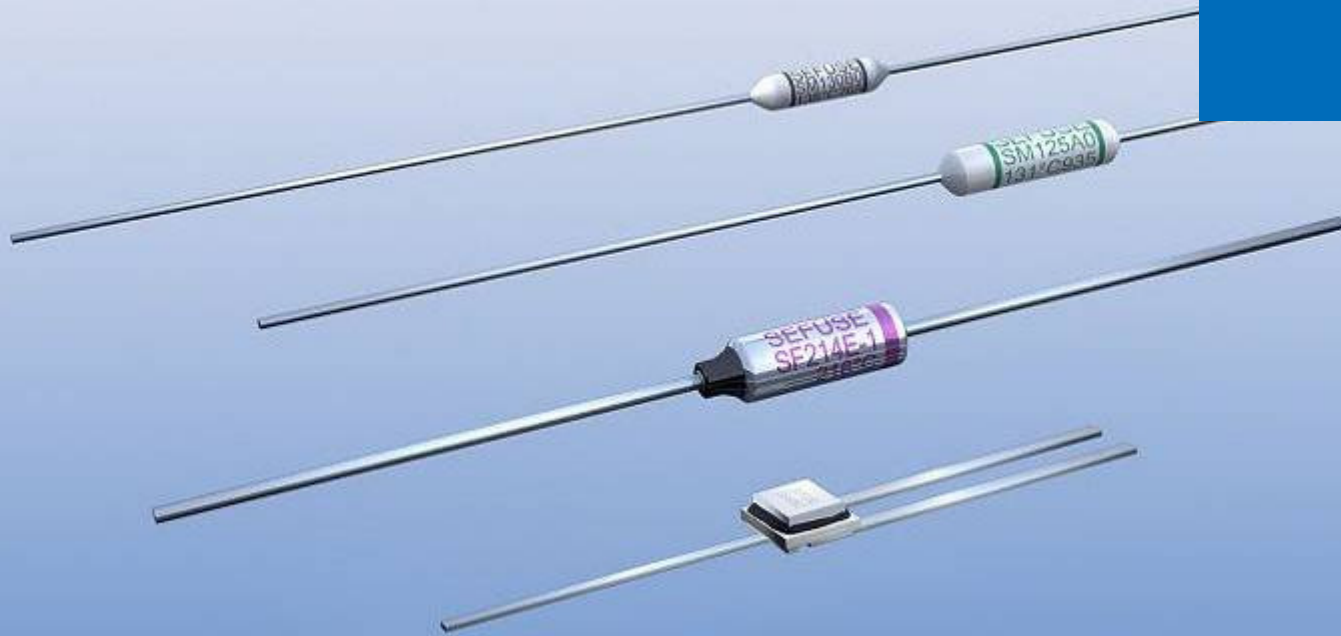


NEC/SCHOTT



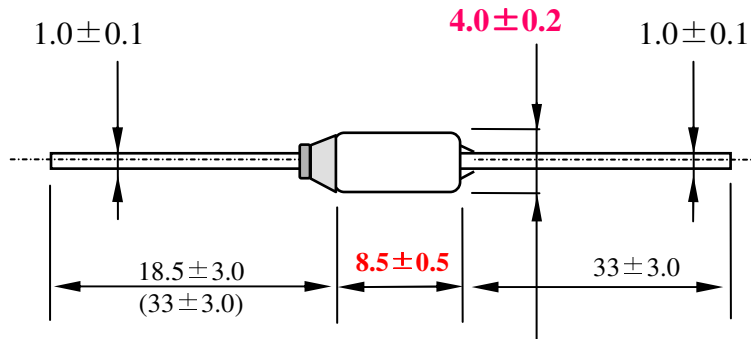
Thermal Cutoff SEFUSE[®]
~New Product SF(H)-R Series~

NEC SCHOTT Components Corporation
TF Division
Dec/2012

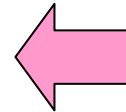
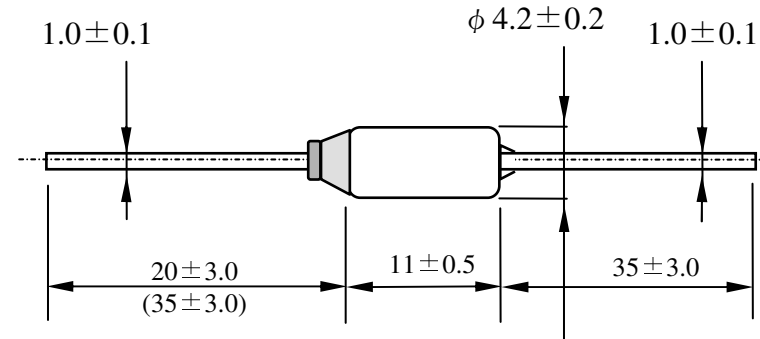
NEC/SCHOTT

New product < SF-R series > : R = Reliable

SF(H)-R Series



SF(H)-E Series

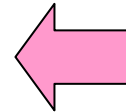
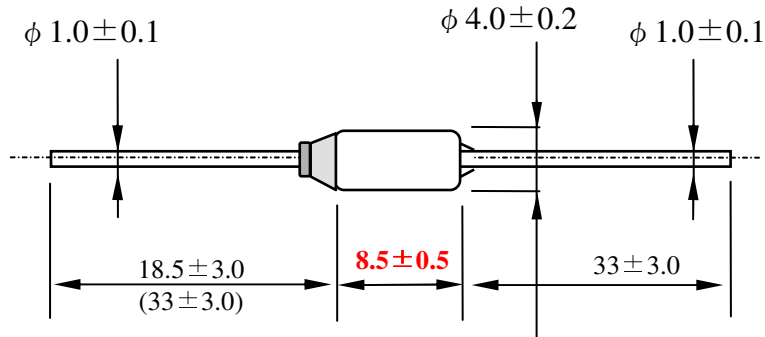


	Feature	Measure
Higher Reliable Design	Higher Tm rating	New design of parts
	Better interrupting load ability	
	Low internal resistance (lower self heating)	Change the material of fuse-body (copper alloy → pure copper)
	Quicker responsiveness	Smaller fuse-body
Eco Friendly Design	Meet for WEEE(RoHS) and REACH	New pellet material for Tf:94degC (SF91E → SF90R)

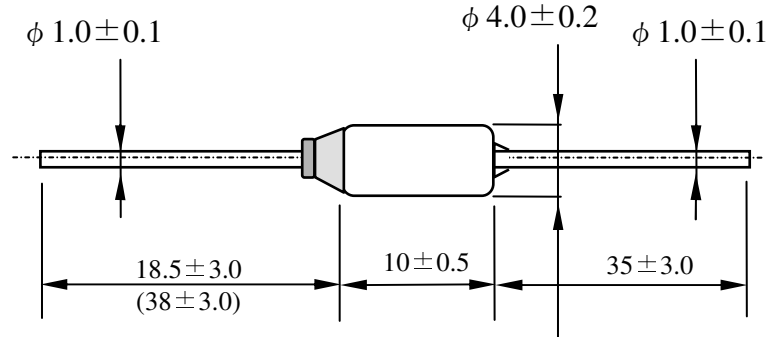
* The information in this document is subject to change without notice.

New product < SF-R series > : R = Reliable

SF(H)-R Series



SF(H)-L Series



	Feature	Measure
Higher Reliable Design	Higher Tm rating	New design of parts
	Better interrupting load ability	
	Low internal resistance (lower self heating)	Change the material of fuse-body (copper alloy → pure copper) Smaller fuse-body
Eco Friendly Design	Meet for WEEE(RoHS) and REACH	Already done

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Comparison of the Maximum Temperature Limit (°C)

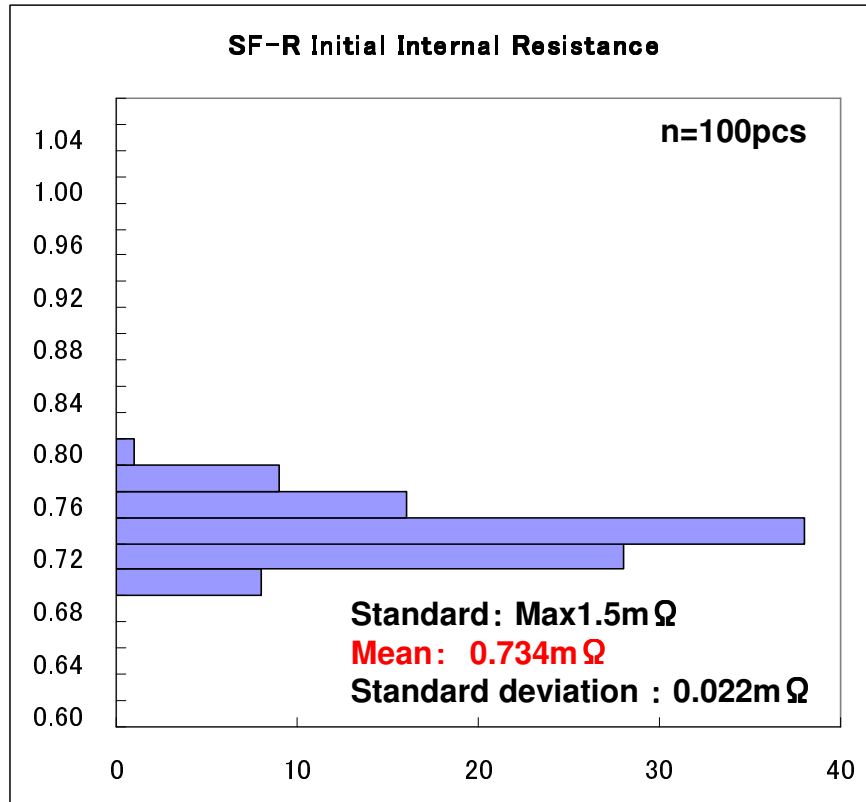
Type	Rated Functioning Temperature Tf(°C)	Maximum Temperature Limit Tm (°C)	
		R Series	E/L Series
SF70**	73	165	←+15K 150
SF76**	77	165	←+15K 150
SF81**	84	165	New
SF90**	94	165	New
SF94**	99	165	New
SF113**	113	165	←+5K 160
SF119**	121	165	←+15K 150
SF129**	133	175	←+16K 159
SF139**	142	175	←+16K 159
SF144**	144	210	New
SF150**	152	210	New
SF167**	167	250	New
SF184**	184	250	←+61K 189
SF188**	192	375	375
SF214**	216	375	375
SF229**	229	380	New
SF240**	240	380	←+5K 375

Type	Rated Functioning Temperature Tf(°C)	Maximum Temperature Limit Tm (°C)	
		R Series	E/L Series
SFH106**	110	400	380
SFH109**	113	400	380
SFH113**	117	400	380
SFH117**	121	400	380
SFH124**	129	400	←all +20K 380
SFH129**	134	400	380
SFH134**	139	400	380
SFH152**	157	400	380
SFH162**	167	400	380
SFH172**	176	400	380

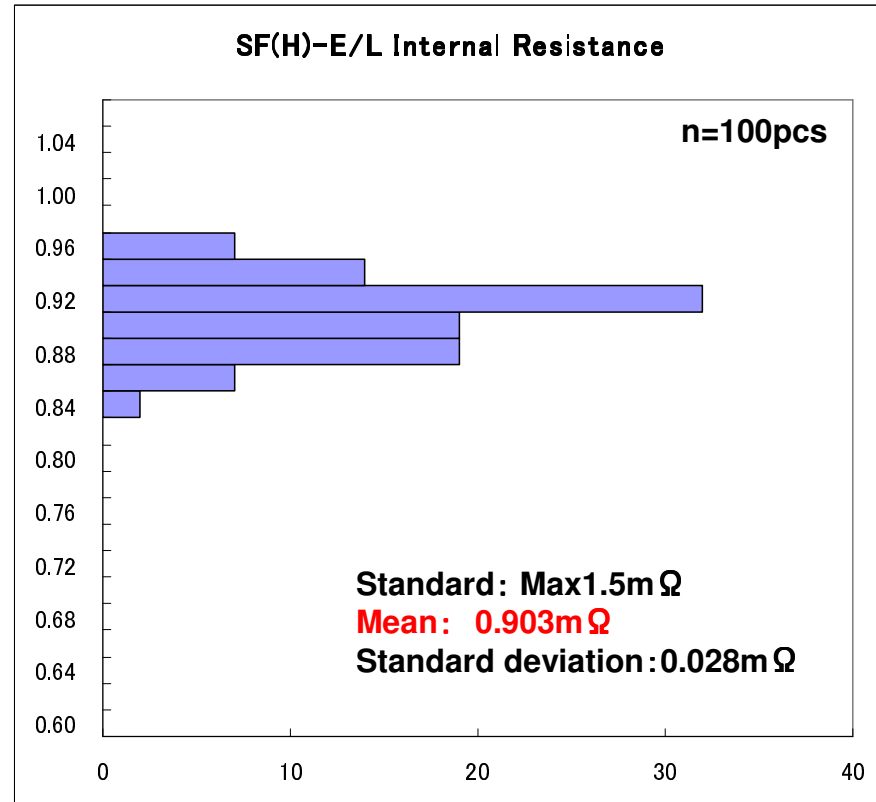
* The information in this document is subject to change without notice.

Comparison of the Initial Internal Resistance

SF(H)-R

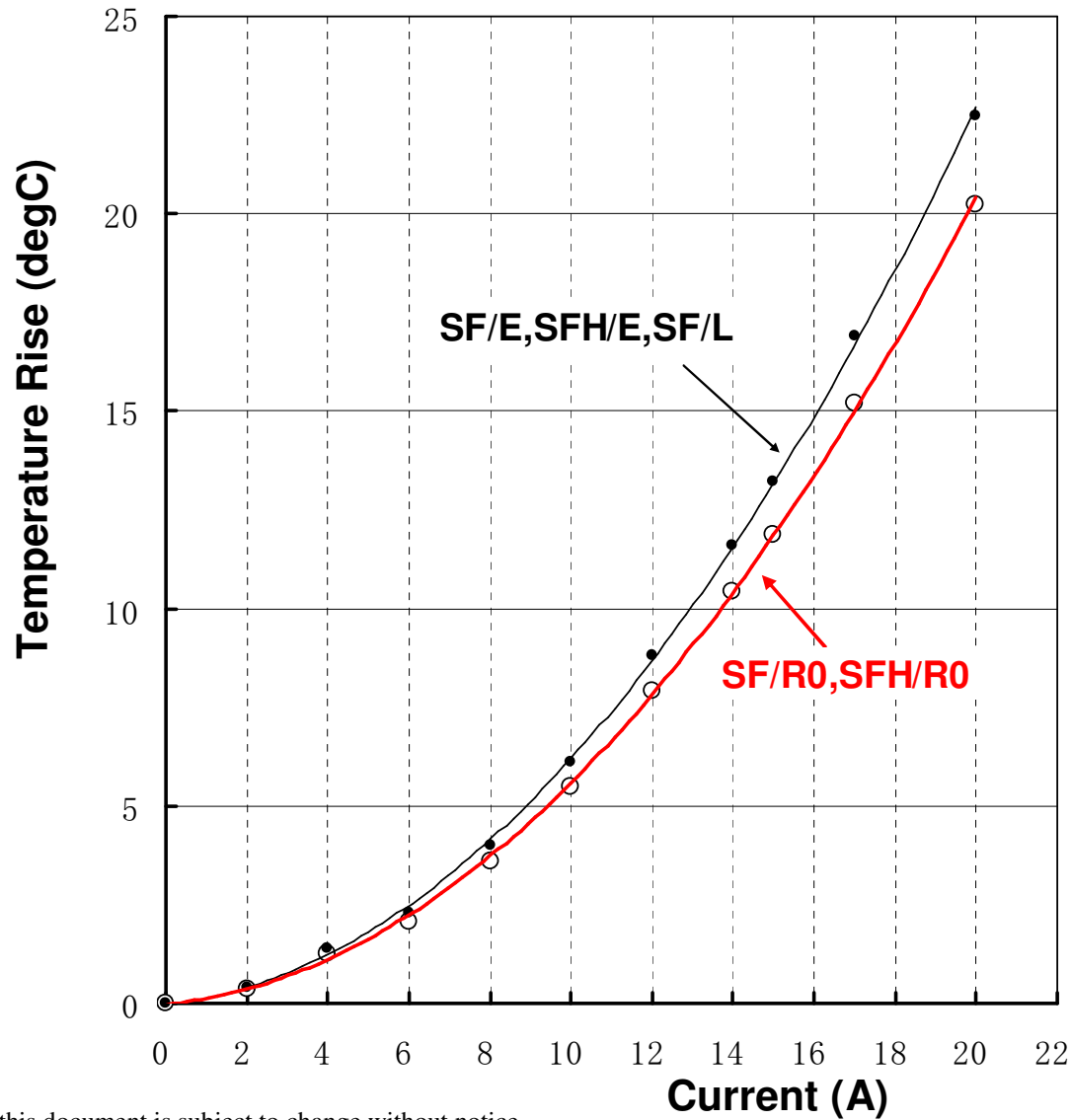


SF(H)-E / L



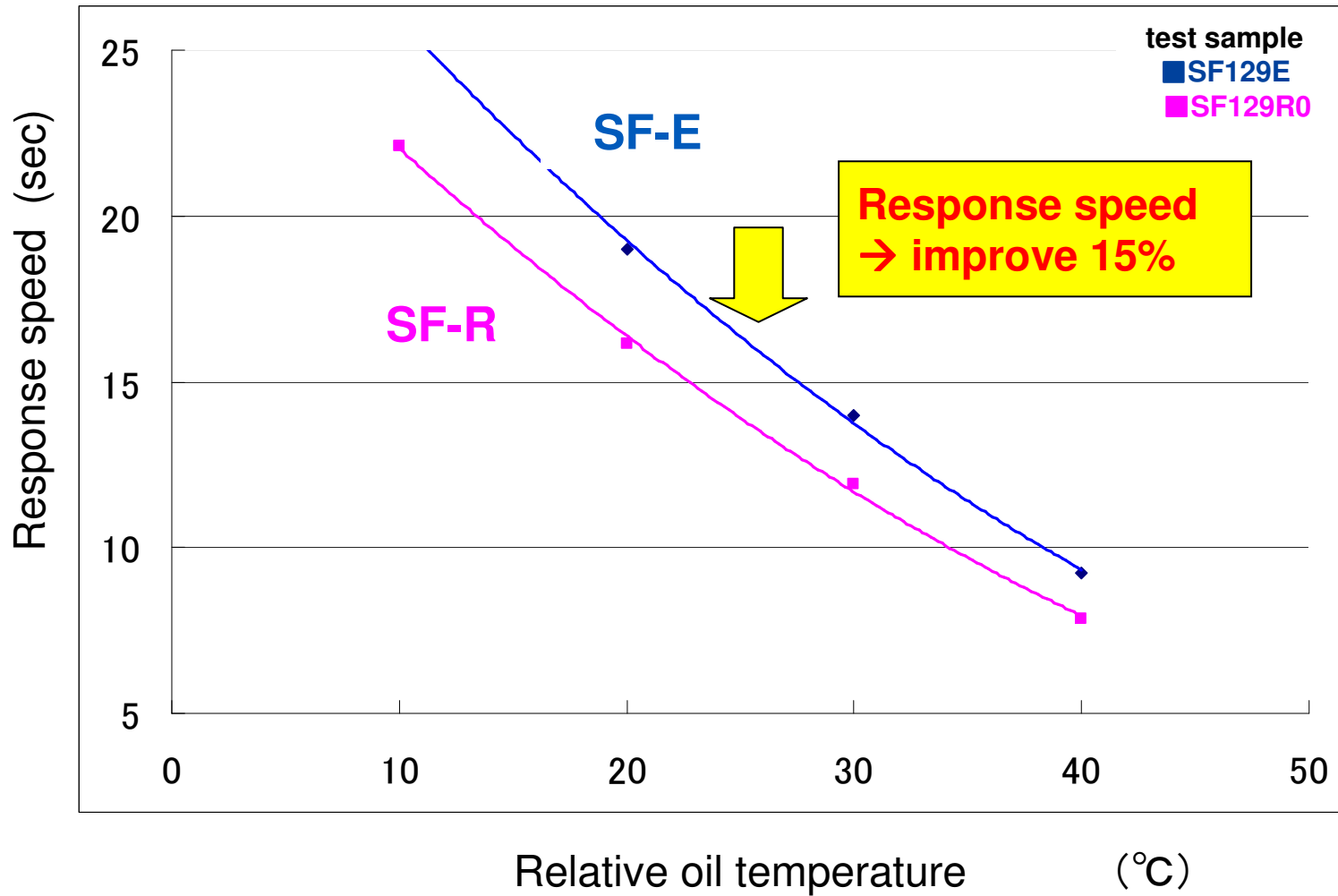
* The information in this document is subject to change without notice.

Comparison of the Current Load Temperature Rise (reference)



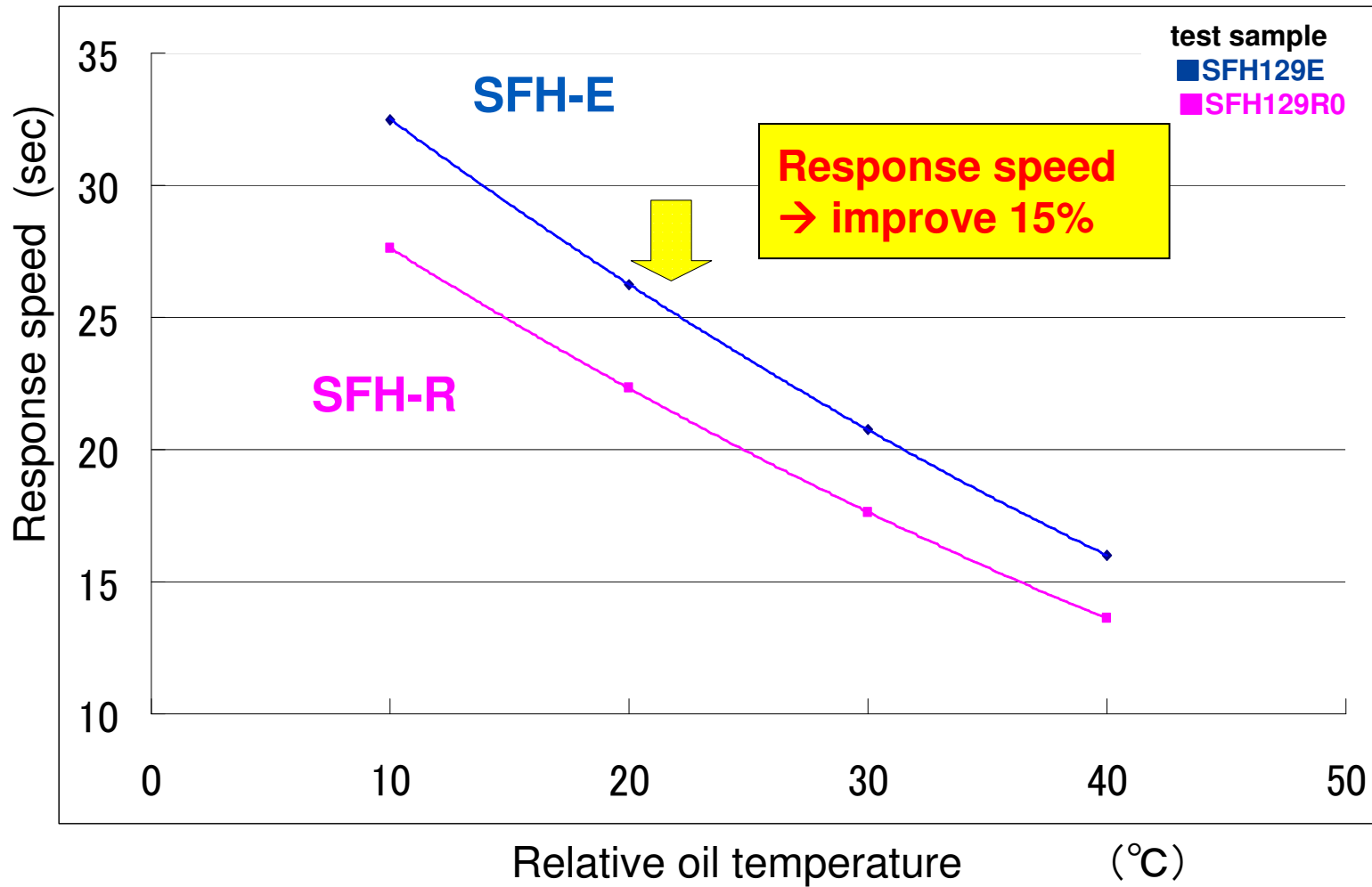
* The information in this document is subject to change without notice.

Comparison of Response Speed



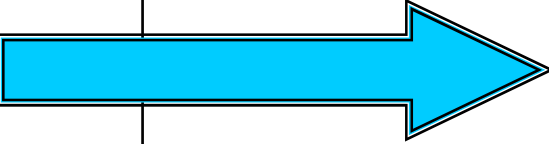
* The information in this document is subject to change without notice.

Comparison of Response Speed



* The information in this document is subject to change without notice.

Development Schedule

	CY2012 4Q	CY2013 1Q	2Q
Engineering Sample	● Engineering sample is available now if accept without UL/CCC certification.		
Safety Approval	★ VDE/PSE	☆ UL	☆ CCC
Mass- Production			

The production of SF(H)-E/N/L will be stopped in the end of 2014.

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New product < SF-R series >

Part Number	Rated Function Temperature Tf (°C)	Operating Temperature (°C)	Holding *1 Temperature Th (°C)	Maximum *2 Temperature Tm (°C)	Electrical Ratings		Safety Standard			
					Current	Voltage	UL,c-UL	VDE	CCC	PSE
SF70R0	73	70+2/-2	58	165	15A AC	250V AC	●	○	●	○
SF76R0	77	76+0/-4	62	165			●	○	●	○
SF81R0	84	81+3/-1	69	165			●	○	●	○
SF90R0	94	90+2/-2	79	165			●	○	●	○
SF94R0	99	94+2/-2	84	165			●	○	●	○
SF113R0	113	108+2/-2	98	165			●	○	●	○
SF119R0	121	119+2/-2	106	165			●	○	●	○
SF129R0	133	129+2/-2	118	175			●	○	●	○
SF139R0	142	139+2/-2	127	175			●	○	●	○
SF144R0	144	140±2	129	210			●	○	●	○
SF150R0	152	150+1/-3	137	210			●	○	●	○
SF167R0	167	164+2/-2	153	250			●	○	●	○
SF184R0	184	182+2/-2	174	250			●	○	●	○
SF188R0	192	188+3/-1	177	375			●	○	●	○
SF214R0	216	214+1/-3	200	375			●	○	●	○
SF229R0	229	227+2/-2	200	380			●	○	●	○
SF240R0	240	237+2/-2	200	380			●	○	●	○

○:Approved ●:Application

*1 Holding Temperature is the maximum temperature at which, when applying a rated current to the thermal cutoff, the state of conductivity is not changed during specified time not less **168 hours(1week)**.

*2 Maximum temperature limit is the temperature up to which thermal cutoffs will not change its state of cutoff without impairing.

* The information in this document is subject to change without notice.

New product < SFH-R series >

Part Number	Rated Function Temperature, Tf (°C)	Operating Temperature (°C)	Holding *1 Temperature, Th (°C)	Maximum *2 Temperature, Tm (°C)	Electrical Ratings		Safety Standard			
					Current	Voltage	UL,c-UL	VDE	CCC	PSE
SFH106R0	110	106+3/-3	99	400	15A AC	250V AC	●	○	●	○
SFH109R0	113	109+3/-3	102	400			●	○	●	○
SFH113R0	117	113+3/-2	106	400			●	○	●	○
SFH117R0	121	117+3/-3	110	400			●	○	●	○
SFH124R0	128	124+3/-3	117	400			●	○	●	○
SFH129R0	134	129+3/-2	122	400			●	○	●	○
SFH134R0	139	134+3/-2	127	400			●	○	●	○
SFH152R0	157	152+3/-3	145	400			●	○	●	○
SFH162R0	167	162+3/-2	155	400			●	○	●	○
SFH172R0	176	172+3/-3	165	400			●	○	●	○

○:Approved ●:Application

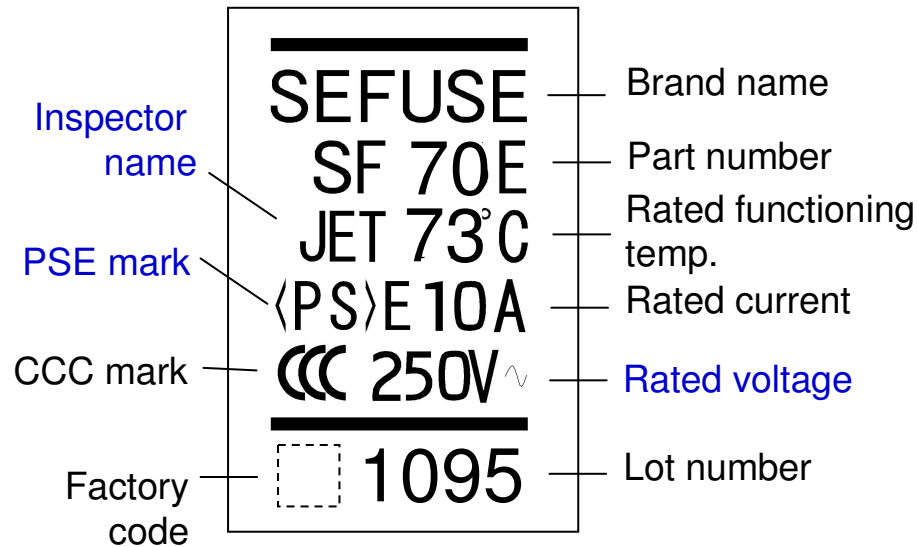
*1 Holding Temperature is the maximum temperature at which, when applying a rated current to the thermal cutoff, the state of conductivity is not changed during specified time not less **168 hours(1week)** .

*2 Maximum temperature limit is the temperature up to which thermal cutoffs will not change its state of cutoff without impairing.

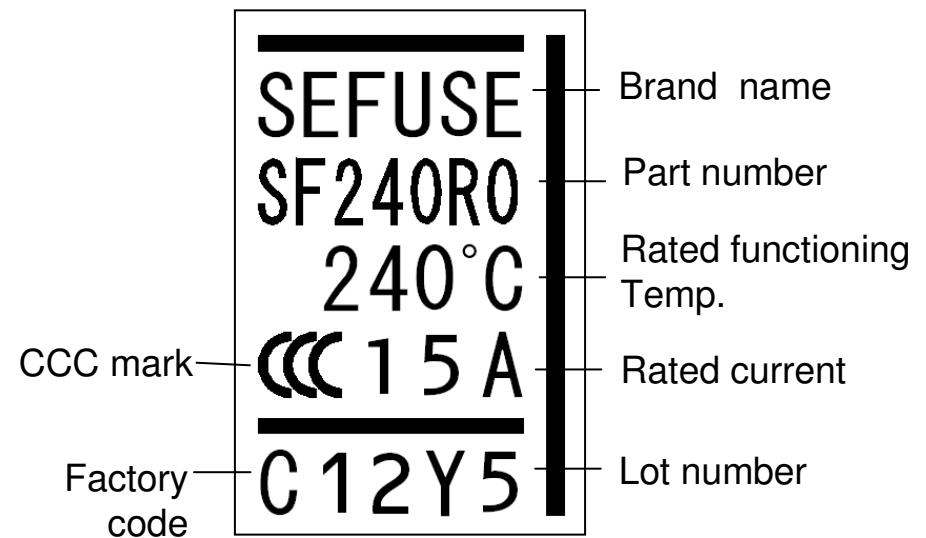
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Marking on the fuse-body

SF/E



SF/R



PSE mark and Rated voltage described on the fuse-body will be deleted, but PSE mark and Rated voltage are described on the package instead as same as SF/E.