Type VF451/VF453

RoHS

Fast Acting Square Ceramic Surface Mount Fuse

E357828 E357828

Electrical Characteristic

Cartridge Catalog Number	Ampere Rating [In]	Voltage Rating (V)	Nominal Resistance Cold Ohms	Nominal Melting I^2t A^2 Sec
VF451/VF453 .062	62mA (1/16A)	125V	5.7200	0.000205
VF451/VF453 .080	80 mA		4.2525	0.000343
VF451/VF453 .100	100 mA		3.2860	0.001421
VF451/VF453 .125	125 mA		1.8360	0.002917
VF451/VF453 .160	160 mA		1.2886	0.004704
VF451/VF453 .200	200 mA		0.8707	0.009523
VF451/VF453 .250	250 mA		0.6053	0.016274
VF451/VF453 .315	315 mA		0.4075	0.030167
VF451/VF453 .375	375 mA		0.4677	0.045084
VF451/VF453 .400	400 mA		0.4402	0.056753
VF451/VF453 .500	500 mA		0.2985	0.084872
VF451/VF453 .630	630 mA		0.2023	0.145005
VF451/VF453 .750	750 mA		0.1473	0.222872
VF451/VF453 .800	800 mA		0.1301	0.273362
VF451/VF453 001	1 A		0.1056	0.385045
VF451/VF453 1.25	1.25 A		0.0795	0.644080
VF451/VF453 1.50	1.5 A		0.0611	0.818880
VF451/VF453 1.60	1.6 A		0.0591	1.038800
VF451/VF453 002	2 A		0.0389	0.514100
VF451/VF453 2.50	2.5 A		0.0305	1.008420
VF451/VF453 003	3 A		0.0231	1.666500
VF451/VF453 3.15	3.15A		0.0211	1.977600
VF451/VF453 3.50	3.5 A		0.0204	2.567760
VF451/VF453 004	4 A		0.0165	3.183520
VF451/VF453 005	5 A		0.0128	5.454680
VF451/VF453 6.30	6.3 A		0.0098	8.986600
VF451/VF453 007	7 A		0.0091	10.52640
VF451/VF453 008	8 A		0.0080	21.24150
VF451/VF453 010	10 A		0.0057	27.25380
VF451/VF453 012	12A		0.0050	49.40910
VF451/VF453 015	15A		0.0035	95.86360
VF451/VF453 018	18A	86V	0.0028	115.8320
VF451/VF453 020	20A		0.0025	147.8400
VF451/VF453 025	25A		0.0016	230.8400
VF451/VF453 030	30A		0.0012	415.8400

Approval

Certified products for U.S. and Canada	0.062~15A
Recognized Component for Canada and U.S.	15.1~30A
TUV	0.062~15A(VF453/125V)

Electrical Characteristic

Rated current	1 In	2 In
	MIN	MAX
62mA~10A	4hr	5 sec
12A~30A	4hr	60 sec

Environmental Temperature at 25°C

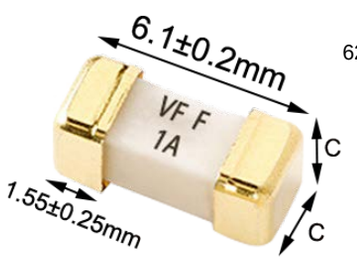
Interrupting Rating

62mA~15A: 100 amperes at 125VAC/DC

62mA-30A: 150 amperes at 86V AC

62mA~30A: 200 amperes at 86V DC

Mechanical Dimension



62mA~10A C: 2.6±0.1mm

12A~30A C: 2.6±0.2mm

Physical Specification

Material

Body: Ceramic

Terminations: Silver Plated Brass Caps(VF451)
G:Gold plated brass caps(VF453)

Packaging

1,000 Fuses in 7 inches dia. reel, or 5,000 fuses in 13 inches dia. reel, 12mm wide tape, per EIA Standard 481

Environmental Specification

Operating Temperature

-55°C to +125°C

Vibration

MIL-STD-202G, Method 201 (10-55 Hz, 0.06 inch, total excursion)

Salt Spray

MIL-STD-202G, Method 101, Test Condition B (48Hrs)

Insulation Resistance

MIL-STD-202G, Method 302, Test Condition A

Resistance to Solder Heat

MIL-STD-202G, Method 210, Test Condition B (10sec, at 260°C)

Thermal Shock

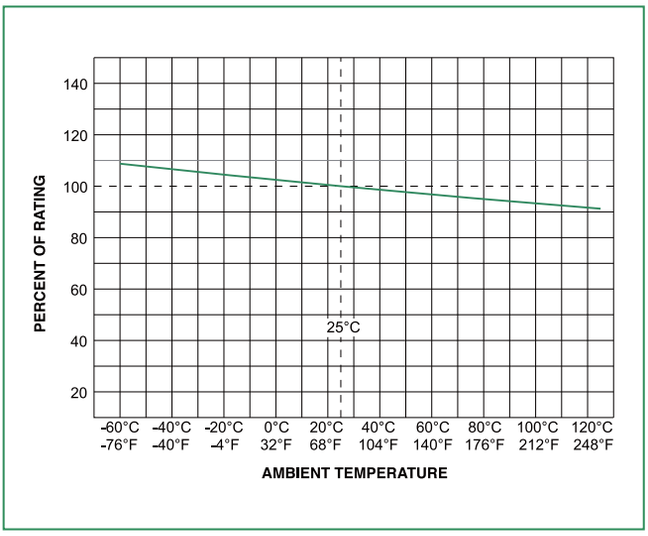
MIL-STD-202G, Method 107, Test Condition B (-65°C to +125°C)

Moisture Sensitivity Level

Level 1

Website: http://www.vicfuse.com E-mail: sales@vicfuse.com TEL:0755-83952751 28309571 FAX:0755-82865705
Add: Room 503A, Unit B, Building No.3, Phase I, TianAnYunGu , No 2018 Xuegang North Rd , Bantian,Shenzhen , Guangdong Province

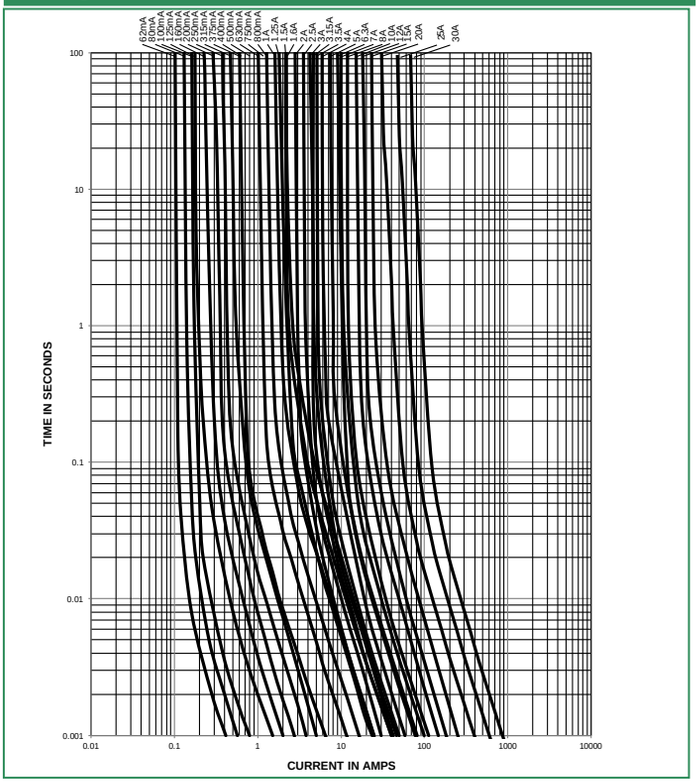
Temperature Rerating Curve



Note:

1. Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

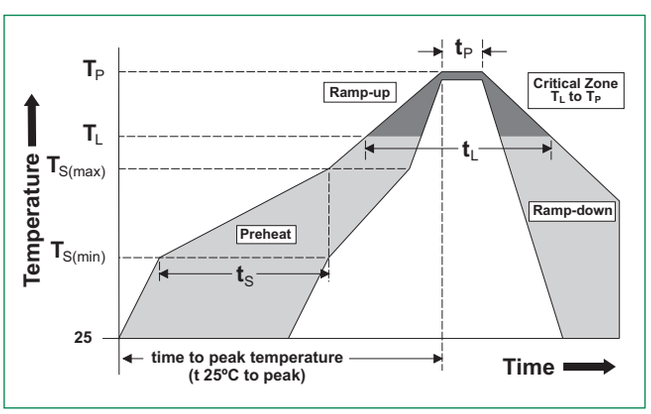
Average Time Current Curves



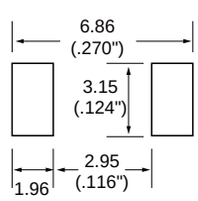
Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	**-Temperature Min ($T_{s(min)}$)**	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	-Time (Min to Max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		5°C/second max.
$T_{S(max)}$ to T_L - Ramp-up Rate		5°C/second max.
Reflow	**-Temperature (T_L) (Liquidus)**	217°C
	-Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max.
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260°C

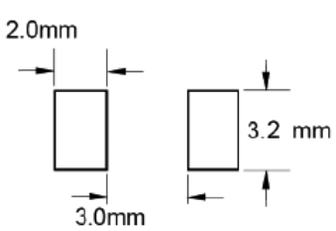
Wave Soldering Parameters	260°C Peak Temperature, 10 seconds max.



Hand Soldering: 350°C ,3Sec.max.The tip of the soldering iron should not touch the copper fuse cap.



Recommended pad layout <=20A



Recommended pad layout >20A

Note: Minimum copper layer thickness=100um.

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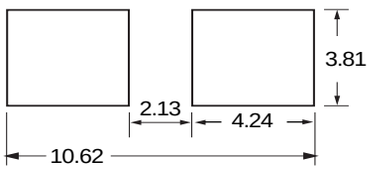
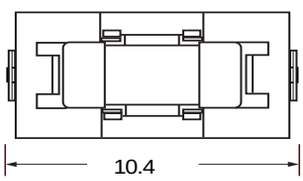
Add: Room 503A, Unit B, Building No.3, Phase I, TianAnYunGu , No 2018 Xuegang North Rd , Bantian,Shenzhen , Guangdong Province

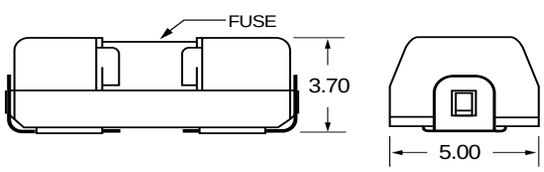
With Fuse Block: 62mA~10A

Mechanical Dimension(mm)

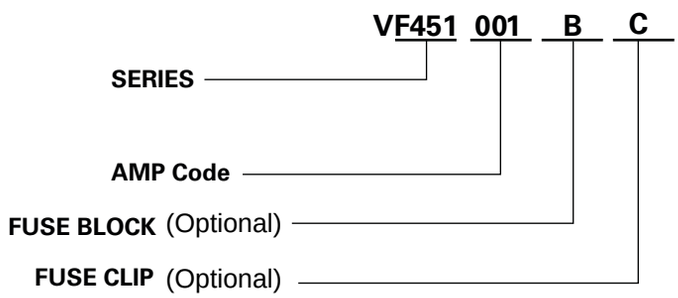


Recommended Pad Layout



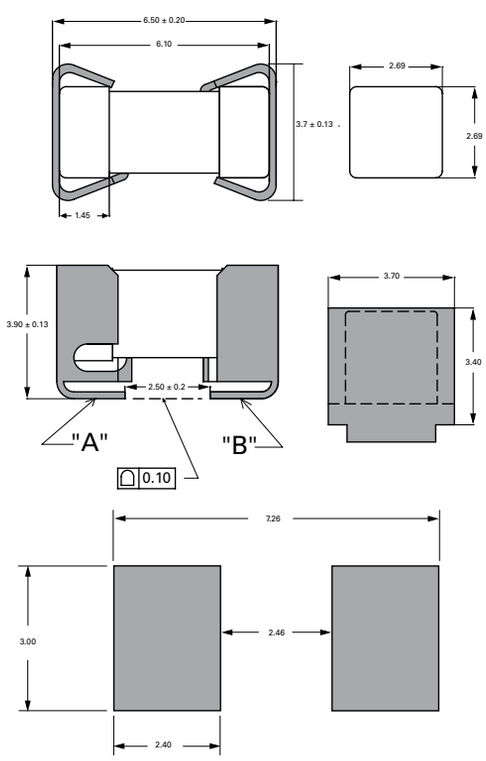


Part Numbering System



With Fuse Clip: 62mA~10A

Mechanical Dimension(mm)



PCB Recommendation for Thermal Management

1. Minimum Copper Layer Thickness = 100um
2. Minimum Copper Trace Width = 10mm

Note:

Alternate methods of thermal management may be used. In such cases, under normal operations, the maximum temperature of the fuse body should not exceed 80°C in a 25°C ambient environment.

Revised: 05/21/24 V4.0.

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Add: Room 503A, Unit B, Building No.3, Phase I, TianAnYunGu , No 2018 Xuegang North Rd , Bantian,Shenzhen , Guangdong Province