



APPROVAL SHEET

Customer Information

Customer :			
Part Name :			
Part No. :			
Model No. :			
COMPANY	PURCHASE	R&D	

Vendor Information

Name:	SFI ELECTRONICS TECHNOLOGY CORP. INC.
Part Name	
Part No.	SMD GDT series
Lot No.	

SFI ELECTRONICS TECHNOLOGY INC.			
ADDRESS : No.6, Lane 340, Shan-Ying Road , Guishan,Tao Yuan Taiwan			
TEL: 886-3-3506998 FAX: 886-3-3507689 E-mail: sfi@sfi.com.tw			
Quality Control	Document Control	Business Issue	
 DIN EN ISO 9001 Certificate: 01 100 008833	REV : A	Prepared	Check
		YC Chang	Jean Yi

Part No. :	SMD GDT-series	Document No.	001	REV.	A
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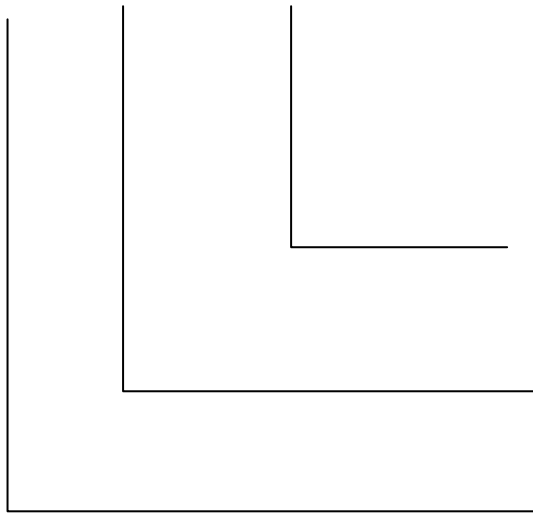


PART NO. 4532G-XXX

1. Part Number Identification

Ex:

SFI 4532 G 600

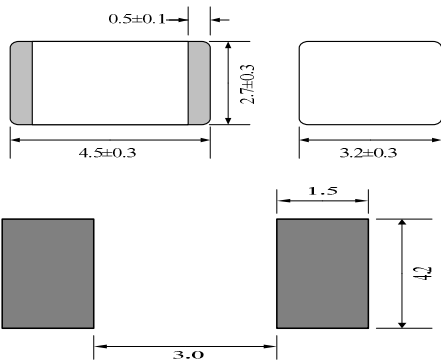


BDV Voltage:

Size

Series code

2. SIZE



Type	Length	Width	Electrode
3216(mm)	3.2 ± 0.30	1.6 ± 0.20	1.6 ± 0.20
4532(mm)	4.5 ± 0.30	3.2 ± 0.30	2.7 ± 0.30



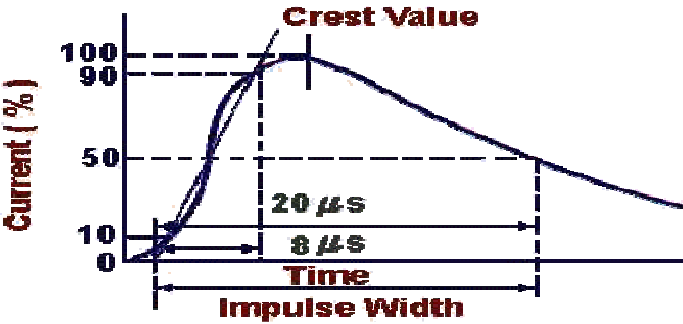
3. Specification

Part Number	DC Breakdown Voltage	DC Holdover voltage	Impulse Discharge Current	Alternating Discharge current	Impulse life test	Insulation resistance	Capacitance (1MHz 1V)
Symbol	V	V	8/20 μ s 500A Positive /Negative 5 times	50Hz is 0.5A 10 times	8/20 μ s 50A 300 times	100M Ω Min (DC 50V)	0.3pf Max
3216G-120	120(84~156)	52					
3216G-150	150(105~195)	52					
3216G-200	200(140~260)	80					
3216G-230	230(161~299)	80					
3216G-300	300(210~390)	150					
3216G-350	350(245~455)	150					
3216G-400	400(280~520)	150					
3216G-420	420(294~546)	150					
3216G-470	470(329~611)	150					
3216G-500	500(350~650)	150					
3216G-600	600(420~780)	150					
100M Ω Min (DC 100V)							
Part Number	DC Breakdown Voltage	DC Holdover voltage	Impulse Discharge Current	Impulse withstanding voltage capacity	Impulse life test	Insulation resistance	Capacitance (1MHz 1V)
4532G-075	75(55~95)	52	2000	10/700 μ s 4KV Positive /Negative 5 times	8/20 μ s 100A 300 times	100M Ω	0.5
4532G-090	90(63~117)	52					
4532G-120	120(84~156)	52					
4532G-150	150(105~195)	52					
4532G-200	200(140~260)	80					
4532G-230	230(161~299)	80					
4532G-300	300(210~390)	150					
4532G-350	350(245~455)	150					
4532G-400	400(280~520)	150					
4532G-420	420(294~546)	150					
4532G-470	470(329~611)	150					
4532G-600	600(420~780)	150					

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4. ELECTRICAL RATING

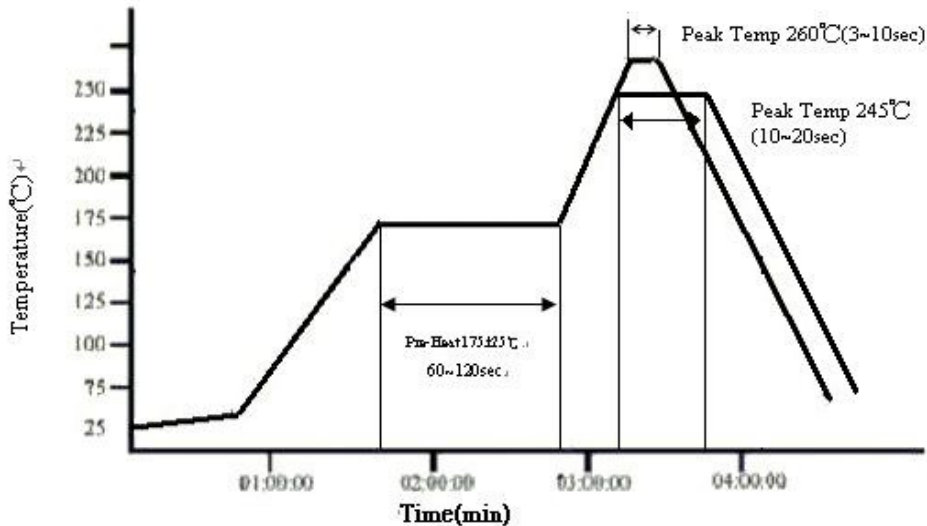
Item	Test Condition / Description	Requirement
DC Breakdown Voltage	The voltage is measured with a low rate of rise $dv / dt \cong 100 \text{ v/s}$	
Maximum Impulse Breakdown Voltage	The maximum impulse breakdown voltage is measured with a rise time of $dv / dt \cong 1000 \text{ v/}\mu\text{s}$	
Maximum Impulse Discharge Current	<p>The maximum current within gas tube voltage change of $\pm 20\%$ when one impulse is applied. Applied waveform : $8/20 \mu \text{ sec}$</p> 	To meet the specified value
Maximum AC Discharge Current	<p>Rated rms value of ac current at 50 Hz , 1sec. Requirements of: Intervals: 3 min 2-electrode gas tube 9 discharges 3-electrode gas tube 10 discharges</p>	
DC Holdover Voltage	The maximum DC voltage across the two terminals of gas tube under which it may be expected to return to the high impedance state after the gas tube breakdown.	
Insulation Resistance	The resistance of gas tube shall be measured each terminal to each other terminal. Applied voltage: gas tube dc breakdown voltage under 150V, the test voltage is 50V dc; with all other types at 100V dc.	
Capacitance	<p>The capacitance of gas tube shall be measured each terminal to each other terminal. Test frequency : 1 MHZ In measurements involving 3-electrode gas tubes ,the terminal not being tested shall be connected to a ground plane.</p>	

Temperature Rating

Storage : -40°C to $+115^{\circ}\text{C}$ Operation : -30°C to $+85^{\circ}\text{C}$

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5. Soldering profile recommend



☆ IR reflow Pb Free Process suggestion profile

- (1) The solder recommend is Sn96.5/Ag 3.5 of 120 to 150 μ m
- (2) Ramp-up rate (217°C to Peak) + 3°C/second max
- (3) Temp. maintain at 175 +/-25°C 180 seconds max
- (4) Temp. maintain above 217 °C 60-150 seconds
- (5) Peak temperature range 245°C +20°C/-10 °C time within 5 °C of actually peak temperature (tp) 10~20 seconds
- (6) Ramp down rate +6 °C/second max.

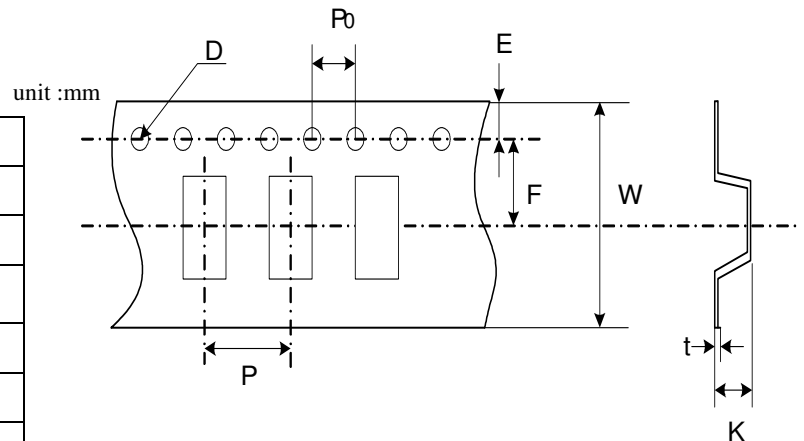
※Perform adequate test in advance as the reflow temperature profile will vary according to the conditions of the manufacturing process, and the specification of the reflow furnace.

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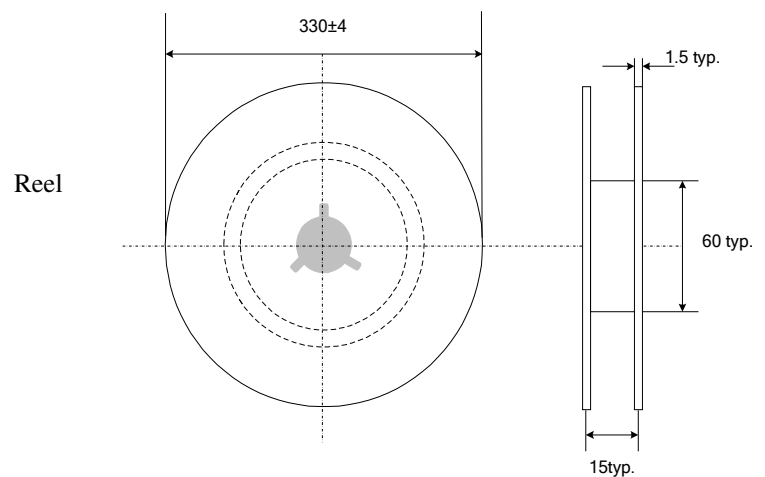
5. Package

Taping & Reel Specifications

Item	Spec
P	8.0±0.1
P0	4.0±0.1
W	12.0±0.3
F	5.45±0.1
E	1.75±0.1
D	Φ1.55±0.05
K	1.8±0.1
t	0.3±0.05



Quantity: 3000 pcs per reel
 3 reels per inner box
 5 inners box per carton
 45,000 pcs per full carton

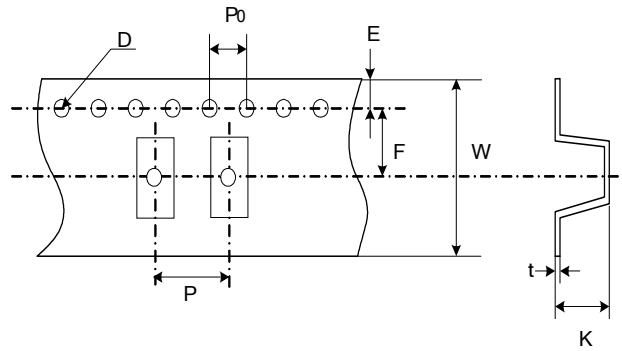




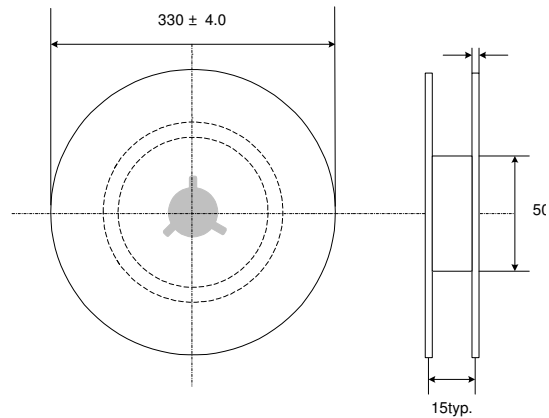
◆ **Chip 4532 GDT Taping**

◆ unit :mm

Item	Spec
P	8.0±0.1
P0	4.0±0.1
W	12.0±0.3
F	5.45±0.1
E	1.75±0.1
D	Φ1.55±0.05
K	3.5±0.2
t	0.3±0.1



Quantity: 2500 pcs per reel (13")
 3 reels per inner box
 5 inners box per car





Reliability Test Report

Test Item : Fast temperature cycling

Test condition : The temperature cycle shown below shall be repeated five times and then stored at room temperature and humidity for one to two hours. The change of Vb as well as mechanical damage shall be examined.

The temperature cycle : -40°C (-58°F) 30min to 85°C (185°F) 30min 5 cycles

Part No. : SFI 4532 200LF (example part)

Test result :

no	after test				after test				AE	BE
	Vs+	Vs-	Vsi+	Vsi-	Vs+	Vs-	Vsi+	Vsi-	$\Delta V/V\%$	$\Delta V/V\%$
1					203	205	544	568		
2					200	199	568	560		
3					204	202	542	560		
4					212	220	608	592		
5					196	202	576	588		
6					216	202	552	560		
7					203	210	596	592		
8					199	208	520	536		
9					190	192	544	560		
10					208	205	608	594		

Judge Criterion : $|\Delta V/V| < 25\%$

ΔV =after test breakdown voltage-before test breakdown voltage

Judge : pass

reject

Approval : sp hwang

Prepare :

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