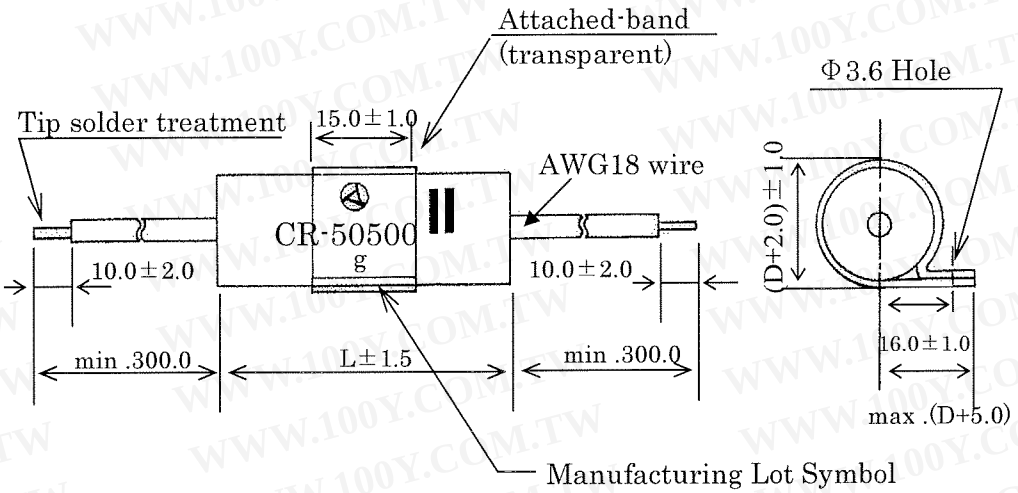
DATE OF ISSUE	SPECIFICATIONS	Spec. – 736A
April 11, 2005.		1/ 6

1. Article　　SPARK KILLER, CR SERIES
(Correspondence product of RoHS Restriction)

2. Shape, Dimensions



Part No.	Dimensions(mm)	
	D	L
CR-10201	14.5	38.0
CR-20151	〃	42.0
CR-30151	18.5	48.0
CR-50500	〃	〃

APPD.	CHK.	DESIGN	TRACE	OKAYA ELECTRIC INDUSTRIES CO.,LTD.
K. Mizuuchi	S. Yoshie	H. Tomita		1

3. Electrical Performance (Normal Characteristics)

Part No.	Nominal voltage	Nominal capacitance ±20%	Tolerance of resistance ±30%	Voltage withstand	Insulation resistance
CR-10201	250Vac 50/60Hz	0.1μF	200Ω(1/4W)	Between terminals 625Vac 50/60Hz 60sec	Between terminals 10000MΩ (20℃ at 100Vdc)
CR-20151		0.2μF	150Ω(1/4W)		
CR-30151		0.3μF	150Ω(1/2W)	Both terminals to case 2000Vac 50/60Hz 60sec	Both terminals to case 10000MΩ (20℃ at 100Vdc)
CR-50500		0.5μF	50Ω(1/2W)		

Part No.	Pulse Conditions			
	Peak pulse voltage	Pulse width	Recycling frequency	Pulse width(sec.)×Frequency(Hz) 275Vac
CR-10201	Max700$V_{p\text{-}p}$	Max. 50msec	Max. 360Hz	Max. 0.45
CR-20151		Max. 50msec		Max. 0.15
CR-30151		Max. 70msec		Max. 0.07
CR-50500		Max. 70msec		Max. 0.07

Peak Voltage : 800$V_{p\text{-}p}$ max.
Operating temperature : -40 ～ +85℃

Remarks) Since rated voltage shows the maximum rating, there will be no function problem when using it less than the rating.

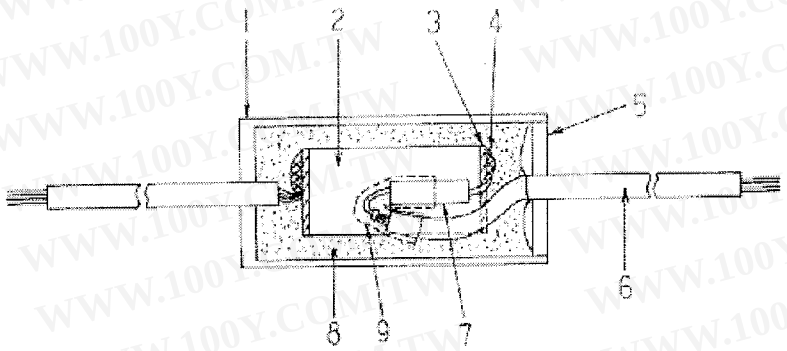
4. Reference Standard
JIS C 5101-1 Fixed capacitors for use in electronic equipment Part 1
JIS C 5101-14 Fixed capacitors for use in electronic equipment Part 14
JIS C 60068-2-45 Environmental testing procedures

5. Performance

No	Application item		Performance	Test method
1	Voltage withstand	Between terminals	No defect	Ref. JIS C 5101-14 4.2.1 625Vac 50/60Hz 60sec.
		Both terminals to case		Ref. JIS C 5101-14 4.2.1 2000Vac 50/60Hz 60sec.
2	Insulation resistance	Between terminals	Min. 10000MΩ	Ref. JIS C 5101-14 4.2.5 measured at 100Vdc 60sec.
		Both terminals to case	Min. 10000MΩ	
3	Capacitance		±20% Max.	Ref. JIS C 5101-14 4.2.2 1kHz, 5Vrms max.
4	Series resistance		±30% Max.	Ref. JIS C 5101-14 4.2.4
5	Robustness of terminations	Tensile	No wire breakage and no damage of capacitor.	JIS C 5101-14 4.3 Tensile: 20N Twisting: 180° 2 times
		Twisting		
6	Vibration		No open and short circuit shall be occurred. Stable condition keep unchanged. Keep condition 1-4 after the test.	Ref. JIS C 5101-14 4.7 Vibration freq. 10～55Hz, Amplitude 1.5mm Add X,Y,Z directions for 2hrs per direction.
7	Solder ability		Solder layer shall cover 90% along the circumference of lead wire.	Ref. JIS C 5101-14 4.5 Rosin density 25%, solder temp.-230℃, dipping duration 2±0.5sec.
8	Resistance to soldering heat		Appearance : No abnormality	Ref. JIS C 5101-14 4.4 Solder temp.350 ℃ , dipping duration 5 sec. Left for 5 sec. at room temp. after dipping and again dip in solder for 5 sec.
			Voltage withstand : To satisfy No.1	
			Cap. ratio : Within ±5% of initial value.	
			Series resistance ratio: Within ±5% of initial value.	
9	Resistance to solvent		Appearance : No abnormality	Ref. JIS C 60068-2-45 Use I.P.A or equivalent.
			Cap. ratio : Within ±1% of initial value.	
			Series resistance ratio: Within ±1% of initial value.	
10	Resistance to lower category temp.		Cap. ratio at -40℃ : Within 0 / -8% of initial value 20℃	Ref. JIS C 5101-14 4.11.4 (Characteristic at temp. -40℃)
11	Resistance to dry heat. Insulation resistance		Between terminals: Min. 100MΩ Terminals to case: Min.1000MΩ	Ref. JIS C 5101-14 4.11.2 (Characteristic at temp. +85℃)
	Cap. ratio at +85℃		Within +5 / 0% of initial value 20℃	

No	Application item	Performance	Test method
12	Rapid change of temperature	Appearance: No abnormality Voltage withstand: To satisfy No.1 Insulation resistance: To satisfy No.2 Cap. ratio: Within ±5% of initial value. Series resistance ratio: Within ±5% of initial value.	Ref. JIS C 5101-14 4.6 Temperature -40℃ for 60 min. and +85℃ for 60min. as 1 cycle and it shall be repeated for 100 cycles. (The step of normal temp. is not performed.)
13	Immersion cycle	Appearance: No abnormality Voltage withstand: To satisfy No.1 Insulation resistance: To satisfy No.2 Cap. ratio: Within ±5% of initial value. Series resistance ratio: Within ±5% of initial value.	To be immersed in the bath, one a clean water at temp. 65℃ and the other saturated salt water bath at 0℃ for 15 min. as 1cycle, and to be repeated for 2 cycles. The capacitor shall be washed in water and let alone for 2 to 24 hrs.
14	Damp heat (Steady state)	Appearance: No abnormality Voltage withstand: To satisfy No.1 Insulation resistance: At least1/3 of item No.2 Cap. ratio: Within ±8% of initial value. Series resistance ratio: Within ±10% of initial value.	Ref. JIS C 5101-14 4.12 Temperature 60℃ and relative humidity 90-95% for 500 hrs. After the test cap. shall be let alone for 2 hrs at room temp.
15	Damp heat cycle	Appearance: No abnormality Voltage withstand: To satisfy No.1 Insulation resistance: To satisfy No.2 Cap. ratio: Within ±5% of initial value. Series resistance ratio: Within ±5% of initial value.	Ref. JIS C 5101-14 4.11
16	Damp heat loading	Appearance: No abnormality Insulation resistance: At least1/3 of item No.2 Cap. ratio: Within ±8% of initial value. Series resistance ratio: Within ±10% of initial value.	Temp. 40℃ and relative humidity 90-95%, and DC voltage 2 times of rated voltage shall be applied for 1000hrs. After the test cap. shall be let alone for 2hrs.
17	Endurance	Appearance: No abnormality Insulation resistance: At least1/2 of item No.2 Cap. ratio: Within ±10% of initial value. Series resistance ratio: Within ±10% of initial value.	Ref. JIS C 5101-14 4.14 Temp. 85℃, 440Vac shall be applied continuously, only 0.1 sec. set up to 1000Vac per each hour. The test shall be performed for 1000 hrs.

6. Structure drawing



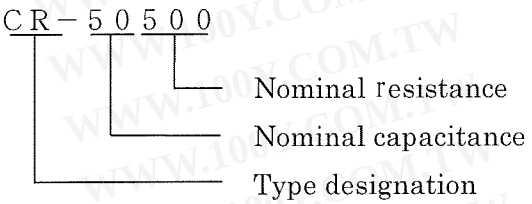
All components are to be RoHS restriction correspondence articles.

No	Article	Materials	Flame resistance
1	Modified case	Polybutylene terephthalate	UL-94 V-0 approved
2	Capacitor element	Metallized Polyester film	
3	Soldering weld (Metalicon)	Pb free correspondence	
4	Soldering	Pb free correspondence	
5	Modified resin cap	Polybutylene terephthalate	UL-94 V-0 approved
6	Insulated wire	PVC wire UL1015 AWG18	
7	Resistor	Resistance	
8	Filler resin	Polyurethane resin	
9	Thermal cure tube	Irradiation polyolefin	UL-94 V-0 approved

Remarks) The above materials are subjected to change into specifications and other related standards in the range which guarantees the regular contents.
The above materials are described as existing chemical materials, complied with 'Inspection and manufacturing control of chemical materials of law'.
Not including any material for damaging Ozone layer.

7. Marking
a) Part Number
b) Trademark of Okaya Electric Industries Co., Ltd.
c) Manufacturing Lot symbol
d) Capacitor symbol (Marking with label)

8. Ordering Information



9. Terms of use

Please use this product with reference to the following contents in order to avoid from accident.

- 「EIAJ RCR-2350B Guideline of notabilia for fixed plastic film capacitors for use in electronic equipment」 published by Japan Electronic and Information Technology Industries Association.
- 「Attention on use of the noise suppression capacitor」 as per attached.