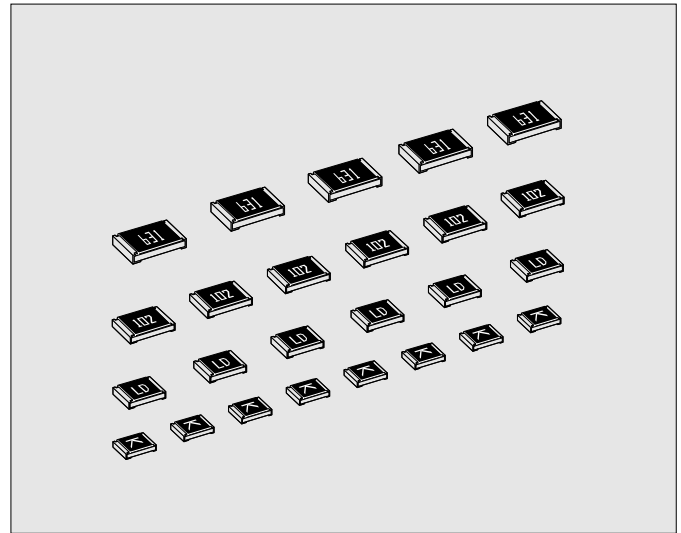


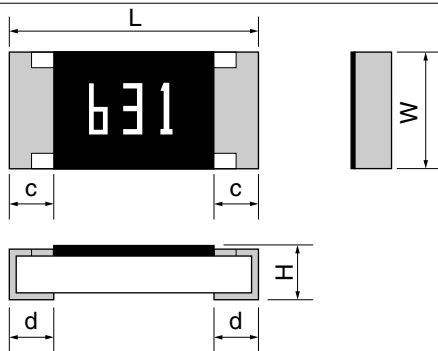
# FCC,FHC

## ●Features

1. Fast-Acting Type
2. Suitable for over-current protection of the circuit of miniature portable equipment.
3. 4 sizes available : from 0402 to 1206.
4. No smoke, no flame, at the fusing conditions.
5. Halogen\*1 and Antimony\*2 free product
  - \*1 Cl or Br ≤ 900ppm, Cl+Br ≤ 1500ppm
  - \*2 Sb<sub>2</sub>O<sub>3</sub> ≤ 900ppm
6. Certified UL and c-UL.
  - File No.: E176847
7. Major applications
  - PC related equipment and peripherals (PC, Hard Drive, Printer etc.).
  - Small portable devices (Mobile phone, PDA Battery Charger etc.).
  - Digital Camera (Digital still camera).
  - Game equipment.
  - LCD monitors, LCD modules.



## ●Dimensions



Current value is marked on the over coating.  
Please refer to Ratings Table on next page.

### Ratings/Option Code : AD, AB, AA

Unit : mm

Style	Metric	Inch	L	W	H	c	d	*Unit weight/pc.
FCC10	1005	0402	1.0±0.05	0.5 ±0.05	0.4 ±0.05	0.2±0.1	0.25±0.10	0.8mg
FHC10								
FCC16	1608	0603	1.6±0.1	0.8 <sup>+0.15</sup> / <sub>-0.05</sub>	0.45±0.10	0.3±0.15	0.3 ±0.1	2mg
FHC16								
FCC20	2012	0805	2.0±0.1	1.25±0.10	0.6 ±0.1	0.4±0.2	0.4 ±0.2	6mg
FHC20								
FCC32	3216	1206	3.2±0.2	1.6 ±0.15	0.6 ±0.1	0.5±0.25	0.5 ±0.25	10mg
FHC32					0.65±0.10			11mg

### Ratings/Option Code : LB

Style	Metric	Inch	L	W	H	c	d	*Unit weight/pc.
FCC10	1005	0402	1.0±0.05	0.5 ±0.05	0.35 Max.	0.2±0.1	0.25±0.10	0.6mg

\*Values for reference

## ●Part Number Description

Example

Style		202		AD		TP						
FCC	20											
Product Type	Size			Rated Current		* Packaging & Standard Qty. (Min.)						
FCC	Code	Metric	Inch	e.g. : 501=0.5A 132=1.25A 202=2.0A		B	Bulk (Loose Package)	1,000pcs.	All Styles			
FHC	10	1005	0402	3-Digit		PA	Press-Pocket Paper Tape (2mm pitch)	10,000pcs.	FCC10 FHC10			
	16	1608	0603			TP	Paper Tape	5,000pcs.	FCC16 FHC16 FCC20 FHC20 FCC32 FHC32			
	20	2012	0805						TH	Paper Tape (2mm pitch)	10,000pcs.	FCC10(LB)
	32	3216	1206									

\*Refer to Tape and Packaging information on pages 54 and 55.

CHIP FUSES; RECTANGULAR TYPE

FCC FHC

●Ratings/Option Code : AD (Fast-Acting type)

Size		Style	Rated Current		Internal Resistance m ohm max.	Mark	Interrupting Rating	Time/Current Characteristics	Working Temperature Range °C				
Metric	Inch		Code	A									
1005	0402	FCC10	151	0.15	2,700	O	32Vd.c. 35A	Rated Current×250% Opening Time 5s max.	- 55 ~ + 125				
			201	0.2	1,000	Z							
			251	0.25	750	C							
			321	0.315	620	D							
			401	0.4	340	E							
			501	0.5	290	F							
			631	0.63	210	I							
			801	0.8	150	K							
		FHC10	102	1.0	120	L	30Vd.c. 35A						
			132	1.25	90	M							
			162	1.6	55	N							
			202	2.0	40	S							
			252	2.5	36	T							
			322	3.15	26	U							
			1608	0603	FCC16	151				0.15	4,000	OD	50Vd.c. 35A
						201				0.2	1,800	ZD	
251	0.25	1,000				CD							
321	0.315	750				DD							
401	0.4	330				ED							
501	0.5	280				FD							
631	0.63	200				ID							
801	0.8	130				KD							
102	1.0	110				LD							
132	1.25	85				MD							
162	1.6	70				ND							
202	2.0	55				SD							
FHC16	252	2.5			45	TD	32Vd.c. 35A						
	322	3.15			26	UD							
	402	4.0			19	XD							
	502	5.0			14	YD							
2012	0805	FCC20	401	0.4	330	401	50Vd.c. 50A						
			501	0.5	270	501							
			631	0.63	190	631							
			801	0.8	130	801							
			102	1.0	100	102							
			132	1.25	80	132							
			162	1.6	65	162							
			202	2.0	55	202							
			252	2.5	40	252							
			FHC20	322	3.15	26		UD	32Vd.c. 50A				
				402	4.0	19		XD					
				502	5.0	14		YD					
		502		5.0	14	YD							
		3216	1206	FCC32	201	0.2	1,800	201	64Vd.c. 50A				
					251	0.25	1,000	251					
					321	0.315	750	321					
401	0.4				350	401							
501	0.5				295	501							
631	0.63				200	631							
801	0.8				140	801							
102	1.0				110	102							
132	1.25				85	132							
152	1.5				78	152							
162	1.6				75	162							
202	2.0				65	202							
252	2.5			45	252								
FHC32	322			3.15	26	UD	32Vd.c. 50A						
	402			4.0	19	XD							
	502			5.0	14	YD							
	502	5.0	14	YD									

●Performance Characteristics

Description	Requirements	Test Methods
Carrying capacity	No fusing	Carrying Current : Rated current × 110%, 70°C, 1h.
Temperature rise on the surface	75°C max.	Ambient temperature : 10°C~30°C Carrying Current : Rated current
Bend strength of the face plating	No visible damage	IEC 60127-4 Clause 8.3 1mm/s, amount of bend : 3 mm
Solderability	At least 95% of the terminal surface must be covered by new solder	IEC 60127-4 Clause 8.5 Be immersed into solder at 235°C for 2s.
Resistance to soldering heat	No visible damage. Meet electrical requirement	IEC 60127-4 Clause 8.7 Be immersed into solder at 260°C for 10s.
Endurance (rated load)	The voltage drop shall not have increased by more than 10% of the value measured before the test	IEC 60127-4 Clause 9.4 At normal condition. Rated current ×1.05, 1h"ON", a quarter"OFF",100 cycles. Rated current ×1.25, 1h.

Note. Please contact KAMAYA for special applications.

CHIP FUSES; RECTANGULAR TYPE

FCC FHC

●Ratings/Option Code : AB (Fast-Acting type)

Size		Style	Rated Current		Internal Resistance m ohm max.	Mark	Interrupting Rating	Time/Current Characteristics	Working Temperature Range °C						
Metric	Inch		Code	A											
1005	0402	FCC10	201	0.2	2,400	Z	30Vd.c. 35A	Rated Current×200% Opening Time 5s max.	- 55 ~ + 125						
			251	0.25	1,000	C									
			321	0.315	750	D									
			401	0.4	620	E									
			501	0.5	340	F									
			631	0.63	290	I									
			751	0.75	220	A									
			801	0.8	210	K									
			102	1.0	150	L									
			132	1.25	120	M									
			152	1.5	100	H									
			162	1.6	90	N									
			1005	0402	FHC10	202				2.0	55	S	24Vd.c. 35A	Rated Current×200% Opening Time 5s max.	- 55 ~ + 125
						252				2.5	40	T			
1608	0603	FCC16	201	0.2	3,200	ZB	36Vd.c. 35A	Rated Current×200% Opening Time 5s max.	- 55 ~ + 125						
			251	0.25	1,800	CB									
			321	0.315	1,000	DB									
			401	0.4	750	EB									
			501	0.5	330	FB									
			631	0.63	280	IB									
			751	0.75	210	AB									
			801	0.8	200	KB									
			102	1.0	130	LB									
			132	1.25	110	MB									
			152	1.5	95	HB									
			162	1.6	85	NB									
			1608	0603	FHC16	202				2.0	70	SB	32Vd.c. 35A	Rated Current×200% Opening Time 5s max.	- 55 ~ + 125
						252				2.5	40	TB			
2012	0805	FCC20	501	0.5	330	FB	50Vd.c. 50A	Rated Current×200% Opening Time 5s max.	- 55 ~ + 125						
			631	0.63	270	IB									
			801	0.8	190	KB									
			102	1.0	130	LB									
			132	1.25	100	MB									
			162	1.6	80	NB									
			2012	0805	FHC20	202				2.0	65	SB	32Vd.c. 50A	Rated Current×200% Opening Time 5s max.	- 55 ~ + 125
						252				2.5	40	TB			

●Rating/Option Code : LB (Fast Acting Type )

Size		Style	Rated Current		Internal Resistance m ohm max.	Mark	Interrupting Rating	Time/Current Characteristics	Working Temperature Range °C
Metric	Inch		Code	A					
1005	0402	FCC10	321	0.315	750	3	30Vd.c. 35A	Rated Current×200% Opening Time 5s max.	-55~+125

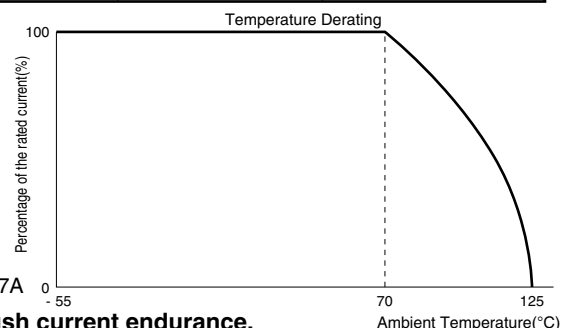
●Rating/Option Code : AA (Fast-Acting type)

Size		Style	Rated Current		Internal Resistance m ohm max.	Mark	Interrupting Rating	Time/Current Characteristics	Working Temperature Range °C						
Metric	Inch		Code	A											
2012	0805	FCC20	501	0.5	270	501	50Vd.c. 50A	Rated Current×200% Opening Time 120s max.	-55~+125						
			631	0.63	190	631									
			801	0.8	130	801									
			102	1.0	100	102									
			132	1.25	80	132									
			162	1.6	65	162									
			2012	0805	FCC20	202				2.0	55	202	50Vd.c. 50A	Rated Current×200% Opening Time 120s max.	-55~+125
						252				2.5	40	252			

●Recommended Derating for Rated Current

- Nominal Derating  
Option Code AD:Nominal Derating ≤ 80% of Rated Current  
Option Code AB, LB:Nominal Derating ≤ 70% of Rated Current
- Temperature Derating  
Please refer to the following graph regarding the current derating value for ambient temperature.

Ex.) If FCC16 102AB (Rated Current:1.0A) is used under ambient temperature 70°C,  
Kamaya recommends, less than the current value derated as below,  
Rated Current : 1.0A × (Nominal Derating : 70% × Temperature Derating : 100%) = 0.7A



**NOTE** >> Please contact Kamaya Sales Dept, if you need to confirm Inrush current endurance, Anti-pulse performance etc.  
We can provide Application Guide for FCC, FHC selection.

CHIP FUSES; RECTANGULAR TYPE

FCC FHC

●Time / Current Characteristics

