Overcurrent & Overvoltage Protection Device : FCMOV-T Series

1. Summary

(a) RoHS Compliant (Lead Free) Product
(b) Maximum Continuous Operating Voltage : 240VAC
(c) Maximum Limited Duration Voltage : 400VAC~600VAC
(d) Maximum Limited Duration Current : 10A~40A
(e) Temperature Range : -40℃ to 85℃

2. Agency Recognition

UL/CUL : FCMOV14431

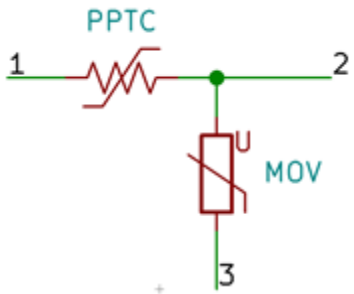
3. Feature

- IEC61000-4-2 – Electrostatic discharge immunity test
- IEC61000-4-4 – Electrical fast transient/burst immunity test
- IEC61000-4-5 – Surge immunity test
- Over Current Protection
- Over Voltage Protection
- Prevent thermal runaway Occurs

4. Applications

- LED Lighting System
- PLC network adapters
- AC Line Power Supplies
- AC/DC power supplies
- Modem Power Supply
- White goods, appliances, industrial controls

5. Electrical Schematic:



6. Overcurrent(terminals 1-2) Electrical Characteristics (23℃)

Part Number	Hold Current	Trip Current	Time to Trip			Resistance		
			Current	Typ. Time	Max. Time	R_{MIN}	R_{MAX}	$R1_{MAX}$
	(A)	(A)	(A)	(Sec)	(Sec)	Ohms	Ohms	Ohms
FCMOV10271-T015	0.15	0.30	1.00	0.90	3.00	6.50	14.00	16.00
FCMOV10431-T015	0.15	0.30	1.00	0.90	3.00	6.50	14.00	16.00
FCMOV14431-T035	0.35	0.75	3.00	0.50	2.00	1.40	2.20	2.80
FCMOV14431-T075	0.75	1.50	7.00	0.90	1.20	0.37	0.80	1.00

7. Overvoltage(terminals 2-3) Electrical Characteristics (23℃)

Part Number	Varistor Voltage V@1mA		DC Resistance @100V	Maximum Clamping Voltage @25A	Typical Power
	V_{DC}	Tolerance	MΩ	V_{DC}	Pd, W
FCMOV10271-T015	260	+14% / -7%	>10	455	0.25
FCMOV10431-T015	430	+10% / -10%	>10	710	0.25
FCMOV14431-T035	430	+10% / -10%	>10	710	0.60
FCMOV14431-T075	430	+10% / -10%	>10	710	0.60

8. Production Dimensions (millimeter)

Figure 1

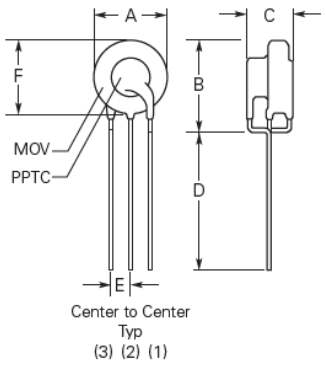


Figure 2

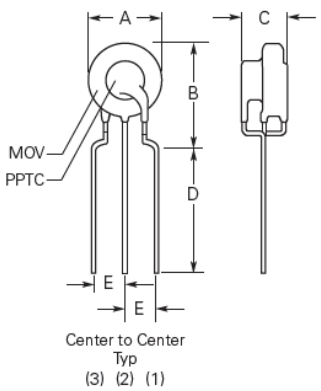
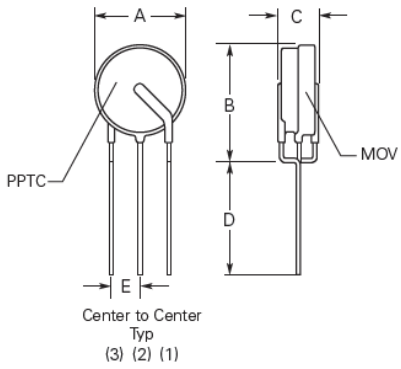


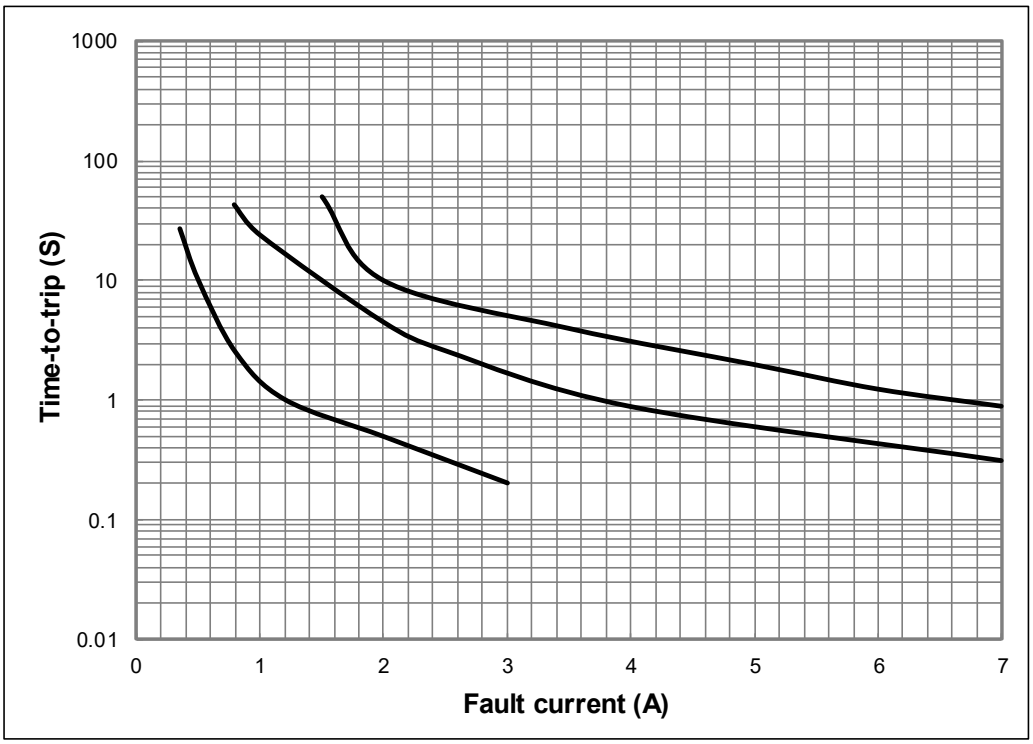
Figure 3



Part Number	Figure	A	B	C	D		E	F
		Maximum	Maximum	Maximum	Min.	Max.	Nominal	Maximum
FCMOV10271-T015	1	12.0	15.0	6.6	6.0	-	2.5	12.0
FCMOV10431-T015	2	12.0	17.0	7.4	8.5	11.5	5.1	-
FCMOV14431-T035	2	16.0	21.0	7.4	3.0	5.0	5.1	-
FCMOV14431-T075	3	16.0	21.0	7.4	3.0	5.0	2.5	-

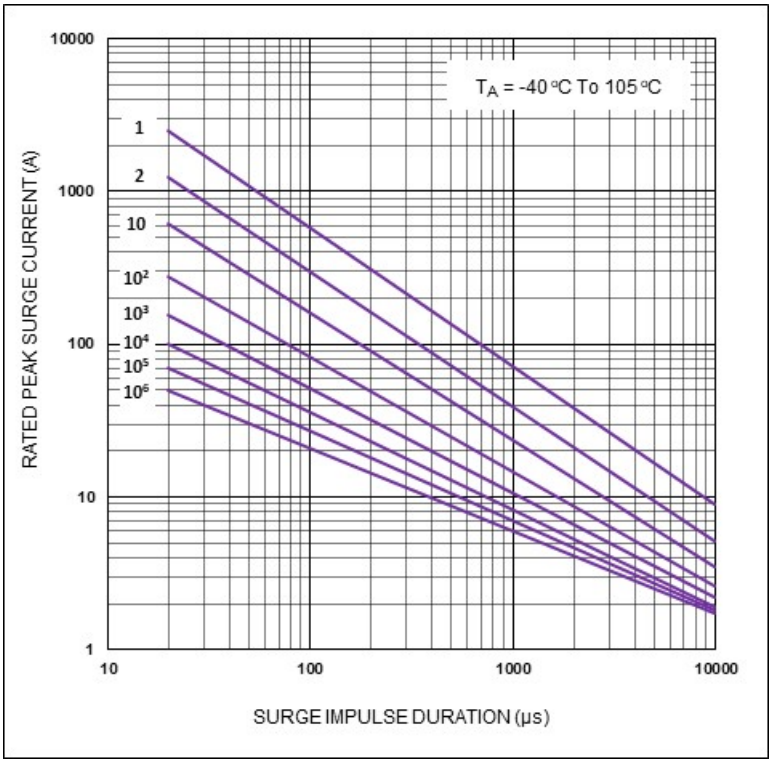
9. Typical Time-To-Trip at 23℃

A= FCMOV10271-T015
A= FCMOV10431-T015
B= FCMOV14431-T035
C= FCMOV14431-T075

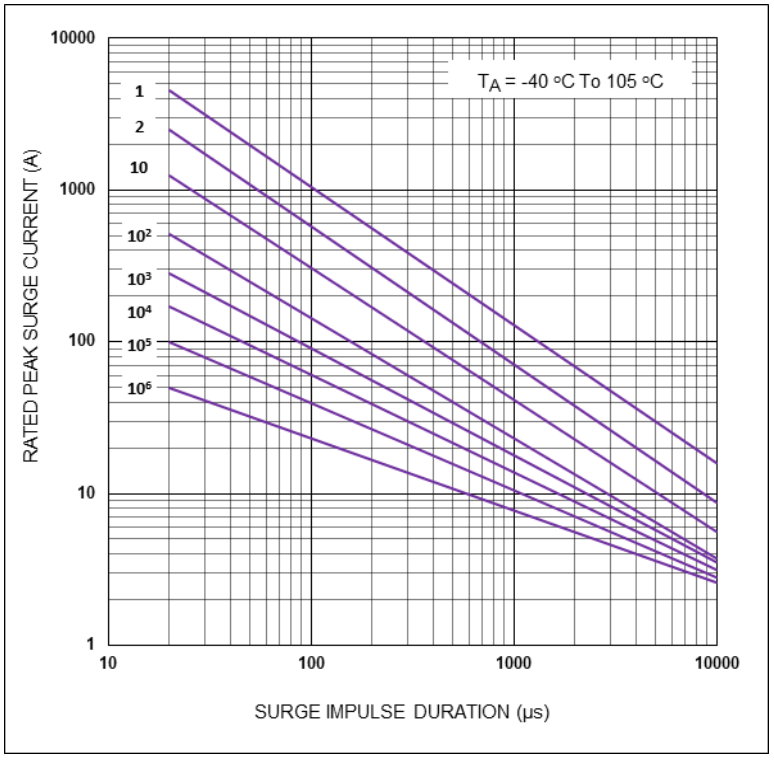


10. Impulse Life Time Rating Curve

FCMOV10 Series



FCMOV14 Series

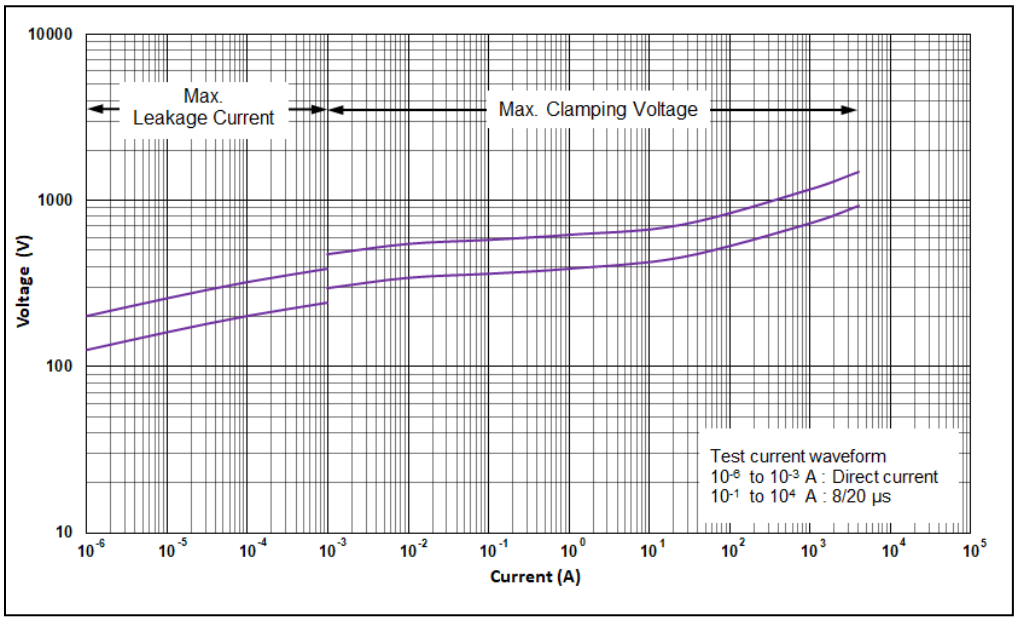


V-I Curves

A= FCMOV10271-T015

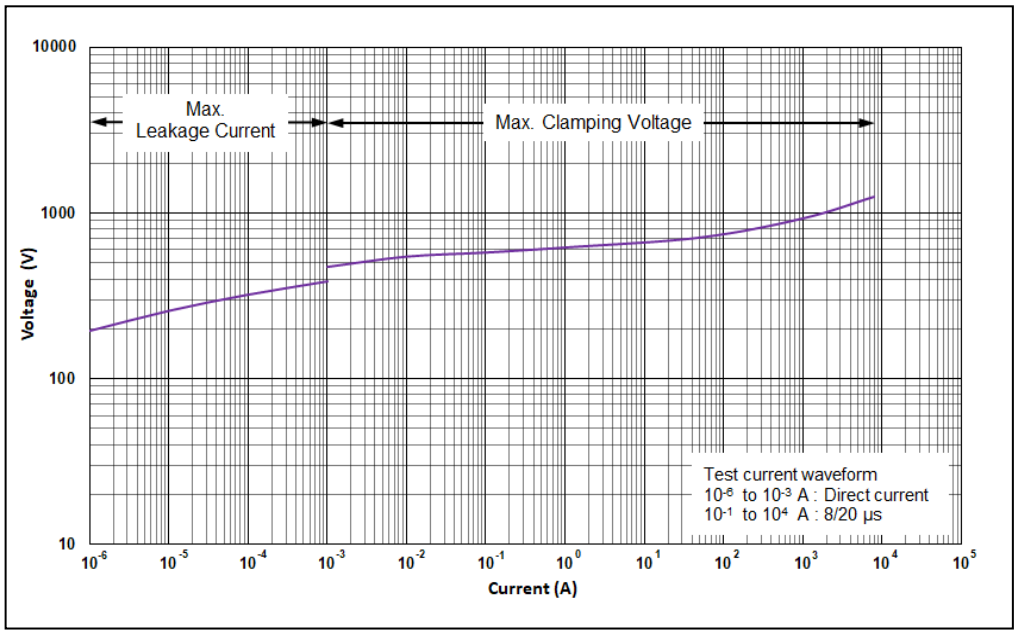
B= FCMOV10431-T015

C= FCMOV14431-T035
FCMOV14431-T075



B

A



C

11. Material Specification

Lead material：Tin plated copper, 22 AWG.

Soldering characteristics: MIL-STD-202, Method 208E.

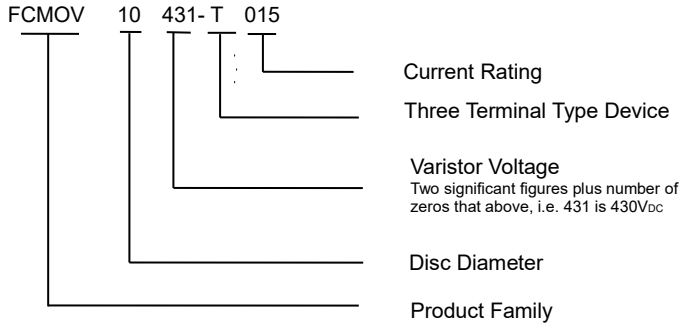
Insulating coating: Flame retardant epoxy, meets UL-94V-0 requirement.

12. SURGE IMMUNITY FOR THE ASSEMBLY (TERMINALS 1-3) @ 25ºC:

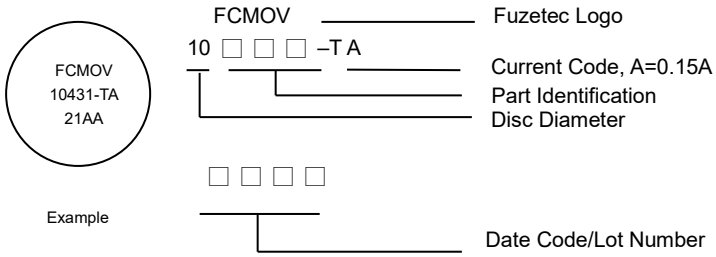
Parameter	VOLTAGE – Open Circuit		CURRENT – Short Circuit		Repetitions
	Voltage (V)	Waveform (μs)	Current (A)	Waveform (μs)	
IEC / EN 61000-4-5	2000	1.2 x 50	1000	8 x 20	5 ea. Polarity

13. Marking System

Part Numbering System



Part Marking System



Note: Font on Marking may look slightly different due to fine turnings of each Marking printer.

14. Packaging Specifications (dimensions in millimeters)

Part Number	Pcs/Bag
FCMOV10271-T015	250
FCMOV10431-T015	250
FCMOV14431-T035	250
FCMOV14431-T075	250

Warning: - Each product should be carefully evaluated and tested for their suitability of application.

- Operation beyond the specified maximum rating or improper use may result in damage and possible electrical arcing and/or flame.
- PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.
- Avoid contact of PPTC device with chemical solvent, including some inert material such as silicone based oil, lubricant and etc. Prolonged contact will damage the device performance.
- Additional protection mechanism are strongly recommended to be used in conjunction with the PPTC device for protection against abnormal or failure conditions.
- Avoid use of PPTC device in a constrained space such as potting material, housing and containers where have limited space to accommodate device thermal expansion and/or contraction.