

Double line Gas Discharge Tube

Description

Gas discharge Tubes (GDT) are classical components for protecting the installations of the telecommunications. It is essential that IT and telecommunications systems -with their high-grade but sensitive electronic circuits - be protected by arresters. They are thus fitted at the input of the power supply system together with varistors and at the connection points to telecommunication lines. They have become equally indispensable for protecting base stations in mobile telephone systems as well as extensive cable television (CATV) networks with their repeaters and distribution systems.

These protective components are also indispensable in other sectors, In AC power transmission systems, they are often used with current-limiting varistors, In customer premises equipment such as DSL modems, WLAN routers, TV sets and cable modems In air-conditioning equipment, the integral black-box concept offers graduated protection by combining arresters with varistors, PTC, diodes and inductor

Features

- ◆ Non-Radioactive
- ◆ ROHS compliant
- ◆ Ultra low capacitance
- ◆ Low insertion loss
- ◆ Excellent response to fast rising transients
- ◆ 5KA surge capability tested with 8/20µs pulse as defined by IEC 61000-4-5

Applications

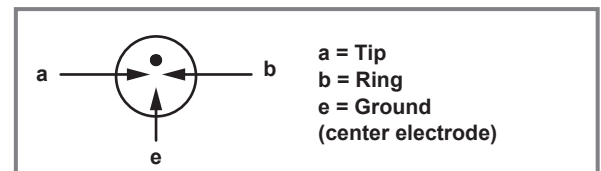
- ◆ Communication equipment
- ◆ CATV equipment
- ◆ Test equipment
- ◆ Data lines
- ◆ Power supplies
- ◆ Telecom SLIC protection
- ◆ Broadband equipment
- ◆ ADSL equipment, including ADSL2+
- ◆ XDSL equipment
- ◆ Satellite and CATV equipment
- ◆ Consumer electronics



www.unsemi.com.tw



Schematic Symbol



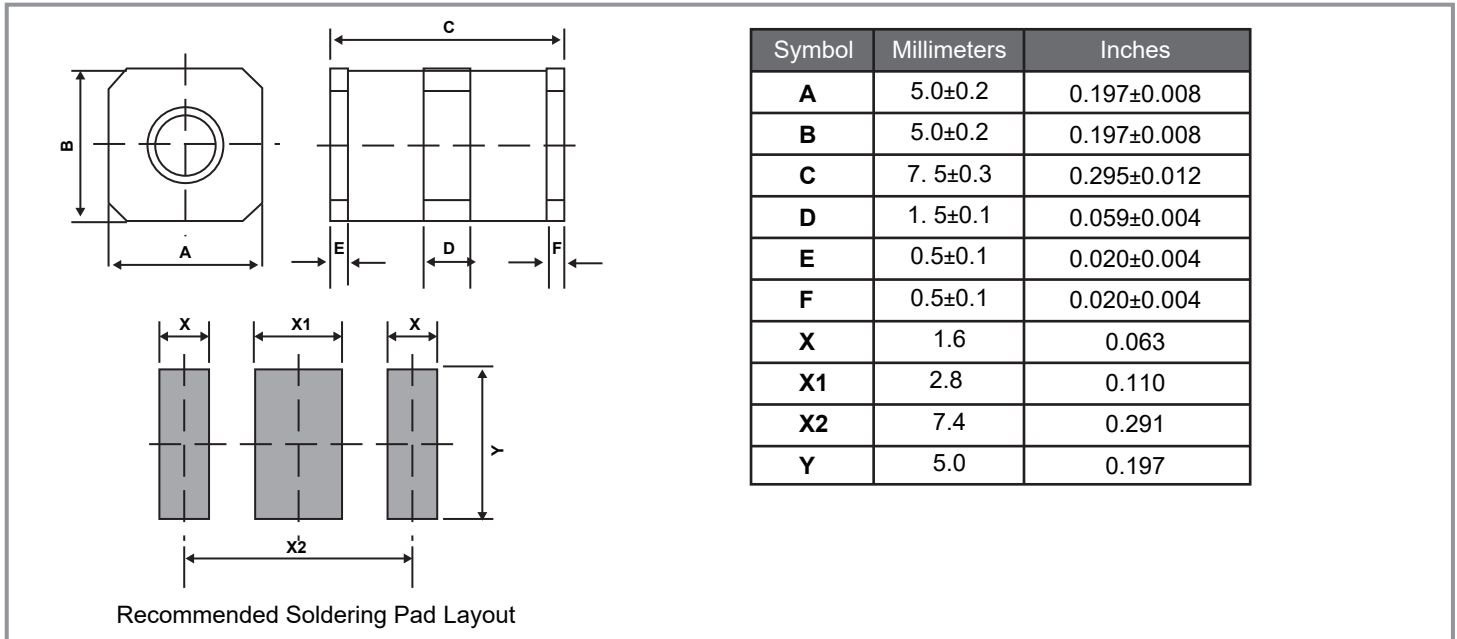
Agency Approvals

AGENCY	AGENCY FIL ENUMBER
	E466847

Product Characteristics

Materials	surface mount: Dull Tin-plated	
Product Marking	Without	
Glow to Arc Transition Current	< 0.5 Amps	
Glow Voltage	~ 60 Volts	
Storage and Operational Temperature	- 40 to +90°C	
Weight	UN3E5-XXXHSMD	~0.88 g

Dimensions (Unit: mm)

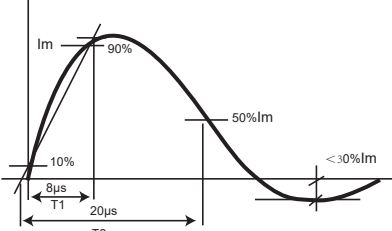


Electrical Characteristics

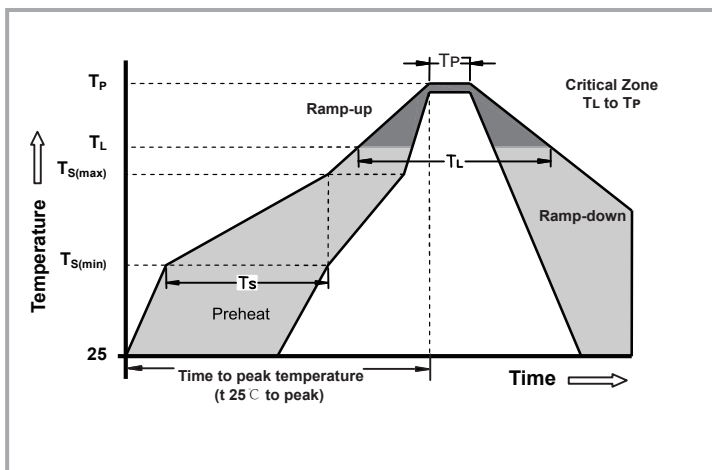
Part Number	DC Spark-over Voltage	Minimum Insulation Spark-over Voltage		Minimum Insulation Resistance	Maximum Capacitance	Arc Voltage	Service Life			
		@100V/μS	@1KV/μS				Nominal Impulse Dis charge Current	Max Impulse Discharge Current	Nominal Alternating Discharge Current	Impulse Life
		@100V/S	@100V/μS				@8/20μS ±5times	@8/20μs 1 time	@50Hz 1 Sec 10 times	@10/1000μs 300 times
UN3E5-75MSMD	75±20%	500V	600V	1GΩ (at 25V)	1pF	~15V	5KA	6KA	5A	100 Times
UN3E5-90MSMD	90±20%	500V	600V	1GΩ (at 50V)	1pF	~15V	5KA	6KA	5A	100 Times
UN3E5-150MSMD	150±20%	500V	600V	1GΩ (at 50V)	1pF	~20V	5KA	6KA	5A	100 Times
UN3E5-200MSMD	200±20%	600V	700V	1GΩ (at 100V)	1pF	~20V	5KA	6KA	5A	100 Times
UN3E5-230MSMD	230±20%	600V	700V	1GΩ (at 100V)	1pF	~20V	5KA	6KA	5A	100 Times
UN3E5-250MSMD	250±20%	600V	700V	1GΩ (at 100V)	1pF	~20V	5KA	6KA	5A	100 Times
UN3E5-350MSMD	350±20%	800V	900V	1GΩ (at 100V)	1pF	~20V	5KA	6KA	5A	100 Times
UN3E5-400MSMD	400±20%	850V	950V	1GΩ (at 100V)	1pF	~20V	5KA	6KA	5A	100 Times
UN3E5-420MSMD	420±20%	850V	950V	1GΩ (at 100V)	1pF	~20V	5KA	6KA	5A	100 Times
UN3E5-470MSMD	470±20%	900V	1000V	1GΩ (at 100V)	1pF	~20V	5KA	6KA	5A	100 Times
UN3E5-600MSMD	600±20%	1100V	1200V	1GΩ (at 100V)	1pF	~20V	5KA	6KA	5A	100 Times
UN3E5-800MSMD	800±20%	1400V	1500V	1GΩ (at 100V)	1pF	~20V	5KA	6KA	5A	100 Times

Note: (1) At delivery AQL 0.65 level I, 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.

Electrical Rating

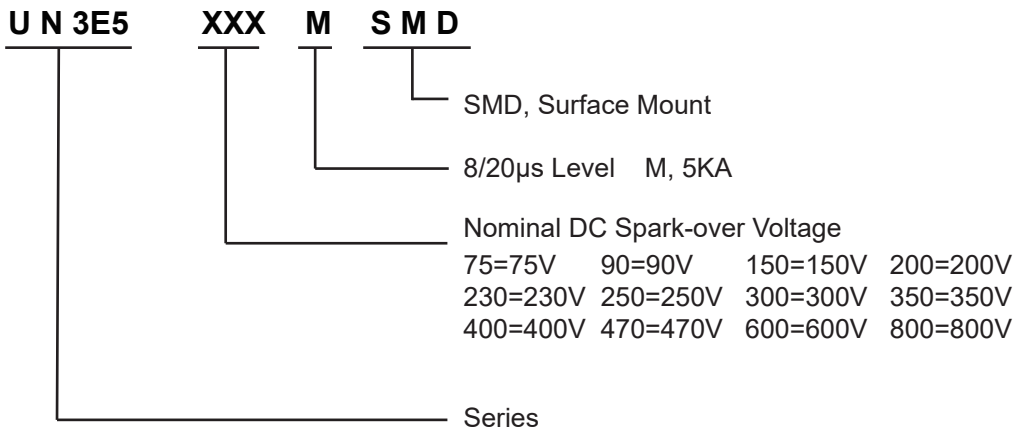
Item	Test Condition Description	Requirement
DC Spark-over Voltage	The voltage is measured with a slowly rate of rise $dv / dt=100V/s$	To meet the specified value
Impulse Spark-over Voltage	The maximum impulse spark-over voltage is measured with a rise time of $dv / dt=100V/\mu s$ or $1KV/\mu s$	
Insulation Resistance	The resistance of gas tube shall be measured each terminal each other terminal, please see above spec.	
Capacitance	The capacitance of gas tube shall be measured each terminal to each other terminal. Test frequency :1MHz	
Nominal Impulse Discharge Current	The maximum current applying a waveform of 8/20 μs that can be applied across the terminals of the gas tube. One hour after the test is completed, re-testing of the DC spark-over voltage does not exceed $\pm 30\%$ of the nominal DC spark-over voltage. Dwell time between pulses is 3 minutes. 	
Nominal Alternating Discharge Current	Rated RMS value of AC current at 50Hz, 1 sec. 10 times. Intervals: 3min. The DC spark-over voltage does not exceed $\pm 30\%$ of the nominal DC spark-over voltage. IR > 10 ⁸ ohms.	

Recommended soldering profile



Reflow Condition		pd-Lead-free assembly
Pre Heat	-Temperature Min (Ts(min))	150°C
	-Temperature Max (Ts(max))	200°C
	- Time (min to max) (Ts)	60 -180 Seconds
Average ramp up rate (Liquidus Temp TL) to peak		3°C/second max
Ts(max) to TL - Ramp-up Rate		5°C/second max
Reflow	- Temperature (TL) (Liquidus)	217°C
	- Time (min to max) (Ts)	60 -150 Seconds
Peak Temperature (TP)		260 +0/-5°C
Time within 5°C of actual peak Temperature (TP)		10 - 30 Seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max
Do not exceed		260°C

Part Numbering

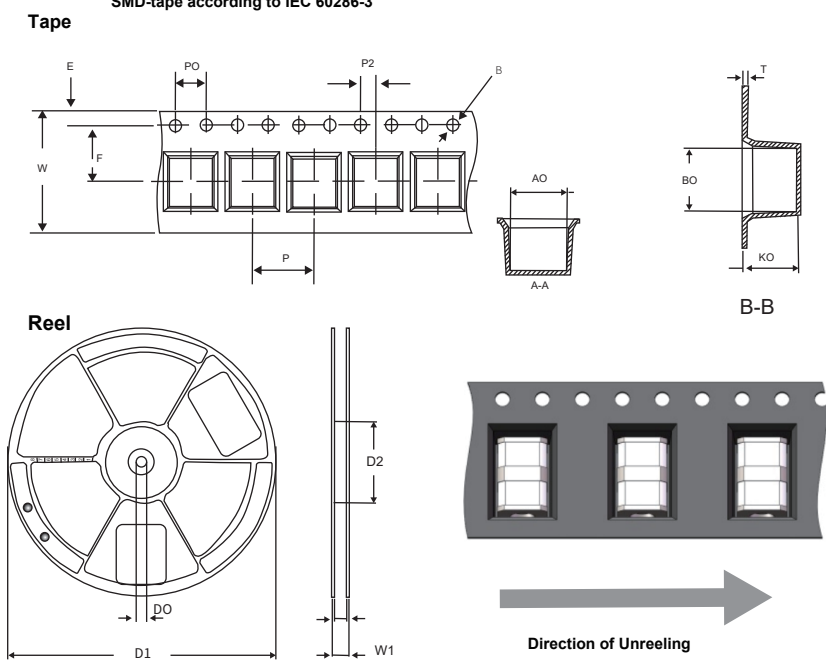


Packaging

Part Number	Description	Quantity
UN3E5-XXXMSMD	16mmTape & 13" Reel	1000

Tape and Reel Dimension (Unit: mm)

SMD-tape according to IEC 60286-3



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

Disclaimer

UNSEMI RESERVES THE RIGHT TO MAKE CHANGE ON OUR PRODUCTS , PRODUCTS SPECIFICATION AND DATA WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

UN SEMICONDUCTOR LIMITED its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "UNSEMI") does not give any representations or warranties for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

In no event shall UNSEMI be liable for any indirect, incidental, punitive, special or consequential damages (including any and all implied warranties, warranties of fitness for particular purpose, non-infringement and merchantability.) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory.

Statements regarding the suitability of products for certain types of applications are based on UNSEMI knowledge of typical requirements that are often placed on UNSEMI products in generic applications. Such statements are not binding, statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify UNSEMI's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Unless otherwise agreed in writing, UNSEMI product is not designed, authorized or warranted to be suitable for use in medical life-saving, or life-sustaining application , nor in applications where failure or malfunction of a UNSEMI product can reasonably be expected to result in personal injury, death or severe property or environmental damage. UNSEMI and its suppliers accept no liability for inclusion or use of UNSEMI products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

All referenced brands, product names, service names and trademarks are the property of their respective owners.