2004

### Vishay Lead-Free Family Summary Sheet-Capacitor Components

Product Description		Pb Free "2nd-Level Interconnect" Status							Soldering				RoHS Status				China Pollution Act Information (SJ/T11363-2006)							PCN-Status				
Technology/ Product Line	Product Family	Vishay Division	Pb-free Qual. Complete and Report Available (QY)	Pb-free Samples available (QY)	Pb-free Mass-production (QY)	Termination Finish	Underlayer	Lead or Base material	How to Order-Web (Lead Free)	Tin Lead (Sn/Pb) Products/Termination available after Conversion	Moisture Sensitivity Level	ROHS-Compliant (SMD-40°C compliant) (Y/N or Time Frame in sec./Cycles)	Backward Compatibility	RoHS Qual. Complete and Report Available (QY)	RoHS Compl. Samples (QY)	RoHS-Compl. Mass-production (QY)	Exemptions Used	China RoHS Compliant (YES/NO) 符合 中國 RoHS (是否)	EUPP (YEARS) 環保使用期限 (年)	Location of Hazardous Substance(s) 有毒有害物質所在物件	Pb 含量 X for Co-MCV 0,1 wt% (SJ/T11363-2006)	Hg 含量 X for Co-MCV 0 for Co-MCV 0,1 wt% (SJ/T11363-2006)	Cd 含量 X for Co-MCV 0 for Co-MCV 0,01 wt% (SJ/T11363-2006)	Cr(VI) 六价铬 X for Co-MCV 0 for Co-MCV 0,1 wt% (SJ/T11363-2006)	PBB 多溴聯苯 X for Co-MCV 0,1 wt% (SJ/T11363-2006)	PBDE 多溴二噁英 X for Co-MCV 0,1 wt% (SJ/T11363-2006)	Product Change Notification No. / Ref	Product Change Notification Date
ALU BCC	Snap-In 2222 093../094../197../199...	BC	✓	✓	✓	100% Sn matte	Cu6S n5 / Cu	Fe	Standard Part Number	NO	NA	NA	✓	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	LF since intro
ALU BCC	Snap-In 2222 096	BC	✓	✓	✓	100% Sn matte	Cu6S n5 / Cu	Fe	Standard Part Number	NO	NA	NA	✓	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		LF since intro
ALU BCC	Clamps for SL series 4322 043 03301 (dia 25) 4322 043 03311 (dia 30) 4322 043 04272 (dia 35) 4322 043 03331 (dia 40) NOT RoHS compliant	BC	✓	✓	✓	Cr(VI) passivation	Zn	Fe	Order New Part Numbers 4322 043 24011 (dia 25) 4322 043 24021 (dia 30) 4322 043 24031 (dia 35) 4322 043 24041 (dia 40) for RoHS compliant versions	NO	NA	NA	NA	NO	NO	NO	None	NO	50	anti-rust coating	O	O	O	X	O	O		
ALU BCC	Clamps for SL series 4322 043 24011 (dia 25) 4322 043 24021 (dia 30) 4322 043 24031 (dia 35) 4322 043 24041 (dia 40) RoHS compliant	BC	✓	✓	✓	RoHS compliant passivation	Zn	Fe	New Part Numbers 4322 043 24011 (dia 25) 4322 043 24021 (dia 30) 4322 043 24031 (dia 35) 4322 043 24041 (dia 40)	NO	NA	NA	NA	✓	✓	None	YES	NA			O	O	O	O	O	O		
ALU BCC	SMD Horizontal 2222 085../139../ NOT Lead Free Solderable	BC	✓	✓	✓	100% Sn matte	Cu6S n5 / Cu	Cu	Standard Part Number	NO	1	225/102	✓	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	7/12/2004
ALU BCC	SMD Vertical 2222 048../140../150../165../95yz and 2222 153 7wxyz sizes 1012 and 1014 Existing series; NOT Lead Free Solderable	BC	✓	✓	✓	100% Sn matte	Cu	Fe	Order 2222 048../140../150../165../97yz 2222 153 7wxyz size(1012/1014) for Lead Free Solderable	NO	1	225/102	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	7/12/2004	
ALU BCC	SMD Vertical 2222 048../140../150../165../97yz and 2222 153 7wxyz sizes 1012 and 1014 New series; Lead Free Solderable.	BC	✓	✓	✓	100% Sn matte	Cu	Fe	New Part Number 2222 048../140../150../165../97yz 2222 153 7wxyz size(1012/1014)	NO	1	240/102	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	7/12/2004	
ALU BCC	SMD Vertical 2222 136 95x0z Existing series; NOT Lead Free Solderable	BC	✓	✓	✓	100% Sn matte	Cu	Fe	Order 2222 136 97x0z for Lead Free Solderable	NO	1	225/102	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	7/12/2004	
ALU BCC	SMD Vertical 2222 136 97x0z New series; Lead Free Solderable.	BC	✓	✓	✓	100% Sn matte	Cu	Fe	New Part Number 2222 136 97x0z	NO	1	240/102	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	7/12/2004	
ALU BCC	SMD Vertical 2222 153 6wxyz size <= 1010 Existing series; NOT Lead free Solderable.	BC	✓	✓	✓	100% Sn matte	Cu	Fe	Order 2222 153 7wxyz size(<=1010) for Lead Free Solderable	NO	1	225/102	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	7/12/2004	
ALU BCC	SMD Vertical 2222 153 7wxyz size <= 0605 New series; Lead free Solderable.	BC	✓	✓	✓	100% Sn matte	Cu	Fe	New Part Number 2222 153 7wxyz size(<=1010)	NO	1	250/102	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	7/12/2004	
ALU BCC	SMD Vertical 2222 153 7wxyz sizes 0807,0810,1010 New series; Lead free Solderable.	BC	✓	✓	✓	100% Sn matte	Cu	Fe	New Part Number 2222 153 7wxyz size(<=1010)	NO	1	240/102	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	7/12/2004	
ALU BCC	SAL Axial 2222 123 wxyz Lead Containing	BC	NO	NO	NO	Sn/Pb	none	Cu	Order 2281 123 wxyz for Lead Free version	YES	NA	NA	✓	NO	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O	PCN-AC-002-2005 rev 4	10/ 31 / 2005
ALU BCC	SAL Axial 2281 123 wxyz Lead Free	BC	✓	✓	✓	Anode:100% Sn Hot-Dip Cathode: 100% Sn matte	Cu6S n5 / Cu	Cu	New Part Number Order 2281 123 wxyz	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	PCN-AC-002-2005 rev 4	10/ 31 / 2005	
ALU BCC	SAL Radial 2222 128 wxyz Lead Containing	BC	NO	NO	NO	Sn/Pb	none	Cu	Order 2281 128 wxyz for Lead Free version	NO	NA	NA	✓	NO	NO	NO	None	NO	50	solder coating + solder inside	X	O	O	O	O	O	PCN-AC-002-2005 rev 4	10/ 31 / 2005
ALU BCC	SAL Radial 2281 128 wxyz Lead Free	BC	✓	✓	✓	100% Sn matte	Cu6S n5 / Cu	Cu	New Part Number Order 2281 128 wxyz	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	PCN-AC-002-2005 rev 4	10/ 31 / 2005	
ALU BCC	SMD Vertical 2222 175 5wxyz	BC	✓	✓	✓	100% Sn matte	Cu6S n5 / Cu	Fe	Order 2222 175 7wxyz for Lead Free terminations / RoHS compliant (with exemption)	NO	1	260/102	✓	✓	✓	None	YES	NA		solder coating + solder inside	X	O	O	O	O	O	PCN-AC-002-2005 rev 4	10/ 31 / 2005
ALU BCC	EDLC 2222 196...	BC	✓	✓	✓	100% Sn matte	Cu	Fe	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	HPC-55-04010	7/12/2004	
ALU INDIA	Radial 2215 037../038../190/191/193.	BC	✓	✓	✓	100% Sn	Cu	Fe	Standard Part Number	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		LF since intro	
ALU INDIA	Radial 2215 044../045../135../136.	BC	✓	✓	✓	100% Sn	Cu	Fe	Standard Part Number	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		2002	
ALU INDIA	Snap-In 2215 157../159..	BC	✓	✓	✓	100% Sn	Cu	Fe	Standard Part Number	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		2002	
ALU SPRAGUE	Axial TE, TVA Lead Containing	SP	NO	NO	NO	Sn/Pb	none	Cu	NA	YES	NA	NA	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O		TBD	
ALU SPRAGUE	Axial TE, TVA, Lead Free	SP	NO	✓	✓	100% Sn matte	none	Cu	add "E3" (Note " sign !!)	YES	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		TBD	
ALU SPRAGUE	Axial 34D, 40D (NOT to be used for new designs !)	SP	NO	NO	NO	Sn/Pb	none	Cu	NA	NA	NA	NA	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O		TBD	
ALU SPRAGUE	Axial 30D, 39D, 53D, 500D, 600D, 601D, 604D, 610D, 630D Lead Containing	SP	NO	NO	NO	Sn/Pb	none	Cu	NA	YES	NA	NA	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O		TBD	
ALU SPRAGUE	Axial 30D, 39D, 53D, 500D, 600D, 601D, 604D, 610D, 630D Lead Free	SP	✓	✓	✓	100% Sn matte	none	Cu	add "E3"	YES	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		TBD	
ALU SPRAGUE	Radial 510D, 510DX, 511D, 672D, 678D Lead Containing	SP	NO	NO	NO	Sn/Pb	none	Cu	NA	YES	NA	NA	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O		TBD	
ALU SPRAGUE	Radial 510D, 510DX, 511D, 672D, 678D Lead Free	SP	✓	✓	✓	100% Sn matte	none	Cu	add "E3"	YES	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		TBD	
ALU SPRAGUE	Axial 516D Lead Free	SP	✓	✓	✓	100% Sn matte	Cu	Fe	add "E3"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		PCN-ACS-001-2005 Rev 0	4/28/2005
ALU SPRAGUE	Radial 515D, 517D Lead Free	SP	✓	✓	✓	100% Sn matte	Cu	Fe	add "E3"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		PCN-ACS-001-2005 Rev 0	4/28/2005
ALU SPRAGUE	Radial U673D, U674D, U676D, 757D	SP	✓	✓	✓	100% Sn matte	Cu	Fe	add "E3"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		TBD	
ALU SPRAGUE	SMD 518D OBSOLETE per April'06	SP	NO	NO	NO	Sn/Pb	Cu	Fe	NA	NA	1	225/102	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O		TBD	
ALU SPRAGUE	Snap-In 80D, 81D, 82D, 81DA, 82DA PNs with sleeve code 2 Lead Containing	SP	NO	NO	NO	100% Sn matte	Cu	Fe	NA	YES	NA	NA	✓	NO	NO	None	NO	50	solder coating	X	O	O	O	O	O		TBD	
ALU SPRAGUE	Snap-In 80D, 81D, 82D, 81DA, 82DA PNs with sleeve code 2 Lead Free	SP	✓	✓	✓	100% Sn matte	Cu	Fe	add "E3"	NO	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		TBD	
ALU SPRAGUE	Snap-In 80D, 81D, 82D, 81DA, 82DA PNs with sleeve code 5 Lead Containing	SP	NO	NO	NO	Sn/Pb	Cu	Fe	NA	NA	NA	NA	✓	NO	NO	None	NO	50	solder coating + resin end seal	X	O	O	O	O	O		TBD	

### Vishay Lead-Free Family Summary Sheet-Capacitor Components

Product Description			Pb Free "2nd-Level Interconnect" Status						Soldering				RoHS Status				China Pollution Act Information (SJ/T11363-2006)								PCN-Status			
Technology/ Product Line	Product Family	Vishay Division	Pb-free Qual. Complete and Report Available (QY)	Pb-free Samples available (QY)	Pb-free Mass production (QY)	Termination Finish	Underlayer	Lead or Base material	How to Order-Web (Lead Free)	Tin Lead (Sn/Pb) Products/Termination available after Conversion	Moisture Sensitivity Level	ROHS COMPLIANT-STD-260C compliant (100% Pb-free or Time Peak in sec./ Cycles)	Backward Compatibility	RoHS Qual. Complete and Report Available (QY)	RoHS Compl. Samples (QY)	RoHS Compl. Manufacturing (QY)	Exemptions Used	China RoHS Compliant (YES/NO) 符合 中国 RoHS (是否)	EUPP (YEARS) 环保使用期限 (年)	Location of Hazardous Substance(s) 有害物质物质所在部件	Pb 铅 X for C-MCV 0 for C-MCV 0,1 wt% (SJ/T11363-2006)	Hg 汞 X for C-MCV 0 for C-MCV 0,1 wt% (SJ/T11363-2006)	Cd 镉 X for C-MCV 0 for C-MCV 0,01 wt% (SJ/T11363-2006)	Cr(VI) 六价铬 X for C-MCV 0 for C-MCV 0,1 wt% (SJ/T11363-2006)	PBB 多溴联苯 X for C-MCV 0 for C-MCV 0,1 wt% (SJ/T11363-2006)	PBDE 多溴联苯醚 X for C-MCV 0 for C-MCV 0,1 wt% (SJ/T11363-2006)	Product Change Notification No. / Ref	Product Change Notification Date
ALU SPRAGUE	ST, 32D, 36D, 38DA, 36DE, 36DX, 36DY, U32D, U36D	SP	✓	✓	✓	NA	NA	NA	Standard Part Number	NO	NA	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	TBD	TBD
ALU BCC	Clamps for ST series 4586-97A (dia 34.9 mm) 4586-48 (dia 50.8 mm) 4586-1 (dia 63.5 mm) 4586-2 (dia 76.2 mm) NOT RoHS compliant	BC	✓	✓	✓	Cr(VI) passivation	Zn	Fe	Order New Part Numbers 1245860035 (dia 34.9 mm) 1245860036 (dia 50.8 mm) 1245860037 (dia 63.5 mm) 1245860038 (dia 76.2 mm) for RoHS compliant versions	NO	NA	NA	NA	NO	NO	NO	None	NO	50	anti-rust coating	O	O	O	X	O	O		
ALU BCC	Clamps for ST series 1245860035 (dia 34.9 mm) 1245860036 (dia 50.8 mm) 1245860037 (dia 63.5 mm) 1245860038 (dia 76.2 mm) RoHS compliant	BC	✓	✓	✓	RoHS compliant passivation	Zn	Fe	New Part Numbers 1245860035 (dia 34.9 mm) 1245860036 (dia 50.8 mm) 1245860037 (dia 63.5 mm) 1245860038 (dia 76.2 mm)	NO	NA	NA	NA	✓	✓	✓	None	YES	NA		O	O	O	O	O	O		
ALU SPRAGUE	OS-CON 94SA, 94SC, 94SH, 94SL, 94SS	SP	✓	✓	✓	100% Ag	Cu	Fe	Standard Part Number	NO	NA	NA	✓	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	NA	NA
ALU SPRAGUE	OS-CON 94SP	SP	✓	✓	✓	100% Ag	Cu	Cu	Standard Part Number	NO	NA	NA	✓	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	NA	NA
ALU SPRAGUE	SMD OS-CON 94SVP	SP	✓	✓	✓	100% Ag	Cu	Fe	Standard Part Number	NO	3	260/101	✓	✓	✓	✓	None	YES	NA		O	O	O	O	O	O	NA	NA
<b>CERAMIC</b>																												
DRALORIC Disc Capacitors Safety Standard Approved	VKO, VKP, W1X, WKO, WKP, WYO	DR	4/03	1/04	1/04	100% Sn	Ni	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	1/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	ceramic material	X	O	O	O	O	O	13/2004	10/18/2004
DRALORIC Disc capacitors HV Disc Class 1 Dielectric	HAU, HBU, HCU, HDU, HEU, HFU	DR	4/03	1/04	1/04	100% Sn	Ni	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	1/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	ceramic material	X	O	O	O	O	O	13/2004	10/18/2004
DRALORIC Disc capacitors DC & HV Disc Class 2 Dielectric	HSE, HSZ, HAZ, HAE, HAX, HBZ, HBE, HBX, HCZ, HCE, HCX, HDE, HEE, HFZ, HFE, HGZ, HHZ, HIZ	DR	4/03	1/04	1/04	100% Sn	Ni	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	1/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	ceramic material	X	O	O	O	O	O	13/2004	10/18/2004
DRALORIC Disc capacitors Impulse Class 2 Dielectric	HAK, HBK, HCK, HIK, IBC	DR	4/03	1/04	1/04	100% Sn	Ni	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	1/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	ceramic material	X	O	O	O	O	O	13/2004	10/18/2004
DRALORIC Disc capacitors Impulse Class 1 Dielectric	IEL....	DR	4/03	1/04	1/04	100% Sn	Ni	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	1/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	ceramic material	X	O	O	O	O	O	13/2004	10/18/2004
DRALORIC Disc capacitors DC Disc Class 1 Dielectric	RLA, RLC, RLK, RLP, RLU, RLV	DR	4/04	4/04	4/04	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Feedthru Class 1 Dielectric	DDLK 03..., DDM 03..., DZML 03..., DZML 03...	DR	4/04	4/04	4/04	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Feedthru Class 2 Dielectric	DMLK 03..., DML 03..., DZML 03..., DZML 03..., DVZL 04..., DZML 08...	DR	4/04	4/04	4/04	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Feedthru Class 1 Dielectric	DDMZ 0315	DR	4/04	4/04	4/04	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Feedthru Class 2 Dielectric	DDMZ 0315	DR	4/04	4/04	4/04	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Filter Class 2 Dielectric	DDNL 04..., DDM 04...	DR	4/04	4/04	4/04	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Filter Class 2 Dielectric	DDML 03..., DDMZ 03...	DR	4/04	4/04	4/04	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Tubular Class 1 Dielectric	RDPT..., RDQT..., RDLT..., MDLT...	DR	1/05	1/05	2/05	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Tubular Class 2 Dielectric	RDPT..., RDQT..., RDLT..., MDLT...	DR	1/05	1/05	2/05	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Tubular Class 1 Dielectric	RDLL..., RDQL..., MDLL...	DR	1/05	1/05	2/05	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
DRALORIC SL Capacitors Tubular Class 2 Dielectric	RDLL..., RDQL..., MDLL...	DR	1/05	1/05	2/05	100% Sn	None	Cu	add'R'	NO	NA	260/102	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	1/2005	4/4/2005
CERAMIC BCC MLC Leaded	AXIAL KAP A...	BC	4/03	✓	✓	100% Sn	None	Cu/Fe	Standard Part number	NO	NA	260/102	✓	✓	✓	✓	Lead content in Ceramic material RoHS Annex 7c	YES	NA		O	O	O	O	O	O	02/2002	
CERAMIC BCC MLC Leaded	MONO KAP K...	BC	4/03	✓	✓	100% Sn	None	Cu/Fe	Standard Part number	NO	NA	260/102	✓	✓	✓	✓	Lead content in Ceramic material RoHS Annex 7c	NO	50	ceramic material/COG	X	O	O	O	O	O	02/2002	
BCC RFI new Series	VY1..., VY2...	BC	✓	✓	✓	100% Sn	None	Cu	Standard Part number	NO	NA	260/102	✓	✓	✓	✓	Lead content in Ceramic material RoHS Annex 7c	NO	50	Ceramic Material	X	O	O	O	O	O	NA	New Product

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Product Description			Pb Free "2nd-Level Interconnect" Status						Soldering				RoHS Status				China Pollution Act Information (SJ/T11363-2006)								PCN-Status			
Technology/ Product Line	Product Family	Vishay Division	Pb-free Qual. Complete and Report Available (QTY)	Pb-free Samples available (QTY)	Pb-free Mass production (QTY)	Termination Finish	Underlayer	Lead or Base material	How to Order-Web (Lead Free)	Tin Lead (Sn/Pb) Products/Termination available after Conversion	Moisture Sensitivity Level	ROHS-Compliant (SMD-200C compliant) (Lead Free or Time Free) in sec / Cycles	Backward Compatibility	RoHS Qual. Complete and Report Available (QTY)	RoHS Compl. Samples (QTY)	RoHS-Compl. Mass production (QTY)	Exemptions Used	China RoHS Compliant (YES/NO) 符合 RoHS (是否)	EUPP (YEARS) 环保使用期限 (年)	Location of Hazardous Substance(s) 有害物质物质所在部件	Pb 含量 X for Co-McV 0,1 wt% (SJ/T11363-2006)	Hg 含量 X for Co-McV 0 for Co-McV 0,1 wt% (SJ/T11363-2006)	Cd 含量 X for Co-McV 0 for Co-McV 0,01 wt% (SJ/T11363-2006)	Cr(VI) 六价铬 X for Co-McV 0 for Co-McV 0,1 wt% (SJ/T11363-2006)	PBB 多溴联苯 X for Co-McV 0,1 wt% (SJ/T11363-2006)	PBDE 多溴二苯醚 X for Co-McV 0,1 wt% (SJ/T11363-2006)	Product Change Notification No. / Ref	Product Change Notification Date
BCC Disc-Capacitors Gen. Purpose Class 1	Cleartext Code D...Code S...	BC	4/03	2/04	2/04	100% Sn	None	Cu	add or replace 16th digit by: "R"	NO	NA	260/10/2	✓	1/05	1/05	1/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Ceramic Material	X	O	O	O	O	O	17/2004	10/8/2004
BCC Disc-Capacitors Gen. Purpose Class 2	Cleartext Code D.../ Code S.../Code H...	BC	4/03	2/04	2/04	100% Sn	None	Cu	add or replace 16th digit by: "R"	NO	NA	260/10/2	✓	1/05	1/05	1/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Ceramic Material	X	O	O	O	O	O	17/2004	10/8/2004
BCC Disc Capacitors Low loss Class 2	Cleartext Code F...	BC	4/03	2/04	2/04	100% Sn	None	Cu	add or replace 16th digit by: "R"	NO	NA	260/10/2	✓	1/05	1/05	1/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Ceramic Material	X	O	O	O	O	O	17/2004	10/8/2004
BCC Disc Capacitors Safety Class X1/Y2	DN-Type Cleartext Code S. ....	BC	4/03	2/04	2/04	100% Sn	None	Cu	add or replace 16th digit by: "R"	NO	NA	260/10/2	✓	1/05	1/05	1/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Ceramic Material	X	O	O	O	O	O	17/2004	10/8/2004
BCC GAP KAP	Cleartext Code S...	BC	4/03	2/04	2/04	100% Sn	None	Cu	add or replace 16th digit by: "R"	NO	NA	260/10/2	✓	3/05	3/05	3/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Ceramic Material	X	O	O	O	O	O	17/2004	10/8/2004
CERAMITE Disc Capacitors Lower Voltage Class 1	GA..., HK..., HM..., TC..., TG..., TS...	CR	4/03	1/04	3/04	100% Sn	Ni	Cu	if Parts Number starts with 56... 4th digit: "C" -> "R"	NO	NA	260/10/2	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	15/2004	10/18/2004
CERAMITE Disc Capacitors Lower Voltage Class 2	GA..., HK..., HM..., TC..., TG..., TS...	CR	4/03	1/04	3/04	100% Sn	Ni	Cu	if Parts Number starts with 56... 4th digit: "C" -> "R"	NO	NA	260/10/2	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	15/2004	10/18/2004
CERAMITE Disc Capacitors AC Line Rated	440L, 30LV, 30LVS, 25Y, 125L, 20VL	CR	4/03	1/04	3/04	100% Sn	Ni	Cu	add "R"	NO	NA	260/10/2	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	15/2004	10/18/2004
CERAMITE Disc Capacitors Low DF Class 2	1DFO..., 2DFO..., 3DFO...	CR	4/03	1/04	3/04	100% Sn	Ni	Cu	if Parts Number starts with 56... 4th digit: "C" -> "R"	NO	NA	260/10/2	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	15/2004	10/18/2004
CERAMITE Disc Capacitors High Voltage Class 1 & 2	20GA..., 20TS..., 30GA..., 30TS..., 60GA...	CR	4/03	1/04	3/04	100% Sn	Ni	Cu	if Parts Number starts with 56... 4th digit: "C" -> "R"	NO	NA	260/10/2	✓	1/05	1/05	2/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	15/2004	10/18/2004
CERAMITE Disc Capacitors High Voltage Class 2	Dual Disc, higher Capacitance values	CR	4/04	4/04	4/04	100% Sn	Ni	Cu	if Parts Number starts with 56... 4th digit: "C" -> "R"	NO	NA	260/10/2	✓	3/05	3/05	3/05	Lead content in Ceramic material RoHS Annex 7c	NO	50	Electrode Material	X	O	O	O	O	O	15/2004	10/18/2004
DRALORIC HF Power Capacitors	Plate Capacitors	DR	✓	✓	✓	brass/Cu/Ag	NA	brass	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Electrode Material/soldering	X	O	O	O	O	O	NA	NA
DRALORIC HF Power Capacitors	Barrel Style Capacitors	DR	✓	✓	✓	brass/Cu/Ag	NA	brass	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Electrode Material/soldering	X	O	O	O	O	O	NA	NA
DRALORIC HF Power Capacitors	Feed-Through Capacitors	DR	✓	✓	✓	brass/Cu/Ag	NA	brass	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Electrode Material/soldering	X	O	O	O	O	O	NA	NA
DRALORIC HF Power Capacitors	Tubular Capacitors	DR	✓	✓	✓	brass/Cu/Ag	NA	brass	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Electrode Material/soldering	X	O	O	O	O	O	NA	NA
DRALORIC HF Power Capacitors	Pot Capacitors	DR	✓	✓	✓	brass/Cu/Ag	NA	brass	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Electrode Material/soldering	X	O	O	O	O	O	NA	NA
DRALORIC HF Power Capacitors	Watercooled Power RF-Capacitors	DR	✓	✓	✓	brass/Cu/Ag	NA	brass	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Electrode Material/soldering	X	O	O	O	O	O	NA	NA
DRALORIC HV Capacitors	HV Disc, Ring-styled	DR	✓	✓	✓	brass/Cu/Ag	NA	brass	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Electrode	X	O	O	O	O	O	NA	NA
DRALORIC HV Capacitors	Capacitor Stacks, Cascades	DR	NA	NA	NA	100% Sn	None	Cu	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Ceramic/Electrode/Solder	X	O	O	O	O	O	NA	NA
CERAMITE Radial leaded HV Capacitors	75GA.....100GA.....150 GA...	CR	2/05	2/05	1/06	100% Sn	Ni	Cu	replace 615C... by 615R.....	YES	NA	260/10/2	✓	✓	✓	✓	RoHS Article 3	NO	50	Electrode	X	O	O	O	O	O	15/2004	10/18/2004
CERAMITE Axial leaded HV Capacitors	660C series	CR	2/06	4/05	2/06	100% Sn	Ni	Cu/Fe	add ZZ to get leadfree wires/ 660R... for total RoHS	YES	NA	260/10/2	✓	✓	✓	✓	RoHS Article 3	NO	50	Electrode	X	O	O	O	O	O	NA	NA
CERAMITE Heavy Duty HV Capacitors	715C series	CR	✓	✓	✓	brass/Cu/Ag	NA	brass	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Electrode	X	O	O	O	O	O	NA	NA
CERAMITE RF Duty Capacitors	5F... 7F... Series	CR	✓	✓	✓	brass/Cu/Ag	NA	brass	Standard Part number	NA	NA	NA	✓	NA	✓	✓	RoHS Article 3	NO	50	Electrode	X	O	O	O	O	O	NA	NA
Film																												
DC capacitors	2222 370	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	37782
DC capacitors	2222 370 91	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	37782
DC capacitors	2222 371	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	37782
DC capacitors	2222 372	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	37782
DC capacitors	2222 373	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	37782
DC capacitors	2222 470	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	37782
DC capacitors	2222 471 9	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	37782
DC capacitors	2222 365/ 366 / 367	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	6/10/2003
DC capacitors	2222 368	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	6/10/2003
DC capacitors	2222 369	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	6/10/2003
DC capacitors	2222 465	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	✓	NA	YES	NA		O	O	O	O	O	O	3005	6/10/2003

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Product Description		Pb Free "2nd-Level Interconnect" Status						Soldering				RoHS Status				China Pollution Act Information (SJ/T11363-2006)								PCN-Status					
Technology/ Product Line	Product Family	Vishay Division	Pb-free Qual. Complete and Report Available (QY)	Pb-free Samples available (QY)	Pb-free Mass production (QY)	Termination Finish	Underlayer	Lead or Base material	How to Order-Web (Lead Free)	Tin Lead (Sn/Pb) Products/Termination available after Conversion	Moisture Sensitivity Level	PCUR/ECIA-STD-020C compliant (1 sec./ Cycles)	Backward Compatibility	RoHS Qual. Complete and Report Available (QY)	RoHS Compl. Samples (QY)	RoHS Compl. Manufacturing (QY)	Exemptions Used	China RoHS Compliant (YES/NO) 符合 RoHS (是否)	EUPP (YEARS) 环保使用期限 (年)	Location of Hazardous Substance(s) 有毒有害物质所在部件	Pb 含量 X for C-MCV 0 for C-MCV 0,1 wt% (SJ/T11363-2006)	Hg 含量 X for C-MCV 0 for C-MCV 0,1 wt% (SJ/T11363-2006)	Cd 含量 X for C-MCV 0 for C-MCV 0,01 wt% (SJ/T11363-2006)	Cr(VI) 含量 X for C-MCV 0 for C-MCV 0,1 wt% (SJ/T11363-2006)	PBB 多溴联苯 X for C-MCV 0,1 wt% (SJ/T11363-2006)	PBDE 多溴二苯醚 X for C-MCV 0,1 wt% (SJ/T11363-2006)	Product Change Notification No. / Ref	Product Change Notification Date	
DC capacitors	2222 466	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o				
DC capacitors	2222 467 / 469	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
DC capacitors	2222 468	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
DC capacitors	2222 303/ 304	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
DC capacitors	2222 347	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		4011	12/22/2004	
AC /pulse capacitors	2222 380	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 377	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 379 10mm pitch	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 379	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 378	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 376	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 375 10mm pitch	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 375 > 10mm pitch	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 374 4 pitch 7,5 / 10 / 15 mm	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 374 4 22,5 / 27,5 mm	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 374 5 pitch 7.5 / 10 mm	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 374 6	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 479 10mm pitch	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 479 >10mm pitch	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 383	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
AC /pulse capacitors	2222 483	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
RFI	2222 335 59	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
RFI	2222 335 5	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
RFI	2222 336 10mm pitch	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
RFI	2222 336 >10 mm pitch	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
RFI	2222 338 2 <= 10mm pitch	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
RFI	2222 338 2 > 10mm pitch	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
RFI	2222 338 4 < 37,5mm	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
RFI	2222 338 4 pitch 37.5 and 55 mm	BC	ü	ü	ü	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	ü	ü	ü	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003
RFI	2222 338 6	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	37782	
RFI	2222 338 1	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	37782	
RFI	2222 339	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		NA	NA	
RFI	2222 435	BC	NA	NA	NA	95/5 Sn/Pb	None	Cu	NA	NA	NA	NA	✓	NA	NA	NA	NA	NA		o	o	o	o	o	o		NA	NA	
precision	2222 416 / 417 / 418/419/420 5mm	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
precision	2222 416 / 417 / 418/419/420 10mm	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
precision	2222 416 / 417 / 418/419/420 15mm	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
precision	2222 422	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
precision	2222 460/461/462/463/464	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
IPD	2222 401	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	6/10/2003	
IPD	2222 405	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		3005	37782	
starter	2222 311	BC	✓	✓	✓	>99.9% Sn Matte	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o				
Mylar inductive type	2252 901 / 903	BC	✓	✓	✓	>99.9% Sn	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o				
varicap / trimmer	2215 807	BC	✓	✓	NN	Sn60Pb40	None	Fe or Brass or Bronze		NO	NA	NA	✓	✓	✓	NN	NA	NO	50	Termination	X	o	o	o	o	o			
varicap / trimmer	2215 808	BC	✓	✓	✓	>99.9% Sn	None	Fe or Brass or Bronze	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	Pb in brass	NO	50	Termination	X	o	o	o	o	o	o			
Trimmer	2222 808 / 809	BC	✓	✓	✓	>99.9% Sn or Ag	None	Ni or Cu Brass and bronze	2281 808/809 or BFC2 808/809	NO	NA	NA	✓	✓	✓	Pb in brass	NO	50	Termination	X	o	o	o	o	o	o			
fan regulator	2215 315	BC	✓	✓	✓	>99.9% Sn	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA		o	o	o	o	o	o		0301	37879	

### Vishay Lead-Free Family Summary Sheet-Capacitor Components

Product Description		Pb Free "2nd-Level Interconnect" Status							Soldering				RoHS Status				China Pollution Act Information (SJ/T11363-2006)								PCN-Status				
Technology/ Product Line	Product Family	Vishay Division	Pb-free Qual. Complete and Report Available (QY)	Pb-free Samples available (QY)	Pb-free Mass production (QY)	Termination Finish	Underlayer	Lead or Base material	How to Order-Web (Lead Free)	Tin Lead (Sn/Pb) Products/Termination available after Conversion	Moisture Sensitivity Level	PCN/ESD/STD-020C compliant (Lead Free or Time Free) in sec./Cycles	Backward Compatibility	RoHS Qual. Complete and Report Available (QY)	RoHS Compl. Samples (QY)	RoHS Compl. Manufacturing (QY)	Exemptions Used	China RoHS Compliant (YES/NO) 符合 RoHS (是否)	EUPP (YEARS) 环保使用期限 (年)	Location of Hazardous Substance(s) 有害物质物质所在部件	Pb 铅	Hg 汞	Cd 镉	Cr(VI) 六价铬	PBB 多溴联苯	PBDE 多溴二苯醚	Product Change Notification No. / Ref	Product Change Notification Date	
CDI	2215 314 , 313	BC	✓	✓	✓	>99.9% Sn	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										0301	9/15/2003
others	2215 366,367, 368, 369, 347, 361	BC	✓	✓	✓	>99.9% Sn	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										0301	3/7/89
others	2215 360, 2215 312	BC	✓	✓	✓	>99.9% Sn	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA											
	2215 357	BC	✓	✓	✓	>99.9% Sn	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										0301	3/7/89
Film ERO radial DC	1817 standard	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 37	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA											
Film ERO radial DC	1818	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 27	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA											
Film ERO radial DC	1820	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA											
Film ERO radial DC	1820-615/25x-1	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 29/F30	Standard Part Number-Remark"Lead Free"	NO	NA	260/5/1	✓	✓	✓	NA	YES	NA			X								
Film ERO radial DC	1822 (pcm > 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1822 (pcm <= 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu Ni 18 Zn 20 , F41	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1830	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu Ni 18 Zn 20 , F41	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA											
Film ERO radial DC	1836	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1840 (pcm <= 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu Ni 18 Zn 20 , F41 (pcm5), Cu F27 (pcm 7,5/10)	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1840 (pcm > 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1841 (pcm <= 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1841 (pcm > 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1844	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1846	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1850	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu Ni 18 Zn 20 , F41	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA											
Film ERO radial DC	1858	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu Ni 18 Zn 20 , F41	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1862 (pcm <= 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Film ERO radial DC	1862 (pcm > 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
RFI	1710 pcm 10	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 27	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
RFI	1710 (pcm >10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
RFI	1712	RO	EOL	EOL	EOL	60/40 Sn/Pb	None	Cu	NA	NA	NA	NA	✓	✓	✓	NA	NO	50	Termination	X									
RFI	1722	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
RFI	1724	RO	EOL	EOL	EOL	60/40 Sn/Pb	None	Cu	NA	NA	NA	NA	✓	✓	✓	NA	NO	50	Termination	X									
RFI	1772	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
RFI	1774	RO	✓	✓	✓	100% Sn	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA											
RFI	1778 (pcm 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 27	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
RFI	1778 (pcm > 10)	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu F 21	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
RFI	1779	RO	✓	✓	✓	100% Sn	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA											
RFI	1740	RO	✓	✓	✓	100% Sn	None	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA											
Radial stacked	MKT 1826	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
Radial stacked - SMD	MKT 1824	RO	✓	✓	✓	>99.9% Sn Matte	None	Cu/Ni18Zn 27	Standard Part Number-Remark"Lead Free"	NO	5a	260/5/1	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
FILM ERO Axial DC	MKT 1813 Polyester wrapped	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
FILM ERO Axial DC	MKT 1813 Polycarbonate wrapped	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
FILM ERO Axial DC	MKP 1839 Polyester wrapped	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu or Cu/NiZn or steel clad	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
FILM ERO Axial DC	MKP 1839 Polycarbonate wrapped	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
FILM ERO Axial DC	MKC 1860 Polyester wrapped	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
FILM ERO Axial DC	MKC 1860 Polycarbonate wrapped	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03
FILM ERO Axial DC	MKP 1845 Polycarbonate wrapped	RO	✓	✓	✓	>99.9% Sn Matte	Ni	Cu	Standard Part Number-Remark"Lead Free"	NO	NA	NA	✓	✓	✓	NA	YES	NA										VS01-03	24.03.03



### Vishay Lead-Free Family Summary Sheet-Capacitor Components

Product Description		Pb Free "2nd-Level Interconnect" Status							Soldering				RoHS Status				China Pollution Act Information (SJ/T11363-2006)								PCN-Status			
Technology/ Product Line	Product Family	Vishay Division	Pb-free Qual. Complete and Report Available (QY)	Pb-free Samples available (QY)	Pb-free Mass-production (QY)	Termination Finish	Underlayer	Lead or Base material	How to Order-Web (Lead Free)	Tin Lead (Sn/Pb) Products/Termination available after Conversion	Moisture Sensitivity Level	PCU/ERC4-STD-602C compliant (100% Pb in Cr Time Peak in sec / Cycles)	Backward Compatibility	RoHS Qual. Complete and Report Available (QY)	RoHS Compl. Samples (QY)	RoHS Compl. Mass-production (QY)	Exemptions Used	China RoHS Compliant (YES/NO) 符合 中國 RoHS (是否)	EUPP (YEARS) 環保使用期 (年)	Location of Hazardous Substance(s) 有毒有害物質 所在部件	Pb 含量 X for C<MCV O for C=MCV 0,1 wt% (SJ/T11363-2006)	Hg 含量 X for C<MCV O for C=MCV 0,1 wt% (SJ/T11363-2006)	Cd 含量 X for C<MCV O for C=MCV 0,01 wt% (SJ/T11363-2006)	Cr(VI) 六价铬 X for C<MCV O for C=MCV 0,1 wt% (SJ/T11363-2006)	PBB 多環芳烴 X for C<MCV O for C=MCV 0,1 wt% (SJ/T11363-2006)	PBDE 多環二噁英 X for C<MCV O for C=MCV 0,1 wt% (SJ/T11363-2006)	Product Change Notification No. / Year	Product Change Notification Date
Semiconductor process capacitor	HPC	SP	4/04	4/04	4/04	Sn95.5/Ag4/Cu0.5	None	Component layers	Standard Part number	YES	1	✓	✓	4/04	4/04	4/04	None	YES	NA		O	O	O	O	O	O	NA	NA
Leaded	173D, 199D, 299D, 489D, 499D, 790D	SP	2/06	1/06	2/06	100% Sn	None	Steel	add *-E3*	YES	NA	NA	✓	2/06	1/06	2/06	None	YES	NA		O	O	O	O	O	O	NA	NA
Hermetics Commercial	150D, 152D, 550D, CECC (CTS1, CTS13, CTS32, 749DX)	SP	4/06	4/06	1/07	100% Sn	None	Ni	add *-E3*	YES	NA	NA	✓	4/06	4/06	1/07	HIGH MELTING SOLDER	NO	50	HIGH MELTING SOLDER	X	O	O	O	O	O	NA	NA
Hermetics Military	M39003 series	SP	NA	NA	NA	60/40 Sn/Pb	None	Ni	NA	NA	NA	NA	✓	NA	NA	NA	Military product	NO	50	TERMINATION & SOLDER FOR HIGH TEMP	X	O	O	O	O	O	NA	NA
Wets Commercial	108D, 135D, 138D, CECC (769D, 735D, 735DE, CT79, 738D, CT9), ST, MTP, XTH - Ni lead	SP	2/06	2/06	2/06	100% Sn	None	Ni or Cu	add *-E3*	YES	NA	NA	✓	2/06	2/06	2/06	None	YES	NA		O	O	O	O	O	O	NA	NA
Wets Military	M39006 series	SP	NA	NA	NA	60/40 Sn/Pb	None	Ni or Cu	NA	YES	NA	NA	✓	NA	NA	NA	Military product	NO	50	TERMINATION	X	O	O	O	O	O	NA	NA

Notes:  
 ● Please contact your local Vishay Sales Office  
 ✓ indicates that the item is complete or compliant. If product is complete/compliant less than a year the actual date is shown.  
 NA indicates that the item is not applicable (i.e. not converting to Pb-Free)  
 BC=Vishay Bcomponents, CR=Vishay Ceramite, DR=Vishay Draloric, ES=Vishay ESTA, RO=Vishay Roderstein, SP=Vishay Sprague, VT=Vishay Vitramon  
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 ○ : 表示该有毒有害物在部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。 indicate all homogeneous materials' hazardous substances content are below the SJ/T11363-2006 MCV limit  
 × : 表示该有毒有害物至少在部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。 Indicates that the hazardous substance content contained in any one of the homogeneous materials of the part exceeded the MCV limits specified in the Standard SJ/T 11363-2006  
**This Document is subjected to change without notice**