



Alpha Therm GmbH: Ihr Offizieller Vertriebskanal für SETsafe/SETfuse

Die Alpha Therm GmbH mit Sitz in Plankstadt, Deutschland, ist stolz darauf, der offizielle Vertriebskanal für SETsafe/SETfuse in Deutschland, Europa und weltweit zu sein. Unsere langjährige Partnerschaft mit SETsafe/SETfuse basiert auf einem erfolgreichen und vertrauensvollen Geschäftsmodell.

Wir repräsentieren SETsafe/SETfuse auf internationalen Messen wie der Electronica, InterSolar, ees und vielen weiteren. Von kleinen Standardsicherungen bis hin zu komplexen, kundenspezifischen Automotive-Projekten – wir haben alles erfolgreich umgesetzt. Mit unserer umfassenden Lagerhaltung in Deutschland gewährleisten wir schnelle und zuverlässige Lieferungen.

Kontaktieren Sie uns! Unser kompetentes Team berät Sie ausführlich und findet die optimale Lösung für Ihre Anforderungen. Vertrauen Sie auf Alpha Therm GmbH und SETsafe/SETfuse – Ihre Partner für innovative Sicherheitslösungen.

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Alpha Therm GmbH: Your Official Distribution Channel for SETsafe/SETfuse

Alpha Therm GmbH, based in Plankstadt, Germany, is proud to be the official distribution channel for SETsafe/SETfuse in Germany, Europe, and worldwide. Our long-standing partnership with SETsafe/SETfuse is built on a successful and trustworthy business model.

We represent SETsafe/SETfuse at international trade fairs such as Electronica, InterSolar, ees, and many more. From small standard fuses to complex, customized automotive projects, we have successfully handled it all. With our extensive warehousing in Germany, we ensure fast and reliable deliveries.

Contact us today! Our competent team will provide you with detailed advice and find the optimal solution for your requirements. Trust Alpha Therm GmbH and SETsafe/SETfuse – your partners for innovative safety solutions.

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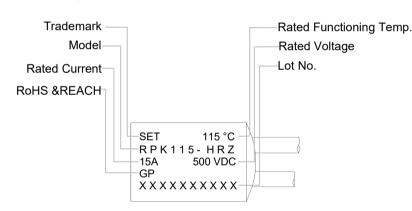
Description

The Direct Current Thermal-Link Alloy Type (DC-ATCO) is a thermal-link that utilizes low melting point alloys, known as the thermal element, which fuse when heated to a specific fusing temperature. This allows for controlled circuit disconnection. The DC-ATCO is composed of various components, including a case, the low melting point alloys (thermal element), flux resin, electrode leads, sealant and stranded conductor.

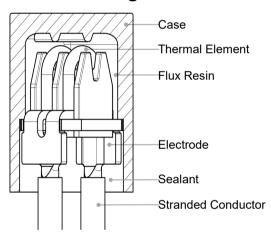
The DC-ATCO is widely employed for over-temperature protection in electrical equipment and electric vehicles. Typically, the low melting point alloys (thermal element) are connected in series between two electrode pins. When the temperature reaches the predetermined fusing temperature of the DC-ATCO, the low melting point alloys (thermal element) melt and swiftly retract to the ends of the two pins, facilitated by the flux resin. This effectively disconnects the circuit.

The SETsafe | SETfuse Direct Current Thermal-Link (Alloy Type) is available in axial and radial shapes, with a rated functioning temperature ranging from 102 °C to 150 °C, rated current 15 A, rated voltage 500 VDC. It is compliant with RoHS and REACH regulations.

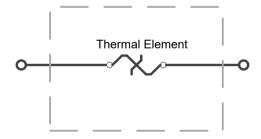
Marking



Structure Diagram



Product Schematic



Features

- 0 to 500 VDC Operating Voltage
- High Accuracy of Functioning Temp.
- Ceramic Case
- Non-Resettable
- RoHS & REACH Compliant

Applications

- Battery Cooling Heaters
- Air-Conditioners Heaters
- Pre-charged Resistors
- High Power LED

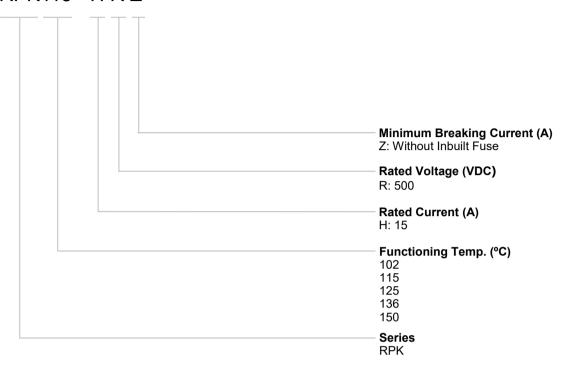
Customization

- Rated Functioning Temp.
- Stranded Conductor Size

RPK Series

Part Number System

RPK115 - H R Z

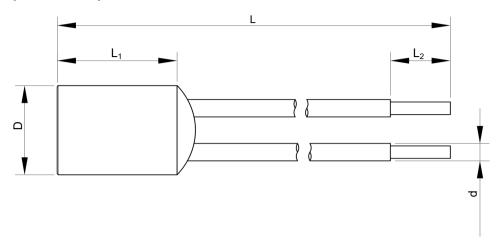


Reminder:

Part numbering system in the datasheet is only for selecting correct parameter and product features. Before placing order, please contact us for specifications and use the part number and product code in the specifications to place order to ensure the part is correct. Product code is the unique indentification.

RPK Series

Dimensions (Unit: mm)



L	L ₁	L ₂	D	d
116.0 ± 5.0	16.0 ± 1.0	10.0 ± 1.0	12.8 ± 0.5	AWG14

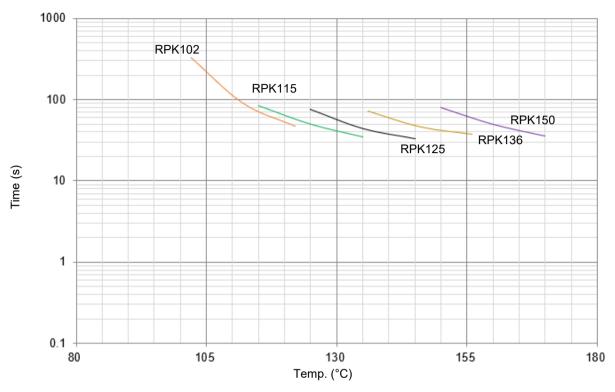
Specifications

) (Tf) °C		Model	<i>I</i> _r (A)	U _r	Rated Functioning Temp.	τ _h	T _m	RoHS REACH
Temp.	150	RPK150-HRZ	15	500	146 ± 3	100	250	•
ning	136	RPK136-HRZ	15	500	131 ± 3	70	250	•
Rated Functioning	125	RPK125-HRZ	15	500	122 ± 3	85	250	•
ited Fi	115	RPK115-HRZ	15	500	112 ± 3	65	250	•
R	102	RPK102-HRZ	15	500	99 +5	65	250	•

1. RoHS & REACH Comply.

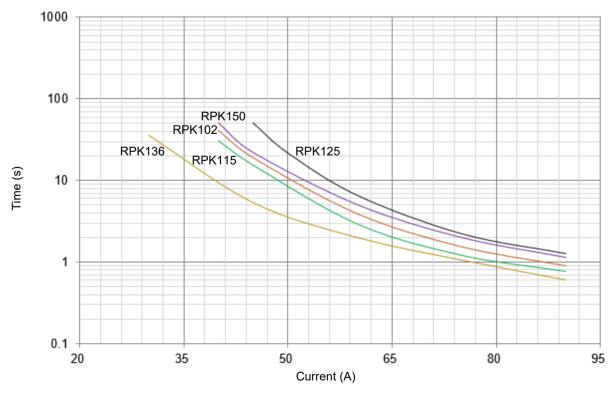
Temp.-Time Curve

The functioning temperature time curve of Alloy Thermal-Link in different Temp. oil bath (For reference only).



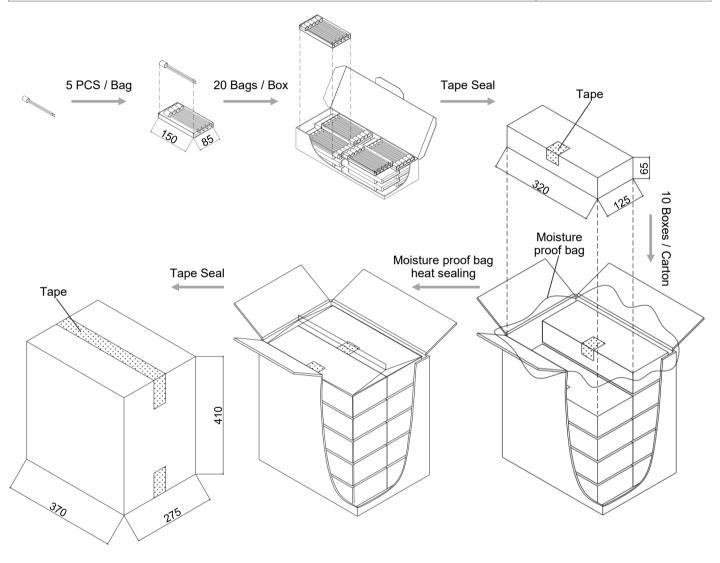
Current-Time Curve

This is an illustrated curve, describing the opening time at Multi-times rated current in the condition of the room Temp. 25 °C (For reference only).



Packaging Information

Item	PE Bag	Вох	Carton
Dimensions (mm)	150 x 85	320 x 125 x 65	370 x 275 x 410
Quantity (PCS)	5	100	1000
Gross Weight (kg)			9 ± 10%







RPK Series

Glossary

Item	Description
DC-ATCO	DC-Alloy Thermal-Link DC-Alloy type Thermal-Link, Alloy is thermal element.
T _f	Rated Functioning Temp. The temperature of the Thermal-Link which causes it to change the state of conductivity with a detection current up to 10 mA as the only load. Tolerance: T_f (0 / -10) °C (GB 9816, EN 60691, K60691). Tolerance: $T_f \pm 7$ °C (J60691).
Fusing Temp.	Fusing Temp. The temperature of the Alloy Thermal-Link which causes it to change its state of conductivity is measured with silicone oil bath in which the temperature is increased at the rate of 0.5 °C to 1 °C / minute, with a detection current up to 10 mA as the only load.
T _h	Holding Temp. The Maximum temperature at which a Thermal-Link will not change its state of conductivity when conducting rated current for 168 hours.
T _m	Maximum Temp. Limit The temperature of the Thermal-Link stated by the manufacturer, up to which the mechanical and electrical properties of the Thermal-Link having changed its state of conductivity, will not be impaired for a given time.
J _{min}	Minimum Breaking Current The minimum current that Fuse requires after the Alloy of Thermal-Link opens in the circuit.
I _r	Rated Current The current used to classify a Thermal-Link, which is the maximum current that Thermal-Link allows to carry and is able to cut off the circuit safely.
U r	Rated Voltage The voltage used to classify a Thermal-Link, which is the maximum voltage that Thermal-link allows to carry and is able to cut off the circuit safely.



ATTENTION

Usage

- 1. When atmosphere pressure is from 80 kPa to 106 kPa, the related altitude shall be from -500 m to 2000 m.
- 2. Operating voltage less than rated voltage of DC-ATCO, operating current less than rated current of DC-ATCO.
- 3. Do not touch the DC-ATCO body or lead wires directly when power is on, to avoid burn or electric shock.

Replacement

DC-ATCO is a non-repairable product. For safety sake, it shall be replaced by an equivalent DC-ATCO from the same manufacturer, and mounted in the same way.

Storage

Do not store the DC-ATCO at the high temp., high humidity or corrosive gas environment. The product shall be stored at 25 ± 5 °C and ≤ 70% RH, avoid direct sunlight and shall use them up within 1 year after receiving the goods.

Installation

Make Sure the Temp, of Installation Position

- 1. It is recommended that a dummy DC-ATCO with inbuilt thermo-couple shall be used to determine the proper temp.
- 2. he terminal product should be tested to ensure that potential abnormal conditions do not cause ambient temp. to exceed the $T_{\rm m}$ of the DC-ATCO.
- 3. Mount the DC-ATCO at the location where temp. rises evenly.

Installation position of mechanical performance requirements

- 1. Ensure that the lead wire is long enough, and avoid actions such as press, tensile or twist.
- 2. The seal or body of DC-ATCO must not be damaged, burned or over heated.

RPK Series

Mechanical Connection

Riveting

- 1. Choose small resistivity riveting material and be riveted.
- 2. A flexible lead or lead with low resistance should be used to rivet the DC-ATCO.
- 3. Contact resistance should be minimal, Large contact resistance will lead to higher temp., DC-ATCO Functioning in advance.

Soldering

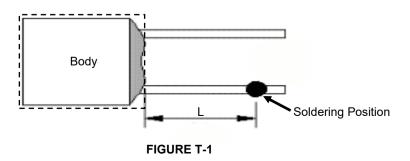
Hand-Soldering

- 1. Soldering should be carried out according to Table T-1.
- 2. The thermal element of DC-ATCO is thermal element with low melting point, which is jointed with DC-ATCO lead wires. Improper soldering operation (too high soldering temp., too long soldering time, too short lead wire etc.) may transfer more heat to the thermal element and DC-ATCO may open in advance.
- 3. When soldering conditions are more severe than those listed in Table T-1, a heat sink fixture should be used between soldering point and DC-ATCO body.
- 4. When soldering, please do not pull / push or twist DC-ATCO body or lead wires.
- 5. After soldering, let it naturally cool for longer than 20 seconds. During cooling, never move the DC-ATCO body or lead wires.

TABLE T-1 Hand-Soldering Time

Dated		Max. Allowable		Time for Different Le (Fig.H-1)	ad Wire Ler	ngth	
Functioning Temp.		Time		Time		Time	Max. Soldering Temp.
(T_{f})	Length	Tinned Copper Wire	Length	Tinned Copper Wire	Length	Tinned Copper Wire	тетір.
(°C)	(mm)	(s)	(mm)	(s)	(mm)	(s)	(°C)
76 ~ 101	10	1 ^a	20	2	30	3	
Temp. (T _f)	10	1 ^a	20	2	30	3	
Functioning Temp. (T _f) (°C) 76 ~ 101 102 ~ 115 116 ~ 135 136 ~ 150	10	1 ^a	20	3	30	5	400
136 ~ 150	10	3	20	5	30	5	
151 ~ 230	10	4	20	6	30	7	

a: Auxiliary heat sink fixture is required to avoid DC-ATCO cutting off unexpectedly.





RPK Series

DC-ATCODirect Current Thermal-Link (Alloy Type)

Lead Wire Forming

- 1. If lead wire has to be bent, please pay attention to the distance between body and bending point. Refer to Table T-3.
- When bending leads, please use pincher or similar tools to fix the product as shown in Figure T-2 to avoid damaging the product.
- 3. During forming and mounting, lead wire should not be cut, nicked, bent sharply, to avoid breaking the product.
- Tangential forces on the leads must be avoided (i.e. pushing or pulling on the leads at angle to DC-ATCO body) as such forces may damage the seal of DC-ATCO.
- 5. Bending radius R: ≥ 15 d, as shown in Figure T-2.

TABLE T-3 Distance between Body and Bending Point

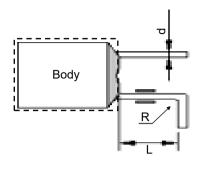


FIGURE T-2

	d	(mm)	< 1.0	1.0 to 1.2	> 1.2
Lead Wire	L	(mm)	≥ 3	≥ 5	≥ 10

	4									,	^
	230	0	0	0	0	0	0	0	0	0	
	221	0	0							0	
	205	0	0							0	
	200	0	0							0	
O	187	TGH187-HVS^	ASL187A-LSF^	RSK187A-KSS [^]	RVH187-HSF [^]	ARL187-LRA^			RQF187-FQS^	0	
°	160	0									
۲	150	TGH150-HVS^	ASL150A-LSF^	RSK150A-KSS [^]	RVH150-HSF [^]	ARL150-LRA^	RPK150-HRZ [^]	TG150C-HQZ [^]	RQF150-FQS^	TG150C-JPZ^	
	145	0	0								
n d	139	0	0								
<u>6</u>	136	TGH136-HVS^	ASL136A-LSF^	RSK136A-KSS [^]	RVH136-HSF [^]	ARL136-LRA^	RPK136-HRZ [^]	TG136C-HQZ [^]	RQF136-FQS^	TG136C-JPZ^	
_ 	135	0	0							0	3
<u>2</u> .	133	0	0							0	Model
Rated Functioning Temp. (7,) °C	130	TGH130-HVS^			RVH130-HSF [^]				RQF130-FQS^	0	<u>e</u>
ij	125	TGH125-HVS^	ASL125A-LSF^	RSK125A-KSS [^]	RVH125-HSF [^]	ARL125-LRA^	RPK125-HRZ^	TG125C-HQZ [^]	RQF125-FQS^	TG125C-JPZ^	
Ĕ	123	0	0							0	
屲	120	0	0								
þ	115	TGH115-HVS^	ASL115A-LSF [^]	RSK115A-KSS [^]	RVH115-HSF [^]	ARL115-LRA^	RPK115-HRZ [^]	TG115C-HQZ [^]	RQF115-FQS^	TG115C-JPZ^	
ate	105	0	0							0	
ď	102	TGH102-HVS^	ASL102A-LSF^	RSK102A-KSS [^]	RVH102-HSF [^]	ARL102-LRA^	RPK102-HRZ [^]	TG102C-HQZ [^]	RQF102-FQS^	TG102C-JPZ^	
	97	0	0							0	
	93	0	0							0	
	86	0	0			ARL86-LRA^		TG86C-HQZ^	RQF86-FQS^	0	
	76	0	0	0	0	0	0	0	0	0	
r (<i>I</i> Rated C	A) current	15	30	25	15	30	15	15	10	20	
U _r (VI Rated V	r (A) Rated Current Ur (VDC)^ Rated Voltage	850		600		5	00	4	50	400	
U _r (V)	AC)* ′oltage	0		0			0		o T	0	
Proc Struc	Ur (VAC)* Rated Voltage Product Structure							0	0		
			П	ПД	д Д		ШШ		Д		
		Axial	Shape	Radial	Shape	Axial Shape	Radial Shape	Axial Shape	Radial Shape	Axial Shape	

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Ur (VAC)* Rated Voltage Ur (VAC)* Rated Voltage Product Structure												
	60	00	0	0	690	50	00	0)	
L(VDC)^			400		200			180		12	25	
76	20	15	10	15	15	10	5	60	20	15 16	10	25
		1 G00C-H3Z	KPF00-FPF"									
97 93 86 76	0	TG86C-HSZ*	RPF86-FPF^									
	0											
102	TG102C-JSZ*							ALP102-PLZ^	QD102^	PD102^	TD102^	SD102^
187 160 150 145 139 136 135 133 130 125 123 120 115 105	0							0	0	0	0	0
115	TG115C-JSZ*			ALP115-HLZ^					QD115^	PD115^	TD115^	SD115^
120	0											
123	0											
125	TG125C-JSZ*				HN125^*	HP125^*	HS125^*	ALP125-PLZ^	QD125^	PD125^	TD125^	SD125^
130	0								QD130^	PD130^	TD130^	SD130^
133	0											
135	0											
136	TG136C-JSZ*				HN136^*	HP136^*	HS136^*		QD136^	PD136^	TD136^	SD136^
139	0											
145	0				0	0	0		QD 130	0	0	0
150	TG150C-JSZ*				HN150^*	HP150^*	HS150^*		QD150^	PD150^	TD150^	SD150^
187	0											
200	0											
205	0											
221	0											
230	0											

RPK Series

Ir (V Rated C Ur (VI Rated V Ur (V. Rated V	A) Current DC)^ /oltage	400	25	12 250	20 400	20 300	250	100	125	100	125		15 16 000	50	
Rated	115 105 102 97 93	Q115^* Q102^*	Q115*	Q115*	P115^* P102^* O	P115* P102*	P115* P102*	TB115-UHZ^ TB102-UHZ^	TB115-UJZ* TB102-UJZ*	TS115-RHZ [^] TS102-RHZ [^]	TS115-RJZ* TS102-RJZ*	\$115^ \$102^	T115^ T102^		
Rated Functioning Temp. (T_i) $^\circ$ C	130 125 123 120	Q125^*			P125^*			TB130-UHZ^ TB125-UHZ^	TB130-UJZ* TB125-UJZ*	TS125-RHZ^	TS125-RJZ*				_
ning	135 133	0 0						O TD420 HHZA	O TD420 LL17*						Model
Temp	139 136	Q136^*	Q136*	Q136*	P136^*	P136*	P136*	TB136-UHZ [^]	TB136-UJZ*	TS136-RHZ [^]	TS136-RJZ*	S136^	T136^		_
). (T,	150 145	0										S150^	T150^		
၁့ (200 187 160	0													
	230 221 205	0												ADN230B-NEZ	

220		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0		0	0	
230 221	R31^*		U31^*						C31^*					B31^*		H31^*		V31*					
205	R31 [/] *								C31/**								V31^* V32^*	V31* V32*			X31*	K31*	
200	K32**		U32^*						0					B32^*		H32^*	0	0			X32*	K32*	
40=	0																				X17^*	K17^*	
Yated Functioning Temps (77) 187 187 187 187 189 189 189 189 189 189 189 189 189 189	R16^*		U16^*						C16^*							H16^*	V16^*				X16^*	K16^*	F16*
150	R7^*		U7^*						0							0	0				X7*	K7*	F7*
145	R6^*		U6^*	C6^								X6^							K6^	F6^	X6*	K6*	F6*
139	0	CR13^	0	0	M13^	C13^				SF13^	V13^	0							0	F13^	0	0	F13*
136	0	0			0	0				0	0	X9^							K9^	0	X9*	K9*	0
135	R5^*		U5^*									0							0		X5*	K5*	
133	0		0								V8^		SF8^							F8^	X8*	K8*	F8*
130	R4^*		U4^*								V4^		SF4^							F4^	X4*	K4*	F4*
125	R3^*		U3^*								0					H3^*					X3^*	K3^*	F3*
123	0																						
120	0																						
115	R2^*		U2^*				C2^				V2^		SF2^							F2^	X2^*	K2^*	F2*
105	0																						
102	R1^*		U1^*																	F1^	X1^*	K1^*	F1*
97	0																						
93	0																						
86	R18^*		U18^*					C18^							V18^					F18^	X18^*	K18^*	F18*
76(R0^*	0	U0^*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	X0*	K0*	F0*
76 (A) Rated Current Ur(VDC)^		5	1	0	9	8.5	8	6		5		4		3	2.5	2		I 	4		3	2	1
ated Voltage	ļ											60											
J _r (VAC)* ated Voltage	250	0	250			0			250		0		2	50	0	2	50	125		0		250	
Or (VAC)* Rated Voltage Product Structure									— (

	4															4	1
	230	0	0	0	0	0	0	0	0	0	0	0	ADN230B-NDZ^	ADN230B-PDZ^	0	ADN230B-QBZ^	^
	221	XG31*	KG31*			C31*		B31*		H31*			0		ADN205B-NDZ^		
	205	XG32*	KG32*			C33*		B32*		H32*			0				
	200	0											0				
	187	0											0				
	160	XG16*	KG16*				B16*						0				
	150	XG7*	KG7*	C7^	C7*		B7^*		H7^*		V7^*		0				
	145	XG6*	KG6*	C6^	C6*		B6^*		H6^*		V6^*		0				
•	139	0		C13^	C13*		B13^*		H13^*		V13^*		0				
	136	XG9*	KG9*	C9^	C9*		B9^*		H9^*		V9^*		0				
187 160 150 145 139 136 135 133 130 125 123 120 115 105 102 97 93 86 76 1, (VDC)^ ted Voltage	135	XG5*	KG5*	C5^	C5*		B5^*		H5^*		V5^*		0				
	133	XG8*	KG8*	C8^	C8*		B8^*		H8^*		V8^*		0				
	130	XG4*	KG4*	C4^	C4*		B4^*		H4^*		V4^*		0				
	125	XG3^*	KG3^*	C3^	C3*		B3^*				V3^*		0				
	123	0											0				
	120	0															
	115	XG2^*	KG2^*	C2^	C2*		B2^*		H2^*		V2^*		0				
	105	0											0				
	102	XG1^*	KG1^*		C1^*	C1*	B1^*	B1*	H1^*	H1*	V1^*	V1*	0				
	97	0				C21^*		B21^*		H21^*		V21^*	0				
	93	0											0				
	86	XG18^*	KG18^*		C18^*	C18*	B18^*	B18*	H18^*	H18*	V18^*	V18*	0				
	XG0*	KG0*	0	C0*	0	B0^*	B0*	H0^*	H0*	V0^*	V0*	0	0	0	0	_	
		3	2	7		5	3			2		1	50	55	50	80	
		6	0					50					49	4	18	24	
(VA	C)* Itage	2	50		250	125	250	125	250	125	250	125					
Product tructure					C	→ ः—(D—~⊏									
		Radial	Ц									Axial Sha					