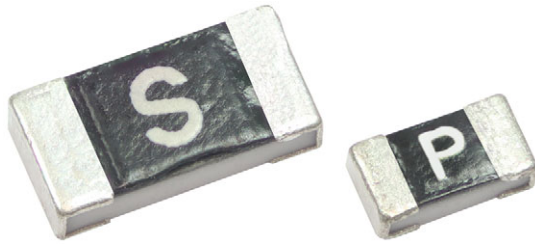


Long Time Lag Acting Thin Film Chip Fuses



FEATURES

- 2 sizes: 0603, and 1206
- Maximal protection as fuses are designed to open in within $t = 1\text{ s to }120\text{ s}$ at **200 % overload**
- UL 248-14 compliant
- From 0.5 A to 7 A
- Low resistance
- Body temperature rising $< 75\text{ }^\circ\text{C}$ at 100 % rated current
- Termination: thin film technology
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

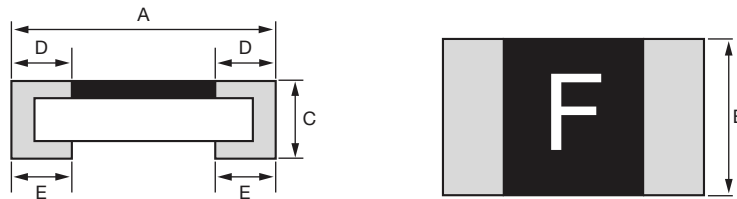
LINKS TO ADDITIONAL RESOURCES



SF2T thin film chip fuses are designed for equipment such as motors and transformers that generate inrush currents during startup. These fuses can endure temporary, non-damaging spikes while still providing reliable overcurrent protection. Particularly adapted to being compatible with numerous applications in the sector of electronics, they comply with industrial and government standards, as well as Vishay quality and reliability requirements.

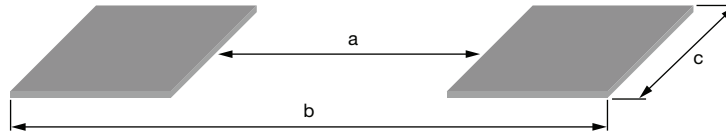
TECHNICAL SPECIFICATIONS		
DESCRIPTION	SF2T0603	SF2T1206
Imperial size	0603	1206
Rated current I_N range	0.50 A to 6.00 A	0.50 A to 7.00 A
Rated voltage U_{max} . DC	32 V and 50 V	32 V and 63 V
Cold resistance at $I \leq 0.1 \times I_N$	6 m Ω to 264 m Ω	7.5 m Ω to 738.5 m Ω
Fusing time	Open within 1 second to 120 seconds at 200 % rated power	
Body temperature rise	$< 75\text{ }^\circ\text{C}$ at 100 % rated current	
Operating temperature range	$-25\text{ }^\circ\text{C}$ to $125\text{ }^\circ\text{C}$ with proper derating factor	
Approved UL 248-14 recognition file	E548286	

DIMENSIONS



DIMENSIONS AND TOLERANCES in millimeters (inches)					
TYPE	A	B	C	D	E
SF2T0603	1.60 \pm 0.10 (0.063 \pm 0.004)	0.80 \pm 0.10 (0.031 \pm 0.004)	0.45 \pm 0.10 (0.018 \pm 0.004)	0.30 \pm 0.20 (0.012 \pm 0.008)	0.35 \pm 0.20 (0.014 \pm 0.008)
SF2T1206	3.10 \pm 0.10 (0.122 \pm 0.004)	1.55 \pm 0.10 (0.061 \pm 0.004)	0.60 \pm 0.10 (0.024 \pm 0.004)	0.50 \pm 0.30 (0.020 \pm 0.012)	0.50 \pm 0.20 (0.020 \pm 0.008)

MECHANICAL SPECIFICATIONS	
Substrate	Ceramic
Technology	Thin film
Termination	Cu / Ni plating

LAND PATTERN DIMENSIONS


SUGGESTED LAND PATTERN DIMENSIONS in millimeters (inches)			
TYPE	a	b	c
SF2T0603	0.85 to 0.95 (0.033 to 0.037)	2.00 to 2.20 (0.079 to 0.087)	1.50 to 1.70 (0.059 to 0.067)
SF2T1206	0.95 to 1.05 (0.037 to 0.041)	4.40 to 5.00 (0.173 to 0.197)	2.30 to 2.50 (0.091 to 0.098)

SF2T0603 RATING						
PART DESIGNATION	MARKING	RATED CURRENT (A)	FUSING TIME	RESISTANCE ⁽¹⁾ (mΩ), TOLERANCE: ± 25 %	RATED VOLTAGE (V _{DC})	BREAKING CAPACITY
SF2T060350VA500TT	F	0.50	Open within 1 s to 120 s at 200 % rated current	264	50	50 V _{DC} , 50 A
SF2T060332VA630TT	I	0.63		200		
SF2T060332VA800TT	K	0.80		143		
SF2T060332V1A00TT	L	1.00		83		
SF2T060332V1A25TT	M	1.25		54		
SF2T060332V1A50TT	P	1.50		42		
SF2T060332V1A60TT	N	1.60		40		
SF2T060332V2A00TT	S	2.00		28		
SF2T060332V2A50TT	T	2.50		21.5		
SF2T060332V3R00TT	3	3.00		18		
SF2T060332V3R15TT	U	3.15		16		
SF2T060332V4A00TT	W	4.00		13		
SF2T060332V5A00TT	Y	5.00		9.5		
SF2T060332V6A00TT	6	6.00		6		

SF2T1206 RATING						
PART DESIGNATION	MARKING	RATED CURRENT (A)	FUSING TIME	RESISTANCE ⁽¹⁾ (mΩ), TOLERANCE: ± 25 %	RATED VOLTAGE (V _{DC})	BREAKING CAPACITY
SF2T120663VA500TT	F	0.50	Open within 1 s to 120 s at 200 % rated current	738.5	63	63 V _{DC} , 50 A
SF2T120663VA800TT	K	0.80		215		
SF2T120663V1A00TT	L	1.00		163.5		
SF2T120663V1A25TT	M	1.25		100		
SF2T120663V1A50TT	P	1.50		68.5		
SF2T120663V2A00TT	S	2.00		48.5		
SF2T120632V2A50TT	T	2.50		35		
SF2T120632V3A00TT	3	3.00		27		
SF2T120632V4A00TT	W	4.00		14		
SF2T120632V5A00TT	Y	5.00		11		
SF2T120632V7A00TT	Z	7.00		7.5		

Note

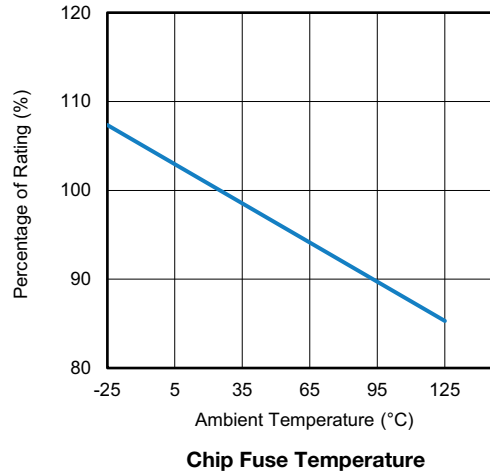
⁽¹⁾ Resistance value was measured with less than 10 % of rated current



TEMPERATURE DERATING

Normal ambient temperature: 25 °C

Operating temperature range: -25 °C to +125 °C, with proper derating factor as below:



PERFORMANCES		
TESTS	CONDITIONS	REQUIREMENTS PERMISSIBLE CHANGES
Carrying capacity	Rated current, 4 h	No fusing
Fusing time	200 % of its rated current	Within 1 s to 120 s
Interrupting ability	After the fuse is interrupted, rated voltage applied for 30 s again	No mechanical damages
Bending test	Distance between holding points: 90 mm Bending: 3 mm, 1 time, 30 s	No mechanical damages
Resistance to solder heat	260 °C ± 5 °C, 10 s ± 1 s	± 20 %
Solderability	235 °C ± 5 °C, 2 s ± 0.5 s 245 °C ± 5 °C, 2 s ± 0.5 s (lead (Pb)-free)	95 % coverage minimum
Temperature rise	100 % of its rated current, measurement of surface temperature	$\Delta T < 75 \text{ }^\circ\text{C}$
Resistance to dry heat	105 °C ± 5 °C, 1000 h	± 20 %
Resistance to solvent	23 °C ± 5 °C in isopropyl alcohol, 90 s	No evident damages on protective coating and marking
Residual resistance	DC measurement resistance after fusing	10 k Ω and more
Thermal shock	-25 °C / 25 °C / 125 °C / 25 °C, 10 cycles	$\frac{\Delta R}{R} < 10 \text{ %}$

PACKAGING				
SIZE	MOQ	TAPE WIDTH	TAPE PITCH	PACKAGING DIMENSIONS
0603	5000	8 mm	4 mm	Ø 180 mm / 7"
1206				

Note

- Packaging is compliant to EIA-481 Rev. D (IEC 60286, part 3) standard

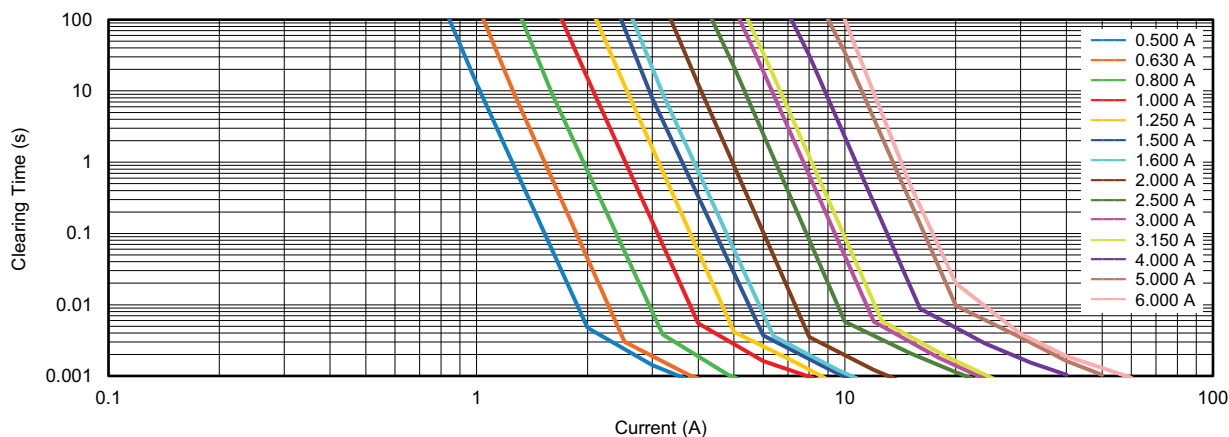


SOLDERING / MOUNTING PARAMETERS

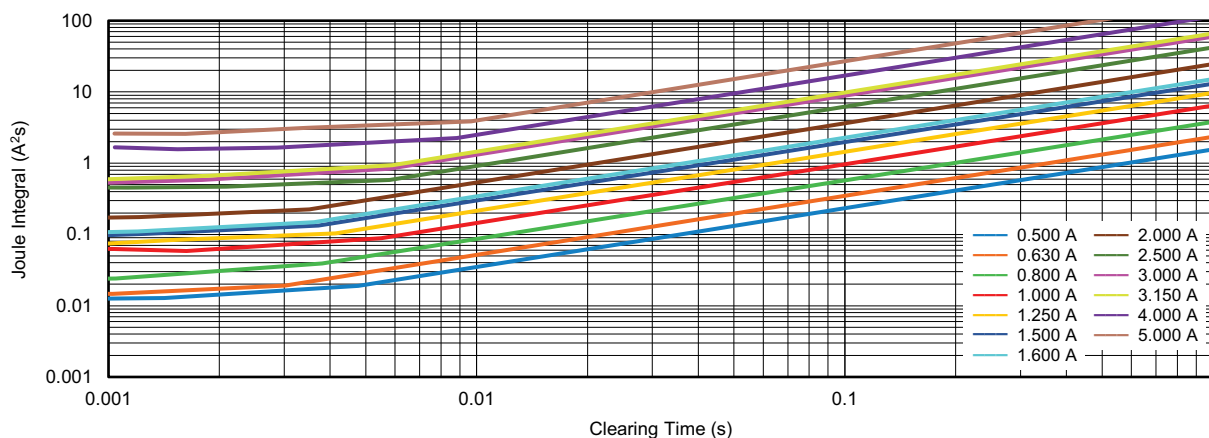
Please see the application note (www.vishay.com/doc?52029). The recommended reflow solder process parameters are displayed in pages 4 and 5.

GLOBAL PART NUMBER INFORMATION																
Part Number: SF2T060332V1A50TT																
S	F	2	T	0	6	0	3	3	2	V	1	A	5	0	T	T
MODEL		SIZE		RATING VOLTAGE		RATING CURRENT		TERMINATION			PACKAGING					
SFT		0603 (1608) 1206 (3216)		32V 50V 63V		A400 = 0.4 A 1A50 = 1.5 A 3A15 = 3.15 A		T = Sn			T (tape and reel) = paper tape (5000)					

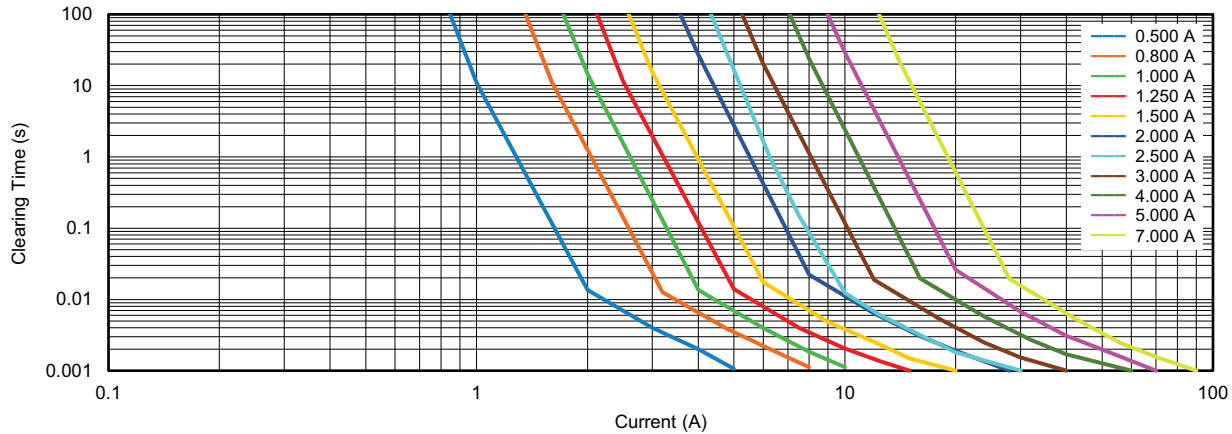
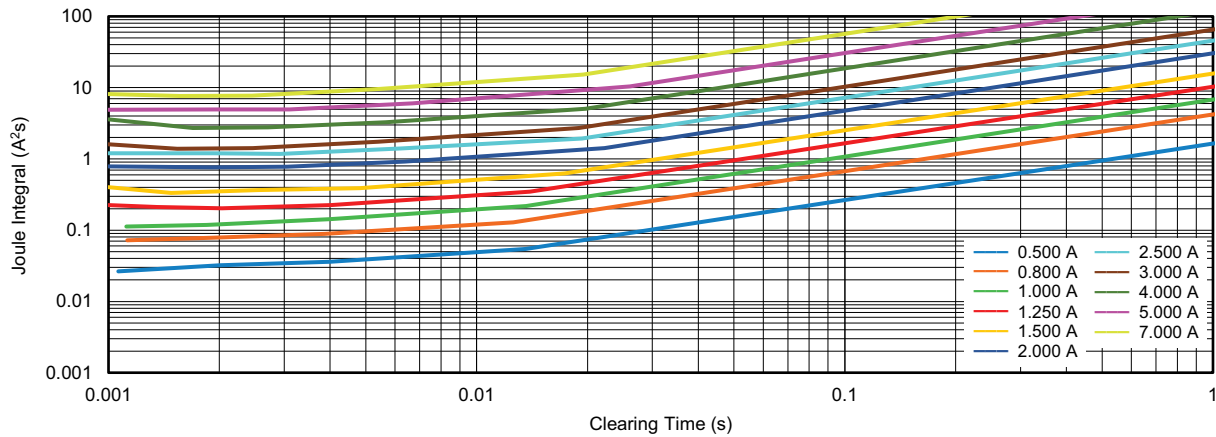
FUNCTIONAL PERFORMANCE



SF2T06 (0603 Size) Chip Fuse I-t Curve



SF2T06 (0603 Size) Chip Fuse t-I²t Curve

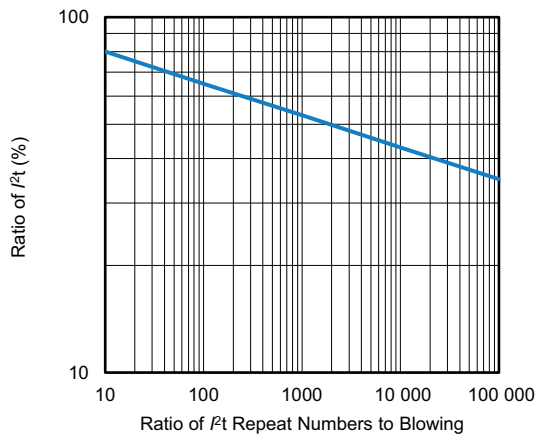

SF2T12 (1206 Size) Chip Fuse I-t Curve

SF2T12 (1206 Size) Chip Fuse t-I²t Curve

Typical Joule integral values ($\int_{t=0}^t i^2 \cdot dt$), measured at 10 times rated current, are displayed in the following table:

SF2T FUSE I²t (A²s)			
PART NUMBER	TYPICAL I²t (A²s)	PART NUMBER	TYPICAL I²t (A²s)
SF2T060350VA500TT	0.009	SF2T120663VA500TT	0.027
SF2T060332VA630TT	0.014	SF2T120663VA800TT	0.072
SF2T060332VA800TT	0.023	SF2T120663V1A00TT	0.134
SF2T060332V1A00TT	0.036	SF2T120663V1A25TT	0.233
SF2T060332V1A25TT	0.056	SF2T120663V1A50TT	0.305
SF2T060332V1A50TT	0.081	SF2T120663V2A00TT	0.509
SF2T060332V1A60TT	0.092	SF2T120632V2A50TT	0.777
SF2T060332V2A00TT	0.145	SF2T120632V3A00TT	1.285
SF2T060332V2A50TT	0.229	SF2T120632V4A00TT	2.374
SF2T060332V3R00TT	0.332	SF2T120632V5A00TT	5.510
SF2T060332V3R15TT	0.365	SF2T120632V7A00TT	10.170
SF2T060332V4A00TT	0.574		
SF2T060332V5A00TT	0.927		
SF2T060332V6A00TT	1.860		



Furthermore, for repeated numbers of inrush current, another specific derating must be applied:



Chip Fuse Clearing by Repeated Rush Current



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