

AC RoHS Compliance Worksheet

Series or Type	Description or Photo	RoHS Compliance Identification on Device	Termination Finish	Pb Free	RoHS Compliant	Compliant Part Number	Package Marking	Date Compliant	Moisture Sensitivity Level (IPC/JEDEC J-STD-020C)	Soldering Conditions (Temp/Time)	Notes
Motor Start Capacitors											
ETW	Non Polarized Aluminum Electrolytic Capacitors	N/A	TIN PLATED	<1000 PPM	Y	NO CHANGE	PER JESD97	DISCONTINUED LINE	N/A	N/A	Discontinued Line
PSU	Non Polarized Aluminum Electrolytic Capacitors	NONE	TIN PLATED	<1000 PPM	Y	NO CHANGE	PER JESD97	JAN 1,2003	N/A	N/A	
PSU with SnPb Coated Lead Wires and/or Resistors	Non Polarized Aluminum Electrolytic Capacitors	NONE	TIN PLATED	<1000 PPM	Y	NO CHANGE	PER JESD97	July 1, 2006	N/A	N/A	
High Voltage DC/AC Capacitors											
OTB	DC/AC Dual Rated Capacitors	-F ON PART NUMBER	TIN COPPER	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SCR	SCR Commutating Capacitors for High Current	-F ON PART NUMBER	TIN COPPER	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SNU	Snubber Capacitors for Light Duty SCR Commutation	-F ON PART NUMBER	TIN COPPER	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
T-TYPES	High Voltage DC Filter Capacitors	-F ON PART NUMBER	TIN COPPER	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
HV	High Voltage AC Filter Capacitors	NONE	TIN PLATED		Y	NO CHANGE	PER JESD97	July 1, 2010	N/A	N/A	
Motor Run and Power Supply Capacitors											
Type SF											
SFA	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SFB	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SFC	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SFD	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SFP	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SFS	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SFT	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
Power Factor & Power Conversion Capacitors											
ACF	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	October 29, 2008	N/A	N/A	
PFC	AC Metallized Polypropylene Capacitors	NONE	TIN PLATED	<1000 PPM	Y	NO CHANGE	PER JESD97	July 1, 2010	N/A	N/A	
PC	AC Metallized Polypropylene Capacitors	NONE	TIN PLATED	<1000 PPM	Y	NO CHANGE	PER JESD97	July 1, 2010	N/A	N/A	
Type SM											
KASM	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
KBSM	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
KKSM	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
KTSM	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SMP	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SMS	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
SMT	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
Type MPF											
21F	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
23F	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
24F	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
32F	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
37F	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
38F	AC Metallized Polypropylene Capacitors	-F ON PART NUMBER	TIN PLATED	<1000 PPM	Y	-F	PER JESD97	July 1, 2006	N/A	N/A	
Type MSF											
32K	AC Metallized Polypropylene Capacitors	N/A	TIN PLATED	N	N	N/A	N/A	DISCONTINUED LINE	N/A	N/A	Discontinued Line
37K	AC Metallized Polypropylene Capacitors	N/A	TIN PLATED	N	N	N/A	N/A	DISCONTINUED LINE	N/A	N/A	Discontinued Line
38K	AC Metallized Polypropylene Capacitors	N/A	TIN PLATED	N	N	N/A	N/A	DISCONTINUED LINE	N/A	N/A	Discontinued Line
Miscellaneous Types											
954	AC Metallized Polypropylene Capacitors	N	TIN PLATED	N	N	N/A	N/A	N/A	N/A	N/A	Discontinued Line
PDA,PDB,PDC	AC Metallized Polypropylene Capacitors	N/A	TIN PLATED	N	N	N/A	N/A	DISCONTINUED LINE	N/A	N/A	Discontinued Line
Add DL series - DL A,DL B,DL C,DL D											
Capacitor Accessories											
30393	Wrap Around Capacitor Mounting Bracket	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
30434	End Mount Footed Bracket	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
31762	Side Mount Footed Bracket	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	

32107	Footed Mounting Bracket	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
32108	Insulating Terminal Boots	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
32192	Grounding Lug	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
44603	Insulating Terminal Boots	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
ACR	Motor Start & Motor Run Resistor Kds	N	N/A		N	ADD -F	PER JESD97	July 1, 2006	N/A	N/A	
HB	Horizontal Mounting Bracket for Motor Start Capacitors	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
OB	Wrap Around Capacitor Bracket	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
OC	Insulating Terminal Boots	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
PDUMS	Mounting Hardware	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
PL	End Caps for Motor Start Capacitors	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
RB	Wrap Around Capacitor Bracket	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
TH	Horizontal Mounting Bracket	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	
VR	Vertical Mounting Clamp	N	N/A	<1000 PPM	Y	NO CHANGE	PER JESD97	March 1, 2005	N/A	N/A	

Revision Date: 05-2-12

provided on the enclosed is correct as of the date indicated on the document. Since some of the

Controls and Switches RoHS Compliance Worksheet

Series or Type	Description or Photo	RoHS Compliance Identification on Device	Termination Finish	PB Free	RoHS Compliant	Compliant Part Number	Package Marking	Date Compliant	Moisture Sensitivity Level (IPC/JEDEC J-STD-020C)	Soldering Conditions (Temp/Time)	Notes
Controls/Switches											
MR	3 Watt (Wirewound Controls)	N/A	N/A	<1000 PPM	Y	No Change	PER JESD97	at release	N/A	N/A	Discontinued Series
R	3 Watt (Bushing Mount)	N/A	N/A	<1000 PPM	Y	No Change	PER JESD97	at release	N/A	N/A	Discontinued Series
M	4 Watt (Bushing Mount)	N/A	N/A	<1000 PPM	Y	No Change	PER JESD97	at release	N/A	N/A	
VW & VWS	5 Watt (Bushing Mount)	N/A	N/A	<1000 PPM	Y	No Change	PER JESD97	at release	N/A	N/A	
LW	5 Watt (Bushing Mount)	N/A	N/A	<1000 PPM	Y	No Change	PER JESD97	at release	N/A	N/A	
MG	12.5 Watt (Bushing Mount)	N/A	N/A	<1000 PPM	Y	No Change	PER JESD97	at release	N/A	N/A	
L, MGL, LL, MGLL, T, RT	Audio Attenuators	N/A	N/A	<1000 PPM	Y	No Change	PER JESD97	at release	N/A	N/A	Discontinued Series
RR	Stereo Level Control	N/A	N/A	<1000 PPM	Y	No Change	PER JESD97	at release	N/A	N/A	Discontinued Series
3000 Series	Rotary Switches	N/A	N/A	<1000 PPM	Y	No Change	PER JESD97	at release	N/A	N/A	

Revision Date: 2/24/10

To the best of our knowledge, the information

Cornell Aluminum Electrolytics RoHS Compliance Worksheet

Series or Type	Description or Photo	RoHS Compliance Identification on Device	Termination Finish	PB Free	RoHS Compliant	Compliant Part Number	Package Marking	Date Compliant	Moisture Sensitivity Level (IPC/JEDEC J-STD-020C)	Soldering Conditions (Temp/Time)	Notes
DCMC/DCMX	SCREW TERMINAL ALUMINUM ELECTROLYTIC CAPACITORS	N	N/A	<1000 PPM	Y	No Change	RoHS Compliance Marking on Unit Container (box label)	4/1/2005	N/A	N/A	
500C/500X	SCREW TERMINAL ALUMINUM ELECTROLYTIC CAPACITORS	N	N/A	<1000 PPM	Y	No Change	RoHS Compliance Marking on Unit Container (box label)	4/1/2005	N/A	N/A	
520C	SCREW TERMINAL ALUMINUM ELECTROLYTIC CAPACITORS	N	N/A	<1000 PPM	Y	No Change	RoHS Compliance Marking on Unit Container (box label)	4/1/2005	N/A	N/A	
550C	SCREW TERMINAL ALUMINUM ELECTROLYTIC CAPACITORS	N	N/A	<1000 PPM	Y	No Change	RoHS Compliance Marking on Unit Container (box label)	4/1/2005	N/A	N/A	
101C	SCREW TERMINAL ALUMINUM ELECTROLYTIC CAPACITORS	N	N/A	<1000 PPM	Y	No Change	RoHS Compliance Marking on Unit Container (box label)	4/1/2005	N/A	N/A	
139R	SCREW TERMINAL ALUMINUM ELECTROLYTIC CAPACITORS	N	N/A	<1000 PPM	Y	No Change	RoHS Compliance Marking on Unit Container (box label)	4/1/2005	N/A	N/A	
125	SCREW TERMINAL ALUMINUM ELECTROLYTIC CAPACITORS	N	N/A	<1000 PPM	Y	No Change	RoHS Compliance Marking on Unit Container (box label)	4/1/2005	N/A	N/A	
3186/3188/3110/3120/3191/3192/3199/3198	SCREW TERMINAL ALUMINUM ELECTROLYTIC CAPACITORS	N	N/A	<1000 PPM	Y	No Change	RoHS Compliance Marking on Unit Container (box label)	4/1/2005	N/A	N/A	
380L/381L/381R/381EL	Snap-in Electrolytic capacitors	N	Tin/Copper/Steel	<1000 PPM	Y	No Change	Pb Free Marking on Unit Container (box label)	1/1/2005	N/A	260C/10s	
380L/381LX	Snap-in Electrolytic capacitors (2-pin)	N	Tin/Copper/Steel	<1000 PPM	Y	No Change	Pb Free Marking on Unit Container (box label)	9/1/2005	N/A	260C/10s	
382L/383LX	Snap-in Electrolytic capacitors (more than 2 pins)	N	Tin/Copper/Steel	<1000 PPM	Y	No Change	Pb Free Marking on Unit Container (box label)	1/1/2006	N/A	260C/10s	
066, 066R, 057, M39018/03	Large axials	N	Copper/tin-lead solder	N	N	N/A	No change	No Plans for compliance	N/A	260C/10s	
300/301/301A/361R/331/325/326/350/351 (0.750" DIA. AND LARGER)	Radials	N	Copper/tin solder	N	N	N/A	No change	N/A	N/A	260C/10s	
300/301/301A/361R (18MM DIA. AND SMALLER)	Radials	N	Copper/tin solder	N	N	N/A	No change	N/A	N/A	260C/10s	
MLP/MLS	Flatpacks	N	Copper/tin-lead solder	N	N	N/A	No change	All	N/A	260C/10s	
4CMC, 400C, 420C, 450C, 4CMX, 400X, 450	PC Mount	N	Tinned copper clad	<1000 PPM	Y	No Change	No change	1/1/2006	N/A	260C/10s	
380/381, 380X/381X	Snap-in Electrolytic capacitors (2-pin)	N	Copper/tin solder	<1000 PPM	Y	No Change	Pb Free Marking on Unit Container (box label)	4/1/2006	N/A	260C/10s	

GE, GH, GM, GP, GR, GS, GT	GENERAL PURPOSE	N	Sr/Cu	<1000 PPM	Y	No Change	PER JESD97	12/21/2004	N/A	N/A	RoHS Compliant: 12/21/2004 and beyond
CE, CM, CP, CR, CT	EIA CLASS 1	N	Sr/Cu	<1000 PPM	Y	No Change	PER JESD97	12/21/2004	N/A	N/A	RoHS Compliant: 12/21/2004 and beyond
SM, SP	EIA CLASS 2	N	Sr/Cu	<1000 PPM	Y	No Change	PER JESD97	12/21/2004	N/A	N/A	RoHS Compliant: 12/21/2004 and beyond
HS, HT	EIA CLASS 2 (HV)	N	Sr/Cu	<1000 PPM	Y	No Change	PER JESD97	12/21/2004	N/A	N/A	RoHS Compliant: 12/21/2004 and beyond
LG, LE	EIA CLASS 3	N	Sr/Cu	<1000 PPM	Y	No Change	PER JESD97	12/21/2004	N/A	N/A	RoHS Compliant: 12/21/2004 and beyond
UN	X TYPE	N	Sr/Cu	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Discontinued Series
LXY	X1-Y1 TYPE	N	Sr/Cu	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Discontinued Series

Revision Date: 2/24/10
 To the best of our knowledge, the information

Films RoHS Compliance Worksheet

Series or Type	Description or Photo	RoHS compliance Identification on Device	Termination Finish	Pb Free	RoHS Compliant	Compliant Part Number	Package Marking	Date Compliant	Moisture Sensitivity Level (IPC/JEDEC-STD-030C)	Soldering Conditions (temp/time)	NOTES
POLYESTER FILM CAPACITORS											
WMF Note #1	Axial round, Film/Foil	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
WMC Note #1	Axial round, Film/Foil	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	#1 - DC film non-compliant inventories once individual part number(s) is deleted replacement part(s) will have -F added to end of part number to signify RoHS compliance.
MMA Note #1	Axial oval, Metallized	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
MMP Note #1	Axial oval, Metallized	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
MMWA Note #1	Axial round, Metallized	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
150	Axial round, Metallized	Date Code	Sn	<1000 PPM	Y	No change	Per JESD97	0518	N/A	260°C/10s	
158X	Radial box, Metallized	Date Code	Sn	<1000 PPM	Y	No change	Per JESD97	1/1/05	N/A	260°C/10s	
160	Radial box, Metallized	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	2/1/06	N/A	260°C/10s	
167/184	Radial box, Metallized	see note	Sn	<1000 PPM	Y	see note	Per JESD97	1/1/06	N/A	260°C/10s	Parts date coded 01/01/04 - 03/31/06 are RoHS compliant. New production as of 04/01/06 add suffix -F to part number for RoHS compliant parts.
168/185	Radial box, Metallized	see note	Sn	<1000 PPM	Y	see note	Per JESD97	1/1/06	N/A	260°C/10s	Parts date coded 01/01/04 - 03/31/06 are RoHS compliant. New production as of 04/01/06 add suffix -F to part number for RoHS compliant parts.
225P	Radial dipped Film / Foil	No change	Sn	<1000 PPM	Y	No change	Per JESD98	8/1/2005	N/A	260°C/10s	
418P	Radial dipped Film / Foil	No change	Sn	<1000 PPM	Y	No change	Per JESD99	8/1/2005	N/A	260°C/10s	
425M	Radial dipped, Metallized	No change	Sn	<1000 PPM	Y	No change	Per JESD100	8/1/2005	N/A	260°C/10s	
CS	Capstick	NONE	Sn/Pb	N/A	RoHS 5	No change	N/A	N/A	N/A	260°C/5s	Thru Hole part, wave solder
CS	Capstick	NONE	Sn	<1000 PPM	Y	Add -FA	Per JESD97	N/A	N/A	260°C/5s	Thru Hole part, wave solder
DLR Note #1	Radial oval, Film/Foil	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
DMT Note #1	Radial oval, Film/Foil	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
DSF	Radial oval, Stacked Metallized	Date Code	Sn	<1000 PPM	Y	No change	Per JESD97	1/1/2006	N/A	260°C/10s	
DME Note #1	Radial oval, Metallized	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
DMM Note #1	Radial oval, Metallized	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
DMMA Note #1	Radial oval, Metallized	-F on Parts	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
MEXY	Radial box, Metallized	None	Sn	<1000 PPM	Y	No change	Per JESD97	1/1/03	N/A	260°C/10s	
PS	Radial dipped Metallized	None	Sn	<1000 PPM	Y	No change	PER JESD97	8/1/2005	N/A	260°C/10s	
Q/QL	Radial oval, Metallized	NONE	Sn	<1000 PPM	Y	No change	Per JESD97	1/1/03	N/A	260°C/10s	
RA	Radial Stacked Metallized	NONE	Sn/Pb	N/A	RoHS 5	No change	N/A	N/A	N/A	260°C/5s	
RA	Radial Stacked Metallized	NONE	Sn	<1000 PPM	Y	Add -FA	Per JESD97	N/A	N/A	260°C/5s	
POLYPROPYLENE CAPACITORS											
170	Axial round, Metallized	Date Code	Sn	<1000 PPM	Y	No change	Per JESD97	5/1/05	N/A	260°C/10s	
171 Note #1	Radial box, Metallized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
715P	Radial dipped Film/Foil	None	Sn	<1000 PPM	Y	No Change	Per JESD98	8/1/2005	N/A	260°C/10s	
716P	Radial dipped Film/Foil	None	Sn	<1000 PPM	Y	No Change	Per JESD99	8/2/2005	N/A	260°C/10s	
716P-HV	Radial dipped Film/Foil	None	Sn	<1000 PPM	Y	No Change	Per JESD100	8/3/2005	N/A	260°C/10s	
715P/717P	Radial dipped Film/Foil	None	Sn	<1000 PPM	Y	No Change	Per JESD101	8/4/2005	N/A	260°C/10s	
718P-719P	Radial dipped Film/Foil	None	Sn	<1000 PPM	Y	No Change	Per JESD102	8/5/2005	N/A	260°C/10s	
725M	Radial dipped Film/Foil	None	Sn	<1000 PPM	Y	No Change	Per JESD103	8/6/2005	N/A	260°C/10s	
773P	Radial dipped Film/Foil	None	Sn	<1000 PPM	Y	No Change	Per JESD104	8/7/2005	N/A	260°C/10s	
778P/779P	Radial dipped Film/Foil	None	Sn	<1000 PPM	Y	No Change	Per JESD105	8/8/2005	N/A	260°C/10s	
930 Note #1	Axial round, Metallized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
932C Note #1	Axial round, Metallized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
935 Note #1	Axial round, Metallized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
936C Note #1	Axial oval, Metallized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
940C Note #1	Axial round, Metallized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
941C Note #1	Axial oval, Metallized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
942C Note #1	Axial round, Film/Foil Hybrid	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
943C Note #1	Axial oval, Film/Foil Hybrid	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
944U	Screw Terminal, Metallized	None	Sn	<1000 PPM	Y	No change	Per JESD97	9/1/2009	N/A	N/A	
945U	Screw Terminal, Metallized	None	Sn	<1000 PPM	Y	No change	Per JESD97	9/1/2009	N/A	N/A	
946C Note #1	Axial round, Metallized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
947C	Screw Terminal, Metallized	None	Sn	<1000 PPM	Y	No change	Per JESD97	1/1/2008	N/A	N/A	
950 Note #1	Axial round, Metallized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
BLC	Box, Metallized	NONE	Sn	<1000 PPM	Y	No Change	Per JESD97	10/1/2012	N/A	260°C/10s	
DPP Note #1	Radial oval, Film/Foil	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
DPFF Note #1	Radial round, Film/Foil	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
DPPM Note #1	Radial oval, Film/Foil	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	

DPM Note #1	Radial oval, Metalized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
MPX	Radial box, Metalized	Date Code	Sn	<1000 PPM	Y	No change	Per JESD97	5/1/05	N/A	260°C/10s	
PS	Radial dipped Metalized	None	Sn	<1000 PPM	Y	No Change	PER JESD97	8/1/2005	N/A		
PVC	Radial round, Film/Foil	Date Code	Sn	<1000 PPM	Y	No change	Per JESD97	5/31/05	N/A	260°C/10s	
UJNL	Snap-in, Metalized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	7/1/06	N/A	260°C/10s	
SCC	Box, Metalized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	7/1/06	N/A	260°C/10s	
SCD	Box, Metalized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	7/1/06	N/A	260°C/10s	
SCM	Box, Metalized	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	7/1/06	N/A	260°C/10s	
WPP Note #1	Axial round, Film/Foil	-F on Part	Sn	<1000 PPM	Y	Add -F	Per JESD97	1/1/2006	N/A	260°C/10s	
Teflon											
MCM	Metal Clad Teflon®	N/A	Ag	<1000 PPM	Y	add suffix -F	PER JESD97	ALWAYS	W/A	260°C/10s	
Revision Date: 8/28/13											
provided on the enclosed is correct as of the date indicated on the document. Since some of the											

MICA RoHS Compliance Worksheet

Series or Type	Description or Photo	RoHS Compliance Identification on Device	Termination Finish	Pb Free	RoHS Compliant	Compliant Part Number	Package Marking	Date Compliant	Moisture Sensitivity Level (IPC/JEDEC J-STD-020C)	Soldering Conditions (Temp/Time)	Notes
CD (except as noted below)	Silvered Dipped Mica	mustard color	Sn	<1000 PPM*	Y	add letter F after the number 3 at end of part no.	PER JESD97	2/1/2006	N/A	260°C/10s	clamped leads so no problem with tin foil lead solder required to attach leads to lead foil section
CD6, CD7	Silvered Dipped Mica	N/A	Sn	N	N	N/A	N/A	NA	N/A	260°C/10s	
CDB, CDVB	Metallurgical Bonded Ag Dipped Mica	N/A	Sn40Pb	N	N	N/A	N/A	NA	N/A	260°C/10s	Requires Lead foil in order to metallurgically bond successfully
CM0, CMR	Silvered Dipped Mica	N/A	Sn40Pb	N	N	N/A	N/A	NA	N/A	260°C/10s	Military part and must contain Pb in leads
MC	SMT Mica Chip	N	Sn	<1000 PPM*	Y	add suffix -F	PER JESD97	3/25/2005	MSL2A	220-260/10s	
MCH, MCN	SMT nonmagnetic mica chip	N	Sn	<1000 PPM*	Y	always been compliant	PER JESD97	ALWAYS	MSL2A	220-260/10s	
MIN	SMT Metal Clad Mica	N/A	Ag	<1000 PPM*	Y	add suffix -F	PER JESD97	1/1/2006	W/A	260°C/10s	
MCM	Metal Clad Mica	N/A	Ag	<1000 PPM*	Y	add suffix -F	PER JESD97	1/1/2006	W/A	260°C/10s	
*Subject to exemption #5											
Revision Date: 2/24/10											
To the best of our knowledge, the information											

Multi Layered Ceramics RoHS Compliance Worksheet

Series or Type	Description or Photo	RoHS Compliance Identification on Device	Termination Finish	Pb Free	RoHS Compliant	Compliant Part Number	Package Marking	Date Compliant	Moisture Sensitivity Level (IPC/JEDEC J-STD-020C)	Soldering Conditions (Temp/Time)	Notes
MLLC (Multi-Layer Ceramic)											
M15, M20, M22, M30, M40, M50	RADIAL	N	100% Matte Sn	<1000 PPM	Y	ADD -F	Per JESD97	Jan. 2006	N/A	260° C / 20 sec.	(see remark 1)
M60		N	100% SN	N	Y	ADD -F	N/A	Jan. 2005	N/A	260° C / 10 sec.	(<1000 ppm Pb)
P10	AXIAL	N	100% Matte Sn	<1000 PPM	Y	ADD -F	Per JESD97	Jan. 2006	N/A	260° C / 20 sec.	(see remark 1)
P12, P20, P30, P40		N	100% Matte Sn	N	Y	ADD -F	Per JESD97	Jan. 2006	N/A	260° C / 20 sec.	(see remark 1)
CK12, CK13, CK14, CK15, CK16	AXIAL	N	100% Matte Sn	N	N	N/A	N/A	N/A	N/A	245° C / 5 sec.	No current plans
CKR12, CKR13, CKR14, CKR15, CKR16		N	100% Matte Sn	N	N	N/A	N/A	N/A	N/A	245° C / 5 sec.	No current plans
CK05 CK06	Radial Leaded X7R Ceramic Molded	N/A	SnPb	N	N	N/A	N/A	N/A	N/A	260° ± 10 s	No plans to make compliant
C04, C06, C08, C12	CHIPS	N	100% Matte Sn	<1000 PPM	Y	ADD -F	Per JESD97	Now	N/A	260° C / 20 sec.	(see remark 2)
KEY:											
REMARK 1:											
This product contains a high-lead-content solder used for internal lead attach that is exempted by RoHS. Terminations are 100% Pb-Free (100% Matte Sn Plating)											
REMARK 2:											
All ceramic SMD products have 100% Matte Sn termination finish. All XSR, high CV X7R (10 nF and higher), Y5V and Z5U products are totally lead free. Low CV X7R (less than 10nF) and all COG products do have a small percentage of lead content located in the fired Ceramic Matrix (Dielectric) which exempted											
Revision Date: 2/24/10											
To the best of our knowledge, the information											

SMT RoHS Compliance Worksheet

Series or Type	Description or Photo	RoHS Compliance Identification on Device	Termination Finish	Pb Free	RoHS Compliant	Compliant Part Number	Package Marking	Date Compliant	Moisture Sensitivity Level (IPC/JEDEC J-STD-020C)	Soldering Conditions (Temp/Time)	Notes
V-Chips											
AEB	(10 mm Dia) Aluminum Electrolytic Capacitors (SMT)	N	Sn	<1000 PPM	Y	Add -F	Per JESD97	8/1/2003	N/A		CDE Case Code "J" & "K" use a low boiling point electrolyte which will not stand up to Pb-Free soldering processes http://www.cde.com/catalogs/AEB.pdf
AEB	(12.5 - 18 mm Dia) Aluminum Electrolytic Capacitors (SMT)	N	Sn	<1000 PPM	Y	Add -F	Per JESD97	8/1/2003	N/A	≤ 5 Sec at 230° C (12.5 mm to 18mm Dia)	CDE Case Code: L, P, U, R, S http://www.cde.com/catalogs/AEB.pdf
AFC	(4 - 10mm Dia) Aluminum Electrolytic Capacitors (SMT)	N	Sn38/Sn	<1000 PPM	Y	Add -F	Per JESD97	8/1/2003	N/A	≤ 5 Sec at 250° C (4 mm to 6.3mm Dia); ≤ 5 Sec. At 235° C (8mm to 10 mm Dia)	CDE Case Codes: B, C, D CDE Case Codes: E, F, G http://www.cde.com/catalogs/AFC.pdf
AFC	(12.5 - 18 mm Dia) Aluminum Electrolytic Capacitors (SMT)	N	Sn	<1000 PPM	Y	Add -F	Per JESD97	8/1/2003	N/A	≤ 5 Sec at 250° C (4 mm to 6.3mm Dia); ≤ 5 Sec. At 235° C (8mm to 10 mm Dia)	CDE Case Code: L, P, R, S http://www.cde.com/catalogs/AFC.pdf
AFK	(12.5 - 18 mm Dia) Aluminum Electrolytic Capacitors (SMT)	N	Sn38/Sn	<1000 PPM	Y	Add -F	Per JESD97	8/1/2003	N/A	≤ 5 Sec at 250° C (4 mm to 6.3mm Dia); ≤ 5 Sec. At 235° C (8mm to 10 mm Dia)	CDE Case Codes: B, C, D, X http://www.cde.com/catalogs/AFK.pdf
AFK	(12.5 - 18 mm Dia) Aluminum Electrolytic Capacitors (SMT)	N	Sn	<1000 PPM	Y	Add -F	Per JESD97	8/1/2003	N/A	≤ 20 Sec at 230° C (12.5 mm Dia)	CDE Case Codes: H, P, R http://www.cde.com/catalogs/AFK.pdf
AHA	Aluminum Electrolytic Capacitors (SMT)	N	Sn38/Sn	<1000 PPM	Y	Add -F	Per JESD97	8/1/2003	N/A	≤ 5 Sec at 250° C (4 mm to 6.3mm Dia); ≤ 5 Sec. At 235° C (8mm to 10 mm Dia)	CDE Case Codes: B, C, D, X CDE Case Codes: E, F, G http://www.cde.com/catalogs/AHA.pdf
AHD	Aluminum Electrolytic Capacitors (SMT)	N/A	N/A	N	N	N/A	N/A	N/A	N/A	≤ 5 Sec at 240° C (4 mm to 6.3mm Dia); ≤ 5 Sec. At 230° C (8mm to 10 mm Dia)	CDE Case Codes: B, C, D CDE Case Codes: E, F, G http://www.cde.com/catalogs/AHD.pdf

AVS	Aluminum Electrolytic Capacitors (SMT)	N	Sn38/Sn	<1000 PPM	Y	Add-F	Per JE5D97	8/1/2003	N/A	≤ 5 Sec at 250° C (4 mm to 6.3mm Dia); ≤ 5 Sec. At 235° C (8mm to 10 mm Dia)	CDE Case Codes: A, B, C, D, X CDE Case Codes: E, F, G http://www.cde.com/catalogs/AVS.pdf
SOLID POLYMER ALUMINUM											
ESR	SMT Specialty Polymer Aluminum Electrolytic Capacitors	N	Sn	<1000 PPM	Y	NO CHANGE	Per JE5D97	5/2002		240 °C max., 5 s; ≥ 200 °C: 30 s max.	Terminal Base Material: Cu Terminal Finish Material: Sn RoHS Compliant: Date Code May 2002 and beyond Terminal Base Material: Cu Terminal Finish Material: Sn RoHS Compliant: Date Code May 2002 and beyond http://www.cde.com/catalogs/ESRD.pdf Terminal Base Material: Cu Terminal Finish Material: Sn RoHS Compliant: Date Code May 2002 and beyond http://www.cde.com/catalogs/ESRE.pdf Terminal Base Material: Cu Terminal Finish Material: Sn RoHS Compliant: Date Code May 2002 and beyond http://www.cde.com/catalogs/ESRH.pdf Terminal Base Material: Cu Terminal Finish Material: Sn RoHS Compliant: Date Code May 2002 and beyond
ESRD	SMT Specialty Polymer Aluminum Electrolytic Capacitors	N	Sn	<1000 PPM	Y	NO CHANGE	Per JE5D97	5/2002			
ESRE	SMT Specialty Polymer Aluminum Electrolytic Capacitors	N	Sn	<1000 PPM	Y	NO CHANGE	Per JE5D97	5/2002			
ESRH	SMT Specialty Polymer Aluminum Electrolytic Capacitors	N	Sn	<1000 PPM	Y	NO CHANGE	Per JE5D97	5/2002			
ESRL	SMT Specialty Polymer Aluminum Electrolytic Capacitors	N	Sn	<1000 PPM	Y	NO CHANGE	Per JE5D97	5/2002			
SPA	SMT Specialty Polymer Aluminum Electrolytic Capacitors	N	Sn	<1000 PPM	Y	NO CHANGE	Per JE5D97	5/2002			
SPCX	SMT Specialty Polymer Aluminum Electrolytic Capacitors	N	Sn	<1000 PPM	Y	NO CHANGE	Per JE5D97	SINCE INCEPTION	MSL LEVEL 3 In Bag, MSL LEVEL 2 once bag is opened		260 °C max., 5 s
SPSX	SMT Specialty Polymer Aluminum Electrolytic Capacitors	N	Sn	<1000 PPM	Y	NO CHANGE	Per JE5D97	SINCE INCEPTION	MSL LEVEL 3 In Bag, MSL LEVEL 2 once bag is opened	260 °C max., 5 s	Terminal Base Material: Cu Terminal Finish Material: Sn http://www.cde.com/catalogs/SPSX.pdf
SMT Film											
FCA	SMT Film Chip Capacitors	N	Sn-Ag-Cu	<1000 PPM	Y	NO CHANGE	Per JE5D97	11/02	5A	Peak Temp: 240° C max 5 sec Recommended Temp: 235° C max 5 sec	Terminal Finish - Sn-Ag-Cu RoHS Compliant Date Code November 2002 and beyond http://www.cde.com/catalogs/FCA.pdf
FCN	SMT Film Chip Capacitors	N	Sn-Ag-Cu	<1000 PPM	Y	NO CHANGE	Per JE5D97	11/02	N/A	Peak Temp: 240° C max 5 sec Recommended Temp: 235° C max 5 sec	Terminal Finish - Sn-Ag-Cu RoHS Compliant Date Code November 2002 and beyond http://www.cde.com/catalogs/FCN.pdf
FCP	SMT Film Chip Capacitors	N	Sn-Ag-Cu	<1000 PPM	Y	NO CHANGE	Per JE5D97	Nov. 2002	N/A	Peak Temp: 260° C max 5 sec Recommended Temp: 240° C max 5 sec	Terminal Finish - Sn-Ag-Cu RoHS Compliant Date Code November 2002 and beyond http://www.cde.com/catalogs/FCP.pdf
CS_G	SMT CAPSTICK	N	SnPb	N	RoHS S	NO CHANGE			4	220°C for 30 sec.	
CS_G-FA	SMT CAPSTICK	N	Sn	<1000 PPM	Y	add -FA	Per JE5D97		4	220°C for 30 sec.	
CB_G	SMT CAPSTICK	N	SnPb	N	RoHS S	NO CHANGE			4	220°C for 30 sec.	
CB_G-FA	SMT CAPSTICK	N	Sn	<1000 PPM	Y	add -FA	Per JE5D97		4	220°C for 30 sec.	
CB_G-FS	SMT CAPSTICK	N	Sn	<1000 PPM	Y	add -FS	Per JE5D97		4	245°C for 30 sec.	
SMT MICA											
MIN (MIN02-002 style)	Teflon® SMT Metal Clad	N/A	Ag	<1000 PPM	Y	add suffix - F	PER JE5D97	Always	N/A	260°C/10s	http://www.cde.com/catalogs/MCM-MIN.pdf
MIN (MIN02-001 style)	Mica SMT Metal Clad	N/A	Ag	<1000 PPM*	Y	add suffix - F	PER JE5D97	1/1/2006	N/A	260°C/10s	http://www.cde.com/catalogs/MCM-MIN.pdf
MCM (MCM01-009 style)	Mica SMT Metal Clad	N/A	Ag	<1000 PPM*	Y	add suffix - F	PER JE5D98	1/2/2006	N/A	260°C/10s	http://www.cde.com/catalogs/MCM-MIN.pdf
MC	SMT Mica Chip	N	Sn	<1000 PPM*	Y	add suffix - F	PER JE5D97	3/25/2005	2A	220-260/10s	http://www.cde.com/catalogs/MC.pdf
MCH, MCN V-Chips	nonmagnetic SMT Mica C	N	Sn	<1000 PPM*	Y	always been compliant	PER JE5D97	3/25/2005	2A	220-260/10s	http://www.cde.com/catalogs/MCH-MCHN.pdf
AVE	Aluminum Electrolytic Capacitors (SMT)	N	Sn	yes	Y	n/a		7/5/2007	no	n/a	3 to 6.3 mm dia. http://www.cde.com/catalogs/AVE.pdf
AVE											8 and 10 mm dia. http://www.cde.com/catalogs/AVE.pdf
AVES											260°C for 5 seconds, max. of 60 sec. at or above 230°C http://www.cde.com/catalogs/AVES.pdf
AVEK											3 to 6.3 mm dia. http://www.cde.com/catalogs/AVEK.pdf
AVEK											8 and 10 mm dia. http://www.cde.com/catalogs/AVEK.pdf
AVEZ											240°C for 5 seconds, max. of 40 sec. at or above 217°C 260°C for 5 seconds, max. of 60 sec. at or above 230°C http://www.cde.com/catalogs/AVEZ.pdf
AVGA											4 to 6.3 mm dia., 6.3 to 50 Vdc http://www.cde.com/catalogs/AVGA.pdf
AVGA											4 to 6.3 mm dia., 63 Vdc http://www.cde.com/catalogs/AVGA.pdf
AVGA											8 to 16 mm dia. http://www.cde.com/catalogs/AVGA.pdf
AVGA											240°C for 5 seconds, max. of 40 sec. at or above 217°C http://www.cde.com/catalogs/AVGA.pdf
AVGA											240°C for 5 seconds, max. of 40 sec. at or above 217°C http://www.cde.com/catalogs/AVGA.pdf
Revision Date: 8/28/13											
*subject to exemption #5											
To the best of our knowledge, the information provided on											
Solid Tantalum RoHS Compliance Worksheet											
Series or Type	Description or Photo	RoHS Exemption Identification on Device	Termination Finish	Pb Free	RoHS Compliant	Compliant Part Number	Package Marking	Date Compliant	Moisture Sensitivity Level (IPC/JEDEC J-STD-020C)	Soldering Conditions (Temp/Time)	Notes
Solid Tantalum											

TAS	Herm Sealed Axial	N/A	Matte Tin	<1000 PPM	Y	add -F suffix	Per JESD97	07/01/06	N/A	260° / 20 Sec
TXA		N/A	Matte Tin	<1000 PPM	Y	add -F suffix	Per JESD97	07/01/06	N/A	260° / 20 Sec
THF		N/A	Matte Tin	<1000 PPM	Y	add -F suffix	Per JESD98	07/02/06	N/A	260° / 20 Sec
TIM (Radial)	Molded Case	N/A	N	N	N/A	N/A	N/A	N/A	N/A	260° / 20 Sec
TAC (Axial)		N/A	Matte Tin	<1000 PPM	Y	add -F suffix	Per JESD97	07/01/06	N/A	260° / 20 Sec
TDC,TDL	Dipped	N/A	Matte Tin	<1000 PPM	Y	add -F suffix	Per JESD97	07/01/06	N/A	260° / 20 Sec
T491, T494, T495, T496	Surface Mount	N/A	100% Matte	<1000 PPM	Y*	add -F suffix	Per JESD97	See Remark 1	1	260° / 20 Sec
M39003, CSR	Military							See Notes		Must be built to Military Specs

Remark 1: After May 1, 2004, matte tin finish will be supplied on the T491X (excludes military series T492 & T493) T510, T520 & T530 surface mount products. Shipment of PbFree units begins when tin/lead inventory is depleted. To insure receiving PbFree units, order must specify PbFree. (adding -F suffix)

Revision Date: 2/24/10
To the best of our knowledge, the information

Cornell Ultracapacitors RoHS Compliance Worksheet

Series or Type	Description or Photo	RoHS Compliance Identification on Device	Termination Finish	Pb Free	RoHS Compliant	Compliant Part Number	Package Marking	Date Compliant	Moisture Sensitivity Level (IPC/JEDEC J-STD-020C)	Soldering Conditions (Temp/Time)	Notes
CDHC_SR	Hybrid Carboncap Power Ultracapacitors	yes	tin	Yes	Yes	No Change		NA	NA	< 260°C for <5 sec.	Snap In
CDLC_K04	Carboncap Power U	yes	NA	Yes	Yes	No Change		NA	NA	NA	M12 thread
CDLC_SR	Carboncap Power U	yes	tin	Yes	Yes	No Change		NA	NA	< 260°C for <5 sec.	Snap In
CDLC_LR	Carboncap Power U	yes	NA	Yes	Yes	No Change		NA	NA	NA	M6 thread
CDLC_S4	Carboncap Power U	yes	tin	Yes	Yes	No Change		NA	NA	< 260°C for <5 sec.	Multipin
CDLC_T11	Carboncap Power U	yes	tin	Yes	Yes	No Change		NA	NA	< 260°C for <5 sec.	4 Pin
EDL/EDLR Series	Electric Double Layer Capacitors	N	N/A	<1000 PPM	Yes	No Change			N/A		

Revision date: 5/7/13