EN: This Datasheet/Document is presented by the manufacturer.

Please visit our website for pricing and availability at www.hestore.hu.

Description

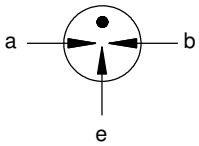
Gas discharge tubes (GDT) use noble gasses enclosed in ceramic tubes to provide an alternate circuit path for voltage spikes. The ceramic envelope and with nickel connectors allow for high loads. 3RA-5S Gas Discharge Tubes (GDT) series has a surge rating of 5kA, 8/20μs.Offered in a Squared Surface Mount package, which helps to make pick and place on PCB process easier.

This GDT series is perfectly suited for broadband equipment applications. The GDT's low off-state capacitance is compatible with high bandwidth applications and this capacitance loading value does not vary if the voltage across the GDT changes.

3RA-5S Gas Discharge Tube (GDT) series are specifically designed for protection of electrical, multimedia, and communication equipment against over voltage transients in surface mount assembly applications.



Electrical symbol



a = Tip
b = Ring
e = Ground
(center electrode)

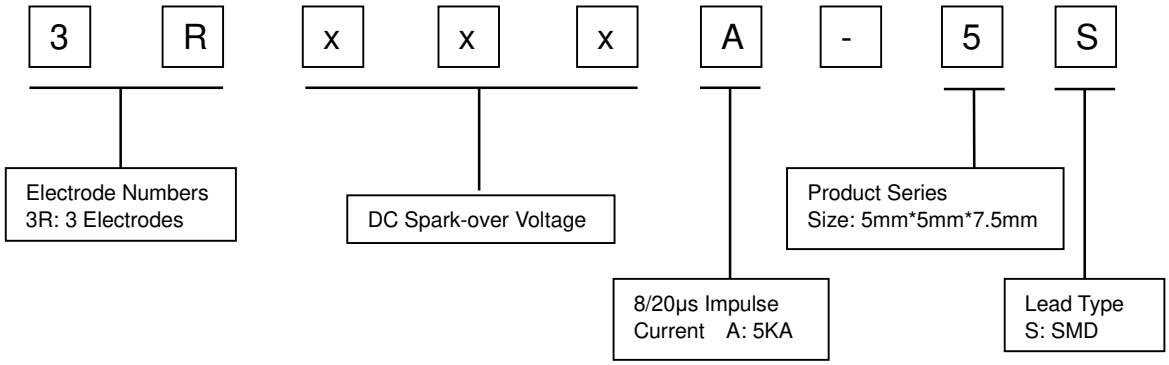
Features

- Excellent response to fast rising transients
- Stable breakdown voltage
- GHz working frequency
- 8/20μs Impulse current capability: 5KA
- Surface Mount package
- Non-Radioactive
- Ultra Low capacitance (<1pF)
- High insulation resistance
- Lead-free and RoHS compliant
- Size: 5mm*5mm*7.5mm
- Storage and operational temperature: -40~+90°C

Applications

- Communication equipment
- CATV equipment
- Data lines
- Power supplies
- Telecom SLIC protection
- Broadband equipment
- ADSL equipment, including ADSL2+
- XDSL equipment
- Satellite and CATV equipment
- Test equipment
- Consumer electronics

Part Number Code



Electrical Characteristics

Part Number	DC Spark-over Voltage [1) 2) 3)] @100V/S	Impulse Spark-over Voltage [3)]		Insulation Resistance [4)]	Capacitance @1MHz	Life Ratings			
		100V/μS	1KV/μS			Impulse Discharge Current @8/20μs [5)]		AC Discharge Current @50Hz 1S [5)]	Impulse Life @10/1000μS 200A [5)]
		Max	Max	Min	Max	Nominal ±5 times	Max 1 time	Nominal 5 times	Min
	V	V	V	GΩ	pF	KA	KA	A	Times
3R075A-5S	75±20%	500	600	1	1	5	6	5	100
3R090A-5S	90±20%	500	600	1	1	5	6	5	100
3R150A-5S	150±20%	500	600	1	1	5	6	5	100
3R200A-5S	200±20%	600	700	1	1	5	6	5	100
3R230A-5S	230±20%	600	700	1	1	5	6	5	100
3R250A-5S	250±20%	600	700	1	1	5	6	5	100
3R350A-5S	350±20%	800	900	1	1	5	6	5	100
3R400A-5S	400±20%	850	950	1	1	5	6	5	100
3R420A-5S	420±20%	850	950	1	1	5	6	5	100
3R470A-5S	470±20%	900	1000	1	1	5	6	5	100
3R600A-5S	600±20%	1100	1200	1	1	5	6	5	100
3R800A-5S	800±20%	1400	1500	1	1	5	6	5	100

Glow Voltage at 10mA.....	~60V
Arc Voltage at 1A.....	~10V
Glow to Arc transition Current.....	~0.3A
Weight.....	~0.8g
Operation and storage temperature.....	-40~90°C
Climatic category (IEC 60068-1).....	40/090/21
Marking, Blue.....	**RUILON** **xxx A X** xxx -Nominal voltage A -Nominal Impulse Discharge Current X -Year of production
Surface treatment.....	Matte-tin plated

1) At delivery AQL 0.65 level II, DIN ISO 2859

2) In ionized mode

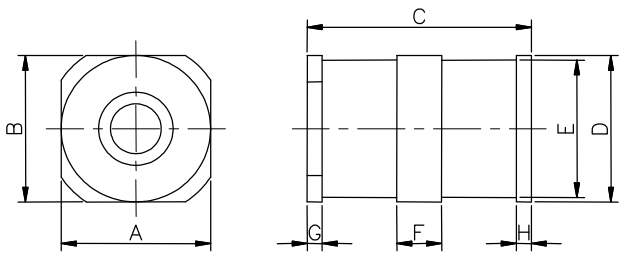
3) Tip or ring electrode to center electrode

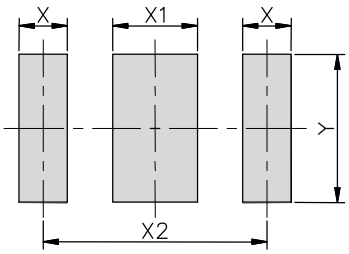
4) Insulation Resistance Measuring Voltage:
75V at DC 25V
90V~150V at DC 50V
Other at DC 100V

5) Total current through center electrode, half value through tip respectively ring electrode.

Terms in accordance with ITU-T Rec. K.12, IEC 61643-311, GB/T 9043.

Dimensions

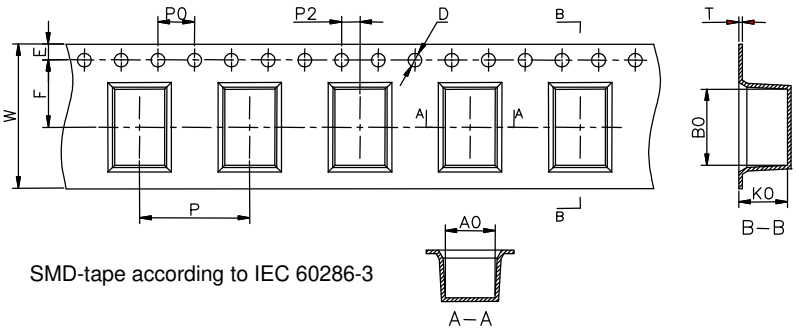




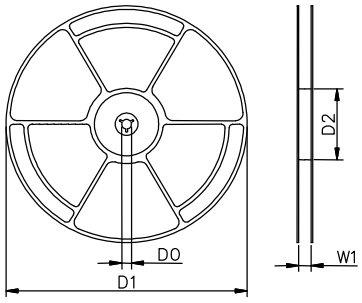
Recommended Soldering Pad Layout

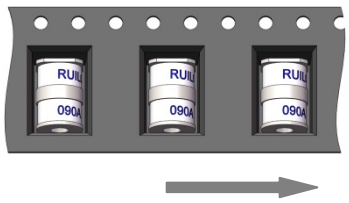
Symbol	Millimeters	Inches
A	5.0±0.2	0.197±0.008
B	5.0±0.2	0.197±0.008
C	7.5±0.3	0.295±0.012
D	Φ5.0±0.2	Φ0.197±0.008
E	Φ4.7±0.1	Φ0.185±0.004
F	1.5±0.1	0.059±0.004
G	0.4±0.1	0.016±0.004
H	0.4±0.1	0.016±0.004
X	1.6	0.063
X1	2.8	0.110
X2	7.4	0.291
Y	5.0	0.197

Taping and Reel Specifications



SMD-tape according to IEC 60286-3





Direction of Unreeling

Symbol	Millimeters	Inches
W	16±0.3	0.630±0.012
A0	5.4±0.1	0.213±0.004
B0	8.4±0.1	0.331±0.004
K0	5.3±0.1	0.209±0.004
P	12±0.1	0.472±0.004
F	7.5±0.1	0.295±0.004
E	1.75±0.1	0.069±0.004
D	1.5+0.1/-0.0	0.059+0.004/-0.0
P0	4±0.1	0.157±0.004
P2	2±0.1	0.079±0.004
T	0.4±0.1	0.016±0.004
D0	13.3±0.15	0.524±0.006
D1	330±2	12.992±0.079
D2	100+1/-2	3.937+0.039/-0.079
W1	16.5±0.4	0.65±0.016

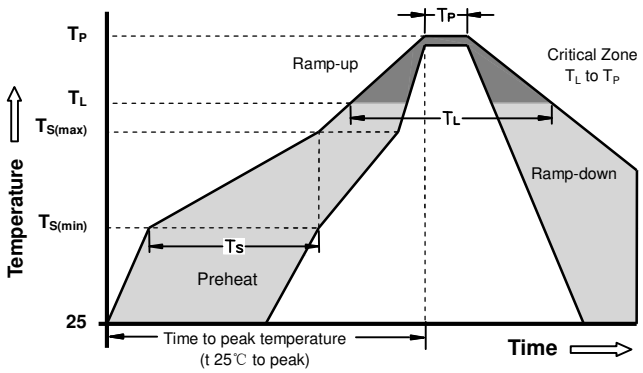
Packaging Quantity:

1,000 PCS per reel (13”)

3 reels per inner box

3,000 PCS per inner box

Soldering Parameters - Reflow Soldering (Surface Mount Devices)



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 Seconds
Average ramp up rate (Liquids Temp T_L) to peak		3°C/second max
$T_{S(max)}$ to TL - Ramp-up Rate		5°C/second max
Reflow	**- Temperature (T_L) (Liquids)**	217°C
	- Time (min to max) (t_s)	60 -150 Seconds
Peak Temperature (T_P)		260 +0/-5°C
Time within 5°C of actual peak Temperature (t_p)		10 - 30 Seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max
Do not exceed		260°C