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**SPECIFICATION FOR APPROVAL**

CUSTOMER	Blume
CERTIFIED	
MODEL/TYPE	GQF3R150-M
PART NO.	GQF3R150MRM(RoHS+HF)
APPLICATION	
CUSTOMER P/N	
ISSUE DATE	Oct.20, 2025
REV. NO.	
REV. DATE	

FOR CUSTOMER APPROVAL	CHECKED BY
	<i>Yuan Feng</i>
	APPROVED BY
	<i>Huaifang Zhang</i>





Gas Discharge Tube Type

Part No.:GQF3R150MRM

REVISED RECORD SHEET

REV. NO	REV. DATE	REVISED CONTENT



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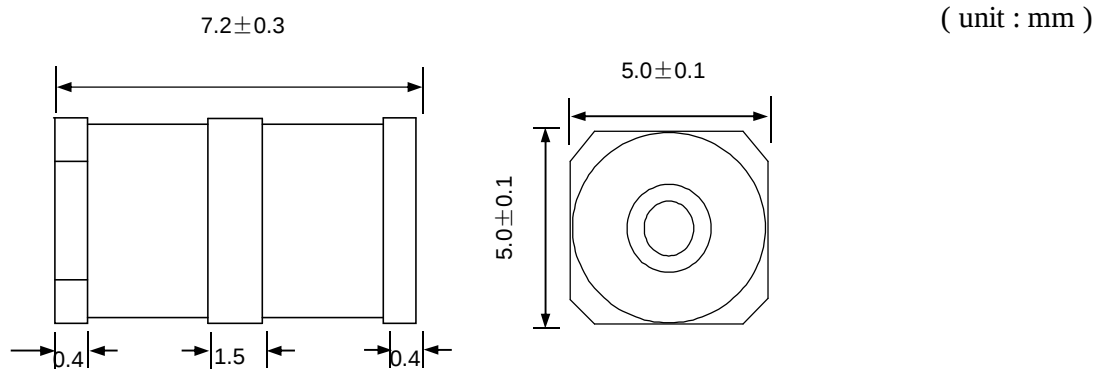
Part number code

Example

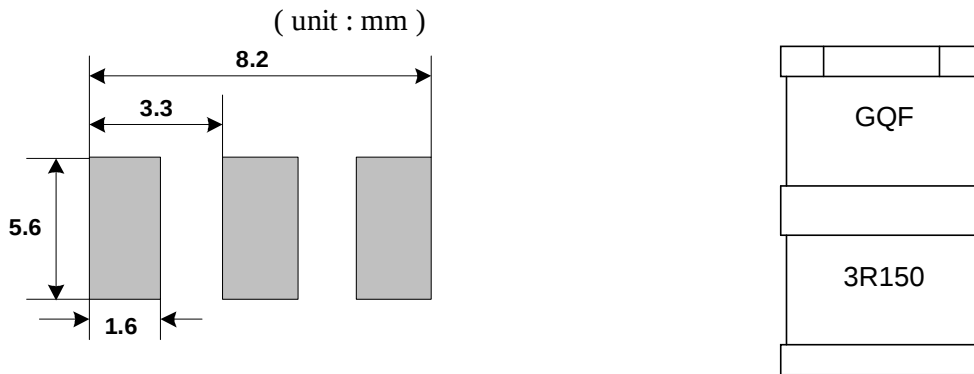
<u>G</u>	<u>QF</u>	<u>3R</u>	<u>150</u>	<u>M</u>	<u>R</u>	<u>M</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

No.	Item	Digit	Specification
(1)	Product Code	G	Thinking Gas Discharge Tube Type
(2)	Type Series(size)	QF	Φ5.0*T7.2
(3)	Electrode Number	3R	3 Electrodes
(4)	DC Spark-over Voltage	150	150V(100V/s)
(5)	Lead Wire Style	M	No Lead
(6)	Packaging	R	Taping(Reel)
(7)	Product Type	M	SMD

Structure and Dimensions



Recommended Pad Size&Marking



Electrical Characteristics

Part No.	DC Spark-over Voltage	Max. Impulse Breakdown Voltage		Max. Impulse Discharge Current (8/20 μ s)		Impulse Life (10/1000 μ s)
	(100V/s)	(100V/ μ s)	(1KV/ μ s)	1time	10 times	200A
	(V)	(V)	(V)	(KA)	(KA)	Times
GQF3R150MRM	150±20%	500	600	10	5	300

Part No.	Normal Alternating Discharge Current	DC Holdover Voltage	Min. Insulation Resistance	Max. Capacitance	Operation temperature	storage temperature
	50Hz, 1s	< 150ms	(G Ω)	@1MHz	(°C)	(°C)
	(A)	(V)		(pF)		
GQF3R150MRM	5	80	1	2	-40~105	-40~+115

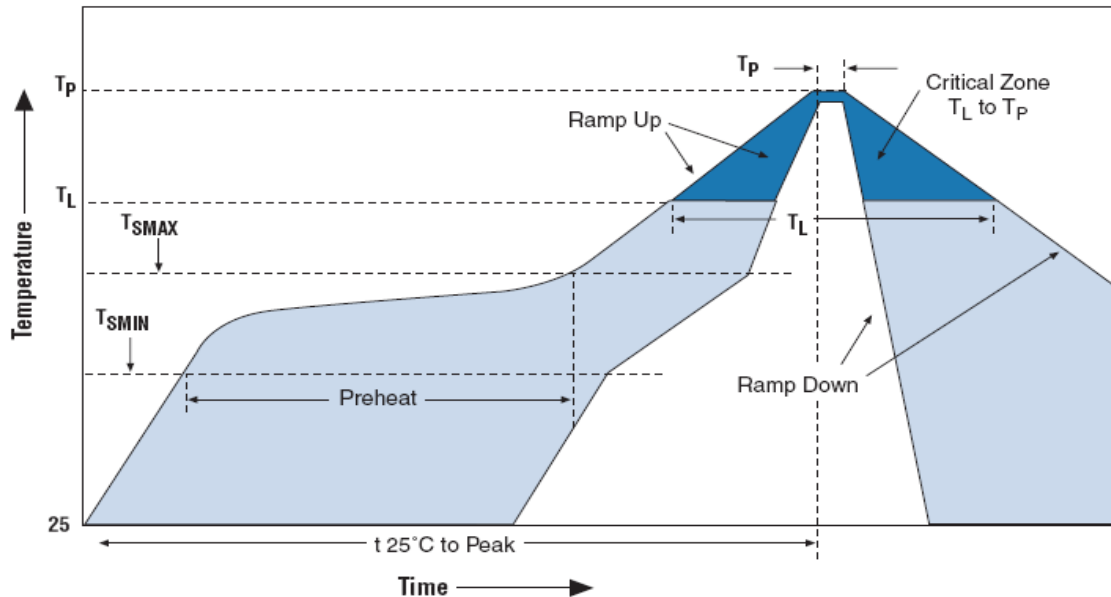


Reliability

Item	Standard	Test conditions / Methods	Specifications															
Solderability	IEC60068-2-58	245 ± 3 °C , 3 ± 0.3sec	at least 95% of terminal electrode is covered by new solder															
Resistance to soldering heat	IEC60068-2-58	260 ± 3 °C , 10 ± 1sec	ΔV/V ≤25% No visible damage															
Temperature Cycle Test	IEC60068-2-14	The thermal shock conditions shown below shall be repeated 5 cycles <table><tr><th>Step</th><th>Temperature (°C)</th><th>Period (minutes)</th></tr><tr><td>1</td><td>-40 ± 2</td><td>30</td></tr><tr><td>2</td><td>Room temperature</td><td>4</td></tr><tr><td>3</td><td>105 ± 2</td><td>30</td></tr><tr><td>4</td><td>Room temperature</td><td>4</td></tr></table>	Step	Temperature (°C)	Period (minutes)	1	-40 ± 2	30	2	Room temperature	4	3	105 ± 2	30	4	Room temperature	4	ΔV/V ≤25% No visible damage
Step	Temperature (°C)	Period (minutes)																
1	-40 ± 2	30																
2	Room temperature	4																
3	105 ± 2	30																
4	Room temperature	4																
Humidity Resistance	IEC60068-2-3	40 ± 2°C , 90 ~ 95 % RH , 1000 ± 24hrs	ΔV/V ≤25% No visible damage															
High Temp. Storage	GB/T9043 7.7	105 ± 2 °C , 2 hrs	ΔV/V ≤25% No visible damage															
Low Temp. Storage	GB/T9043 7.8	-40± 2 °C , 2 hrs	ΔV/V ≤25% No visible damage															

Soldering Recommendation

IR-Reflow Soldering Profile



Lead-Free Reflow Profile Recommendation (IPC/JEDEC J-STD-020C)

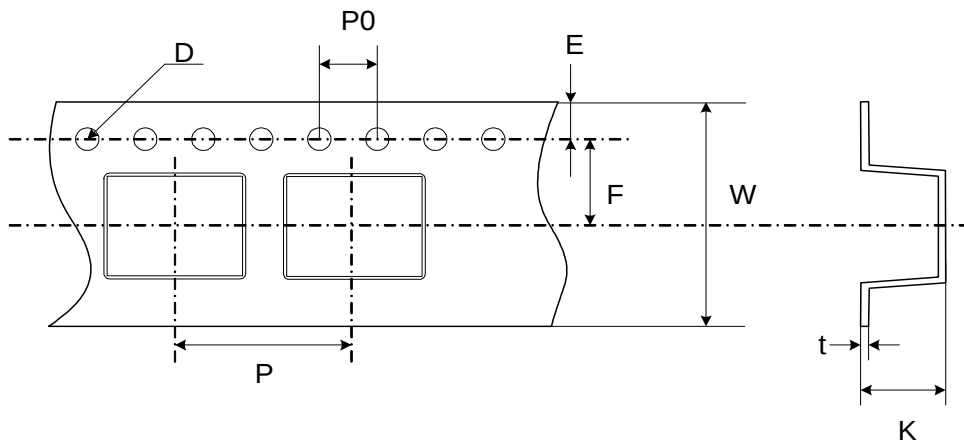
Reflow Parameter	Lead-Free Assembly
Minimum preheat temperature (T_{SMIN})	150°C
Maximum preheat temperature (T_{SMAX})	200°C
Preheat Time	60-180 seconds
T_{SMAX} to T_L ramp-up rate	3°C/second maximum
Time above temperature T_L (t_L)	217°C 60-120 seconds
Peak Temperature (T_P)	245°C ~260°C(recommended 250°C)
Time 25°C to T_P	6 minute maximum
Time within 5° of Peak T_P	10-20 seconds
Ramp-down rate	4°C/second maximum

Recommended Reworking Conditions with Soldering Iron

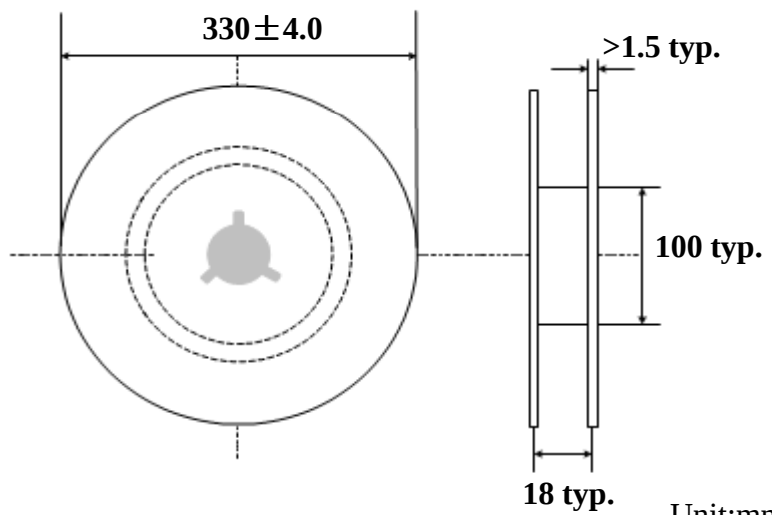
Item	Conditions
Temperature of Soldering Iron-tip	360°C (max.)
Soldering Time	3 sec (max.)
Diameter of Soldering Iron-tip	Φ3mm (max.)
Caution: Please do not touch the component surface with soldering iron directly to avoid its damage.	



Packaging



Quantity: 900 pcs per reel (13")



Unit:mm

ITEM	P	P0	W	F	E	D	K	t
Spec.	12.0	4.0	16.0	7.5	1.75	Φ1.55	5.5	0.5
Tol.	±0.1	±0.1	±0.3	±0.1	±0.1	±0.05	±0.1	±0.05



RoHS Compliant Declaration

We hereby declare that the components delivered to your company are compliant with EC RoHS Directive (2015/863/EU)

Restriction of Weapon and Military End-Use

Thinking has established and implemented the fundamental policy on none of our product should be used or sold, through any channels, for use in the design, development, production, utilization, maintenance or operation of, or otherwise contribution to any weapons (Weapons of Mass Destruction [nuclear, chemical or biological weapons or missiles] or conventional weapons) or goods or systems specially designed or intended for military end-use or utilization by military end-users.

Storage Conditions of Products

(I) Storage Conditions :

1.Warehouse Storage Temperature : -10°C~+40°C

Storage Temperature : -40°C~+115°C

2.Relative humidity : $\leq 75\%RH$

3.Gas Discharge Tube must be kept away from sunlight and stored in a non-corrosive atmosphere.

(II) Period of Storage : 1 year



Safety Approvals



*UL 497B recognized (File # E245070)

Certificates

(1) ISO9001 certificate

Test Report

(1) RoHS SGS test report

(2) Halogen-free SGS test report