



MF-xxxM-4D Series

◆Features

- Quick and repeated response
- Small capacitance.
- Stably absorb surge.
- Small devices in electronic circuit and no polarity.

◆Application

- Surge protection for equipment connected to ISDN or LAN etc.
- Devices connecting telecommunication line. Telephone, Fax machine, XDSL, Modem etc.
- Devices connecting antenna or signal line. Booster, Car radio set etc.
- Devices that need protection against electrostatic Display unit, Monitor TV, etc.
- Used to protect switching power supplies and uninterruptible power systems.(UPS)

1. Scope :

This specification covers the MF SURGE SUPPRESSOR series for manufacturing gas tube arrestors with the micro-gap system.

2. Partnumber :

Example: MF - 201 M - 4D
 (1) (2) (3) (4)

(1) Series name

(2) DC Sparkover voltage

The first two digits are significant and the third is the number of zeros. Example: 201
 Units in volts (V) .

$20 \times 10^1 = 200V$

(3) Tolerance of DC Sparkover voltage

MARK	L	M	N
Tolerance	±15%	±20%	±30%

(4) Taping form

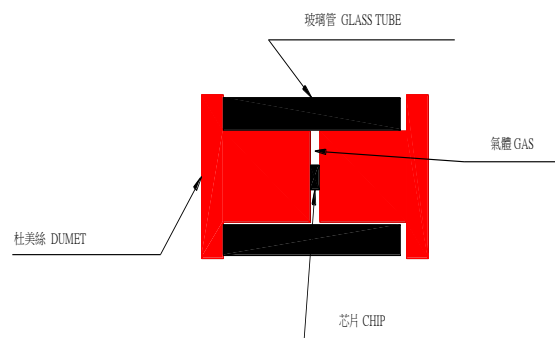
MARK	4D
Form	DL-41

3. Temperature Range :

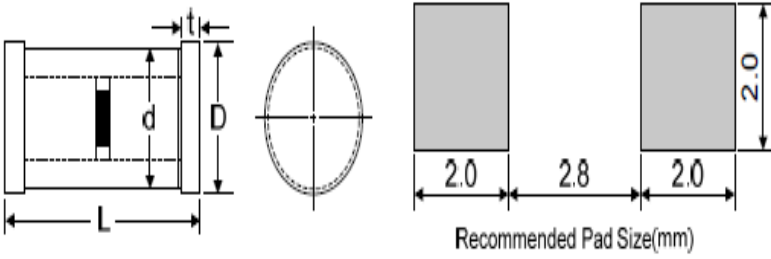
1) Operating temperature range : -40 ~ +125°C

2) Storage temperature range : -40 ~ +125°C

4. Structure :




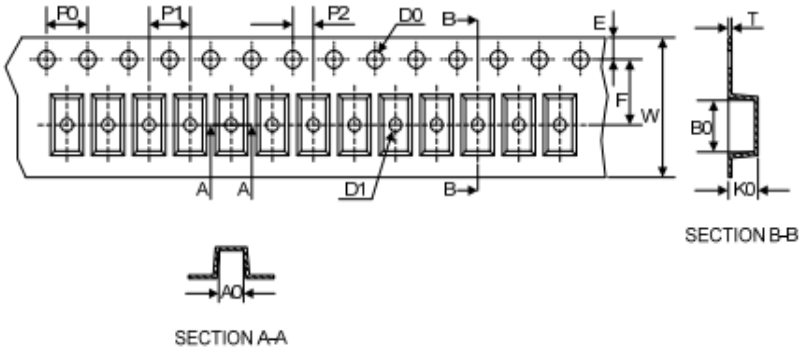
5. Dimension :

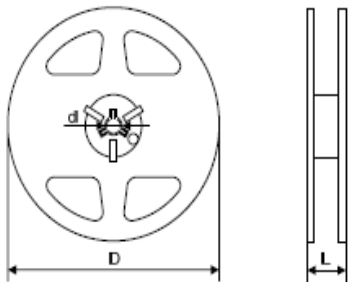
		Symbol	Dimension (mm)
L		L	5.0±0.5
D		D	Φ2.6±0.5
d		d	Φ2.5±0.5
t		t	0.4±0.1

6. SpecificationI :

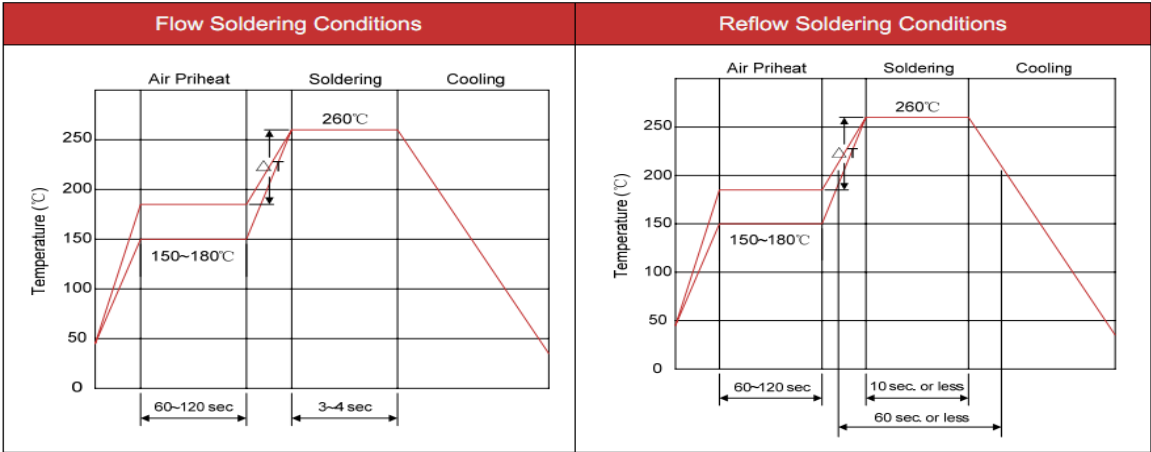
Part Number	DC Spark-Over Voltage Vs (V)	Insulation Resistance IR(OHM)/DCV	Electrostatic Capacitance 1KHz-6Vmax C(pF)	Surge current capacity 8/20 μs	Surge Life Test
MF-141N-4D	140 (98~182)	>100M/50V	<1.0	500A	1kHz-10KV Max (10/700μs-4000V 100A 10 time)
MF-201M-4D	200(160-240)	>100M/100V			
MF-301M-4D	300(240-360)				
MF-401M-4D	400(320-480)	>100M/250V			
MF-501M-4D	500(400-600)				

7. Taping:

<div>Tape</div> <div></div> <div></div>	Symbol	Dimension (mm)
	W	12.00±0.20
	P0	4.00±0.10
	P1	4.00±0.10
	P2	2.00±0.10
	D0	Φ1.5±0.10
	D1	Φ1.5±0.10
	E	1.75±0.10
	F	5.50±0.05
	A0	3.00±0.10
	B0	5.50±0.10
	K0	3.00±0.10
	T	0.30±0.05

<div>Reel</div> <div></div>	D	178.0
	d	13.0
	L	15.0
	Quantity: 1500PCS	

8. Solder Characteristics.



9. Initial Characteristics.

項 目 Test Item	測 試 條 件 Test Method	規 格 值 Specification
直流放電電壓 DC Spark-Over Voltage Vs(V)	逐漸地增加測量使用直流電壓,即可知其開始電壓.測定電流為一毫安與測定時間最大為一秒(1sec).(1mA) Add and measure the DC Voltage gradually Max to get the discharge threshold voltage. The measuring current is 1mA/1 second max.	依仕様值而定 It depends on each spec.
內絕緣電阻 Insulation Resistance	在規定的設定直流電壓下,跨在兩端引線.即測量其內絕緣電阻值. Measure the insulation resistance of two end of leadwire under the specified DC voltage.	100MΩ 或大於 100MΩ 100MΩ min.
靜電電容 Capacitance C(pF)	使用頻率 1KHz 與小於或等於 6V 直流電壓之電源.即測量其靜電電容量. Measure the Electrostatic Capacitance under the test condition of 1KHz,DC 6V(max)	1PF 或小於 1PF (1pF max.)

10. Environmental Characteristics.

試驗項目 Test Item	試 驗 方 法 Test Method	性 能 Characteristics
耐寒性(依據 JIS C0020) Cold Resistance JIS C0020	放置於-40°C \pm 3°C之環境中 1000 小時後,取出置於常溫常濕中 4 小時後,檢測直流開始放電電壓,絕緣阻抗,靜電容量及檢查外觀 After -40 \pm 3°C(1000hrs) / room temp., normal humidity(4 hrs) cycle, measure the properties.	滿足各個特性之規格值 Within standard mentioned in Initial Characteristics.
耐熱性(依據 JIS C0021) Heat Resistance JIS C0021	放置於 125°C \pm 2°C之環境中 1000 小時後,取出置於常溫常濕中 4 小時後,檢測直流開始放電電壓,絕緣阻抗,靜電容量及檢查外觀 After 125 \pm 2°C(1000hrs) / room temp., normal humidity(4 hrs) cycle, measure the properties.	滿足各個特性之規格值 Within standard mentioned in Initial Characteristics.
耐濕性(依據 JIS C0022) Humidity Resistance JIS C0020	放置於 85°C \pm 2°C RH85%之環境中 1000 小時後,取出置於常溫常濕中 4 小時後,檢測直流開始放電電壓,絕緣阻抗,靜電容量及檢查外觀 After 85 \pm 2°C, 85% RH (1000hrs)/room temp., normal humidity(4hrs)cycle, measure the properties.	滿足各個特性之規格值 Within standard mentioned in Initial Characteristics.
溫度周期(依據 JISC0025) Temperature Cycle Test (JIS C0025)	-40°C \pm 3°C(30 分)~(常溫 3 分)~125°C \pm 2°C(30 分)為 1 周期,重複 25 次後,取出置於常溫/常濕中 4 小時後,檢測直流開始放電電壓,絕緣阻抗,靜電容量及檢查外觀 25 times repetition of cycle -40 \pm 3°C (30 Min.),room temp., (4 Min.), 125 \pm 2°C(30 Min.),room temp., normal humidity(4hrs) .	滿足各個特性之規格值 Within standard mentioned in Initial Characteristics.

11. Surge Characteristics

試驗項目 Test Item	試驗方法 Test Method	結果 Specification
突波雷击壽命(JSE) Life(JSE)	將 10X700 μsec-2KV 突波,變換極向各 5 次,8X20μsec-100A 之突波,變換極向各 100 次,每隔 60 秒施加於試料 200 次後,檢測直流開始放電電壓,絕緣阻抗,靜電容量及檢查外觀,Apply a standard impulse voltage 10X700 μsec of 2KV for 5 times with intervals of 60 sec., and then change the polarity of the surge and apply a impulse again. And similarly, apply a impulse voltage 8 X20 μsec) of 100A. Total apply 200 times. Then measure DC spark-over volatage, IR & Capacitance.	直流開始放電電壓 JSE Δ $V_s/V_s \leq 30\%$ (DC spark-over volatage JSE: $\Delta V_s/V_s \leq 30\%$)
突波靜電壽命(JSE) Life(JSE)	每間隔 10 秒施加 10KV 之電壓於 1500PF 之電容器通過試料,做 200 次(Apply 10 KV voltage charged in 1500pF condenser and apply the current to the specimen,200 times at 10 seconds of intervals.)	VS: $\Delta V_s/V_s \leq 30\%$ IR: 100M Ω min. C: 1 Pf max