

Electrical Characteristics

Part Number	Device Specifications (at 25°C)										Life Ratings								
	DC Breakdown in Volts (@ 100V/s)			Impulse Breakdown in Volts (@ 100V/μs)	Impulse Breakdown In Volts (@ 1 Kv/ μsec)	Insulation Resistance	Capacitance (@ 1MHz)	Arc Voltage (@ 1A)	Glow to Arc Transition Current	Glow Voltage	Nominal AC Discharge Current (x10 @50Hz)	Nominal Impulse Discharge Current (x10 @8/20μs)	Nominal Impulse Discharge Current (10/1000μs 100 cycles)						
	Min.	Typ.	Max.	Max.		Min.	Max.												
SG75	52	75	98	500	650	>1GΩ (at 50VDC)	<1 pf	~10 V	~1.0 A	~60 V	2 A	2kA	10 A						
SG90	63	90	117	500	600														
SG150	105	150	195	500	600														
SG200*	140	200	260	550	700	>1GΩ (at 100VDC)	<0.8 pf	~12 V	~0.5 A	~140 V	2.5 A	1kA							
SG230	172	230	288	650	800														
SG300	225	300	375	700	850														
SG300Q	210	300	390	580	650	>1GΩ (at 50VDC)	<0.8 pf	~12 V	~0.5 A	~140 V	NA*	1kA							
SG350	263	350	437	750	900														
SG350Q	263	350	437	600	700														
SG400	300	400	500	800	950														
SG420	315	420	525	800	1000														
SG420Q	315	420	525	650	750						<1 pf			~10 V	<1.0 A	~60 V	2 A		
SG450Q	370	450	500	680	750														
SG500Q	400	500	600	950	1050														
SG600Q	450	600	750	1100	1200						>1GΩ (at 100VDC)			<0.5 pf	~16 V	~0.1 A	~140 V	2 A	
											<1 pf			~20 V	<0.5 A				

* Specification is not applicable for quick response (SGxxxQ) version of product

+ Not UL Recognized

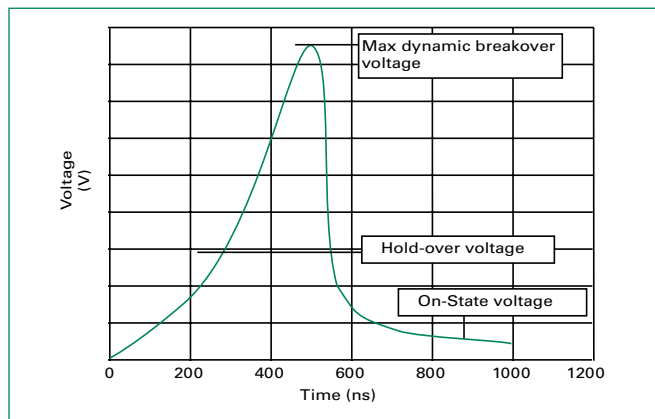
Product Characteristics

Materials	Device Tin Plated 17.5±12.5 Microns Construction Ceramic Insulator.
Storage and Operational Temperature	-40 to +90 °C

Typical Insertion Loss

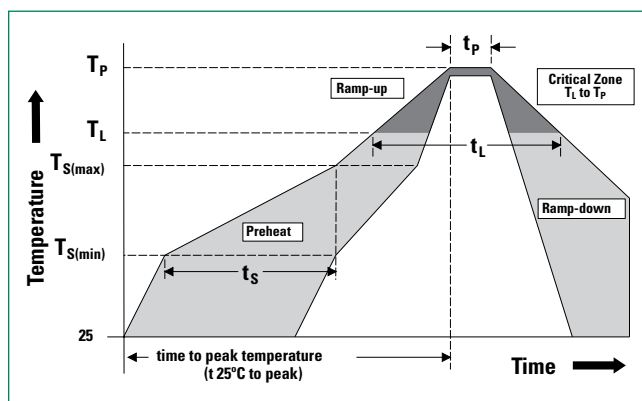
	@ 1.0 GHz = 0.01 dB
	@ 1.4GHz = 0.1 dB
	@ 1.8 GHz = 0.53 dB
	@ 2.1 GHz = 0.81 dB
	@ 2.45 GHz = 1 dB
	@ 2.8 GHz = 1.2 dB
	@ 3.1 GHz = 1.5 dB
	@ 3.5 GHz = 2.1 dB

Voltage vs. Time Characteristic

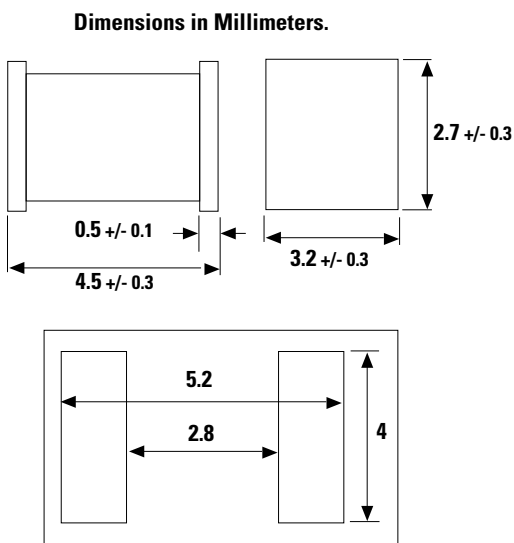


Soldering Parameters - Reflow Soldering (Surface Mount Devices)

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 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		5°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (t_L)	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

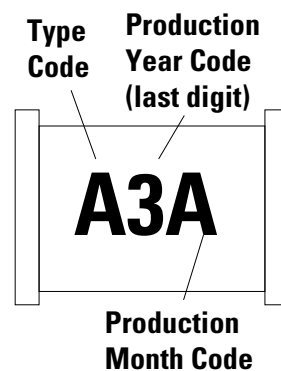


Device Dimensions



Recommended Soldering Pad Layout

Device Marking



Type Code	
A	SG75
B	SG90
C	SG150
D	SG230
E	SG300
F	SG300Q
G	SG350
H	SG350Q
I	SG400
J	SG420
K	SG420Q
L	SG450Q
M	SG500Q
N	SG600Q
O	SG200

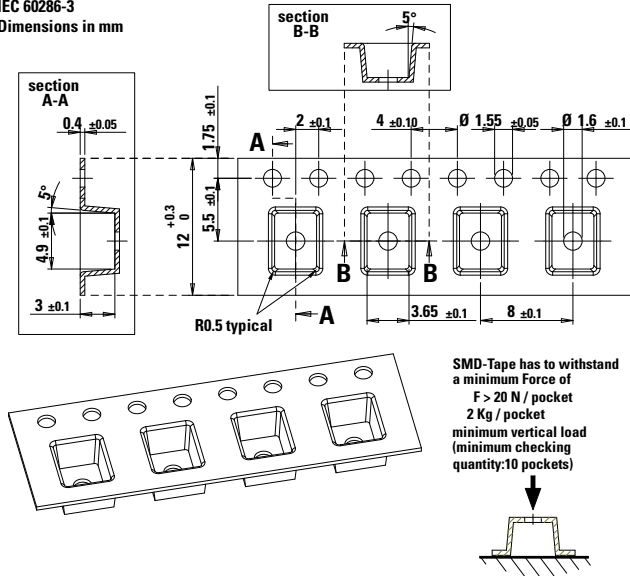
Month Code	
A	January
B	February
C	March
D	April
E	May
F	June
G	July
H	August
I	September
J	October
K	November
L	December

Tape and Reel Dimensions (IEC 60286-3, dimension in mm)

Tape Specifications

IEC 60286-3

Dimensions in mm



Part Numbering System and Ordering Information

SG xxx Q

Series

Square GDT

Breakdown Voltage

75 = 75V

90 = 90V

150 = 150V

200 = 200V

230 = 230V

300 = 300V

350 = 350V

400 = 400V

420 = 420V

450 = 450V

(Not available without "Q" suffix)

500 = 500V

(Not available without "Q" suffix)

600 = 600V

(Not available without "Q" suffix)

Device Option Code

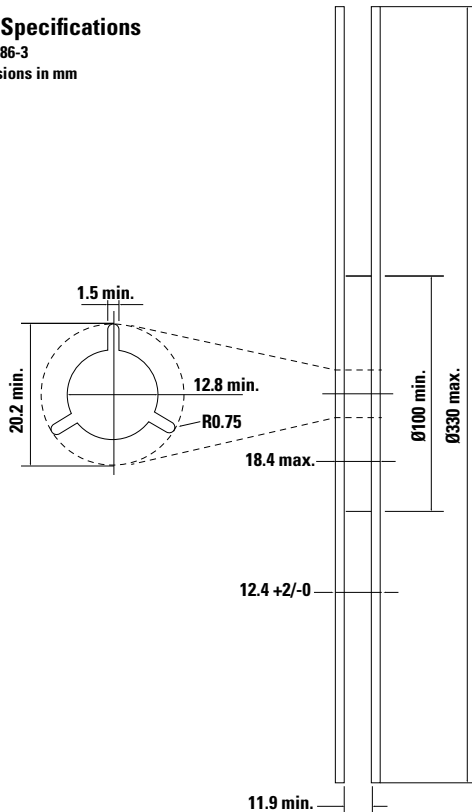
(Blank) = Standard device

Q = Quick Response Version
(300V, 350V, 420V, 450V,
500V, 600V only)

Reel Specifications

IEC 60286-3

Dimensions in mm



Packaging

Part Number and Device Type	Quantity and Packaging Description
SGxxx	Surface mount
	2000pcs/reel in tape and reel