

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

*1 Cl or Br $\leq$ 900ppm, Cl+Br $\leq$ 1500ppm

*2 $\text{Sb}_2\text{O}_3 \leq 900\text{ppm}$

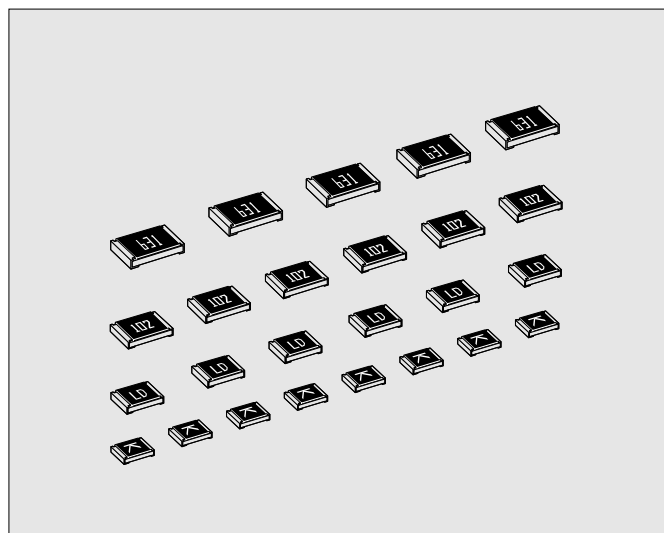
- Certified UL and c-UL.

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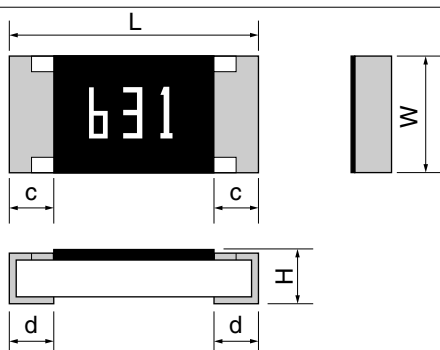


- ## 7. Major applications

- 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 ^{+0.15} _{-0.05}	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

Example

The diagram illustrates the structure of a part number **202ADTP**, broken down into its constituent parts and their specifications:

- Style:**
 - FCC:** Product Type (FCC, FHC)
 - 20:** Size (Code, Metric, Inch)

Code	Metric	Inch
10	1005	0402
16	1608	0603
20	2012	0805
32	3216	1206
- Rated Current:**
 - 202:** e.g. : 501=0.5A, 132=1.25A, 202=2.0A, 3-Digit
- Option Code:**
 - AD:** Clearing Time

Code	Clearing Time
AD	Within 5s under 250% of Rated Current
AB LB	Within 5s under 200% of Rated Current
AA	Within 120s under 200% of Rated Current
- TP:** * Packaging & Standard Qty. (Min.)

B	Bulk (Loose Package)	1,000pcs.	All Styles
PA	Press-Pocket Paper Tape (2mm pitch)	10,000pcs.	FCC10 FHC10
TP	Paper Tape	5,000pcs.	FCC16 FHC16 FCC20 FHC20 FCC32 FHC32
TH	Paper Tape (2mm pitch)	10,000pcs.	FCC10/LB

*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	30Vd.c. 35A			
			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				
			102	1.0	120	L				
		132	1.25	90	M					
		FHC10	162	1.6	55	N	24Vd.c. 35A			
			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	36Vd.c. 35A			
		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				
		252	2.5	45	TD	32Vd.c. 35A				
		FHC16	322	3.15	26	UD	24Vd.c. 35A			
402	4.0		19	XD						
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	24Vd.c. 50A			
			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				
FHC32	252	2.5			45	252	32Vd.c. 50A			
	322	3.15			26	UD				
			402	4.0	19	XD				
			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				
FHC10	202	2.0	55	S	24Vd.c. 35A				
	252	2.5	40	T					
1608	0603	FCC16	201	0.2	3,200	ZB	36Vd.c. 35A		
			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				
202	2.0	70	SB						
FHC16	252	2.5	40	TB	32Vd.c. 35A				
2012	0805	FCC20	501	0.5	330	FB	50Vd.c. 50A		
			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			
			202	2.0	65	SB			
		FHC20	252	2.5	40	TB	32Vd.c. 50A		

●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)

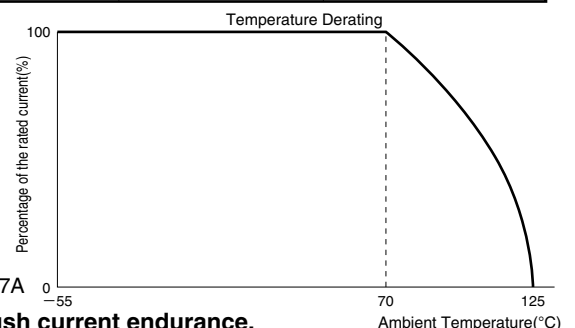
Size		Style	Rated Current		Internal Resistance m ohm max.	Mark	Interrupting Rating	Time/Current Characteristics	Working Temperature Range °C
Metric	Inch		Code	A					
2012	0805	FCC20	501	0.5	270	501	50Vd.c. 50A	Rated Current×200% Opening Time 120s max.	-55~+125
			631	0.63	190	631			
			801	0.8	130	801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

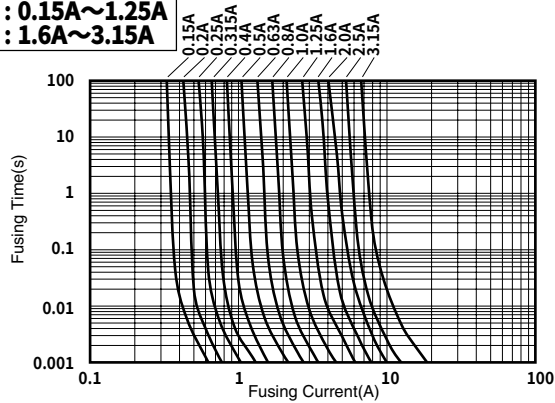


CHIP FUSES; RECTANGULAR TYPE

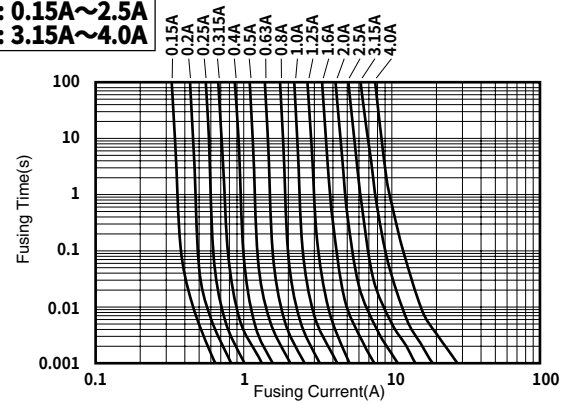
FCC FHC

●Time / Current Characteristics

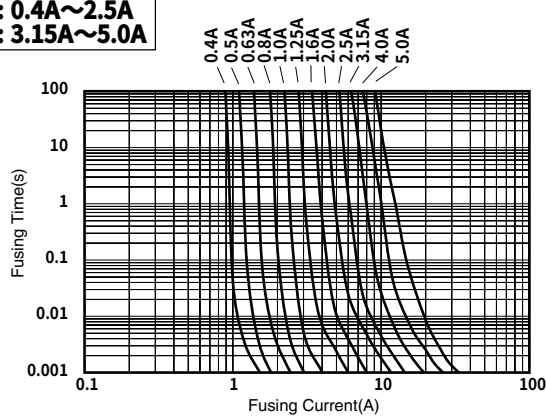
FCC10 AD : 0.15A~1.25A
FHC10 AD : 1.6A~3.15A



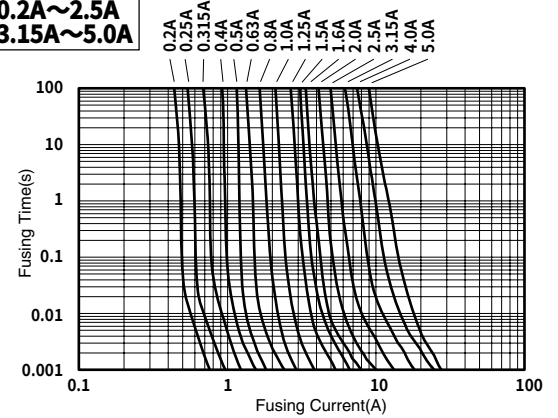
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FHC16 AD : 3.15A~4.0A



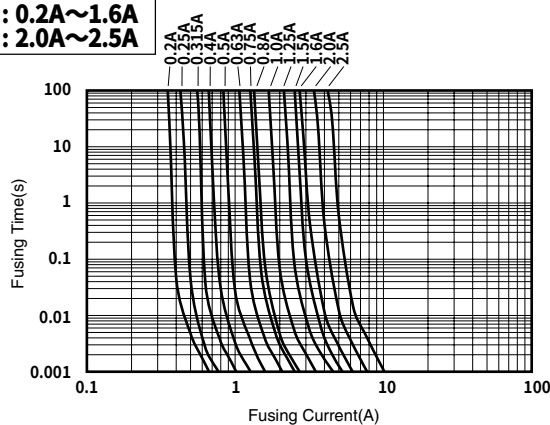
FCC20 AD : 0.4A~2.5A
FHC20 AD : 3.15A~5.0A



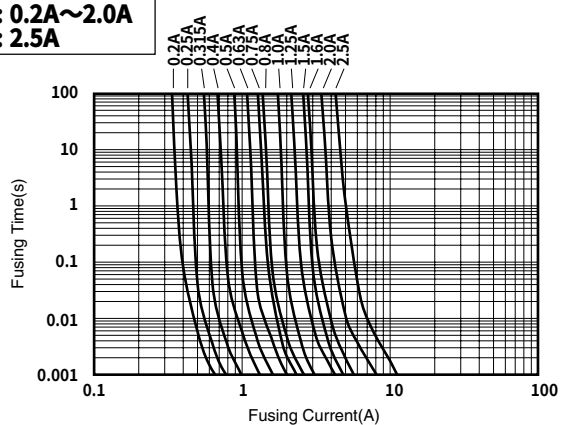
FCC32 AD : 0.2A~2.5A
FHC32 AD : 3.15A~5.0A



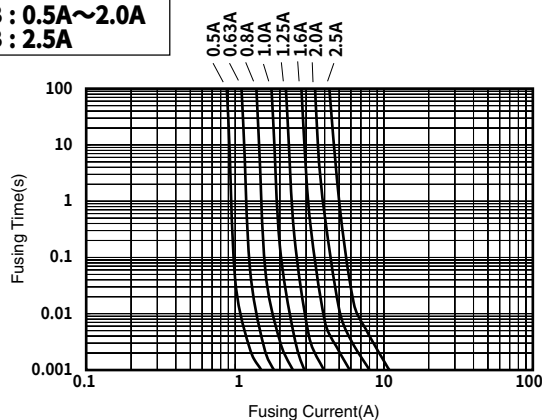
FCC10 AB : 0.2A~1.6A
FHC10 AB : 2.0A~2.5A



FCC16 AB : 0.2A~2.0A
FHC16 AB : 2.5A



FCC20 AB : 0.5A~2.0A
FHC20 AB : 2.5A



FCC10 LB:0.315A

