

APPROVE SHEET

Customer : _____

Customer Part Number : SS12A SERIES

Grande Part Number : SS12 A SERIES

Issue Date : 8/6/2019

Approver Signature :

APPROVED BY : LuoYaCheng

PREPARED BY : LiuRuiFang/ZuoShengRong



SIYANG Grande Electronics co.,Ltd.

TEL: 86-0527-85678560

Northern Side of Dayuan Road&Western Side of
Guizui Road,Entire People Entrepreneur Park,Luji
Town,Siyang County,Suqian City,Jiangsu,China

TABLE OF CONTENTS

1.DATA SHEET PAGE 1

2. MARKING PAGE 6

3. TAPING PAGE 7

4. PACKING PAGE 8

5.HIGH RELIABILITY TEST SPEC. PAGE 10

SS12A SERIES

SURFACE MOUNT GENERAL PURPOSE RECTIFIER

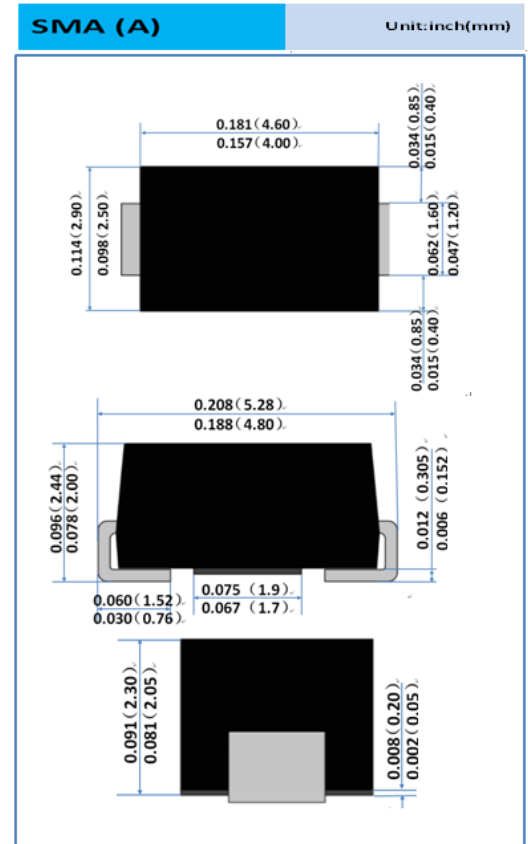
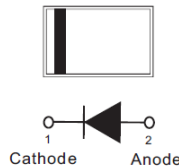
VOLTAGE 20 to 100 Volt **CURRENT** 1 Ampere

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- For surface mounted applications
- Low power loss, high efficiency
- High surge capacity
- High current capacity low VF
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

- Case: SMA(A) molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Indicated by cathode band
- Standard packaging: 12 mm tape (EIA-481)
- Weight: 0.0024 ounces, 0.0679 grams



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. .Resistive or inductive load

PARAMETER	SYMBOL	SS12A	SS13A	SS14A	SS15A	SS16A	SS18A	SS19A	S100A	UNITS
Maximum Recurrent Peak Reverse Voltage	VRRM	20	30	40	50	60	80	90	100	V
Maximum RMS Voltage	VRMS	14	21	28	35	42	56	63	70	V
Maximum DC Blocking Voltage	VDC	20	30	40	50	60	80	90	100	V
Maximum Average Forward Current at TL=75℃	IF(AV)	1								A
Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load	IFSM	30								A
Maximum Forward Voltage at 1A (Note 1)	VF	0.5			0.7		0.85			V
Maximum DC Reverse Current at Rated DC Blocking Voltage TJ=25℃ TJ=100℃	IR	0.5 50					0.5 20			mA
Typical Thermal Resistance (Note 2)	RθJL RθJA	28 88								℃/W
Operating Junction Temperature Range	TJ,	-55to+125			-55to+150					℃
Storage Temperature Range	TSTG	-55to+150								℃

NOTES : 1. Pulse Test with PW =300 μ sec ,1% Duty Cycle.

2. Mounted on P.C.,Board with 5m m²(0.013mm thick) copper pad area.

SS12A SERIES

RATING AND CHARACTERISTIC CURVES

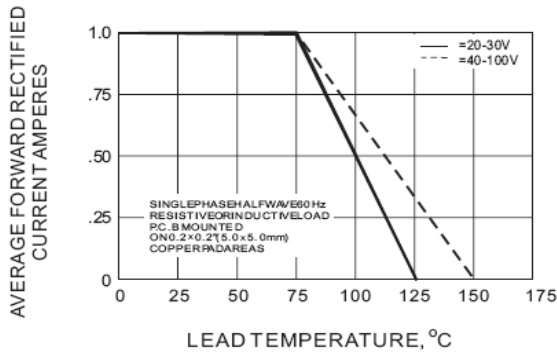


Fig.1 FORWARD CURRENT DERATING CURVE

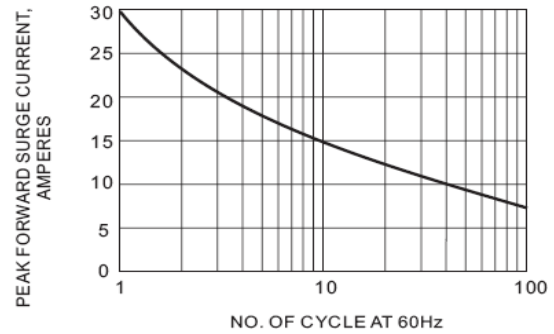


Fig.2 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

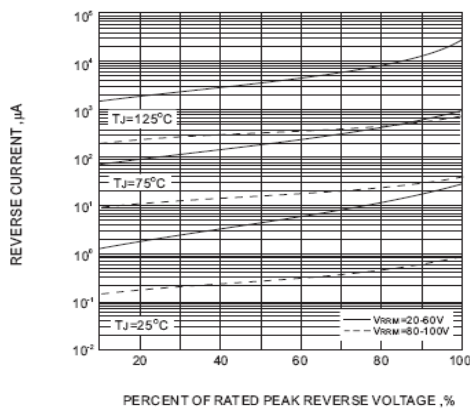


Fig.3 TYPICAL REVERSE CHARACTERISTIC

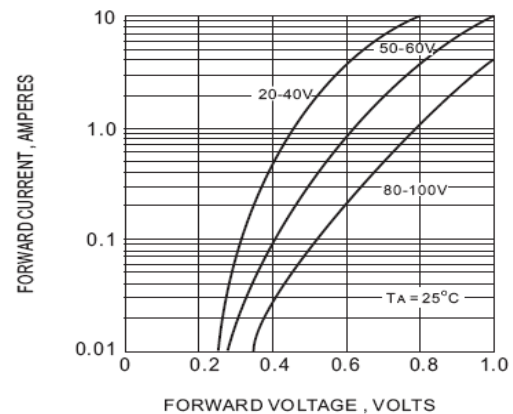


Fig.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTIC

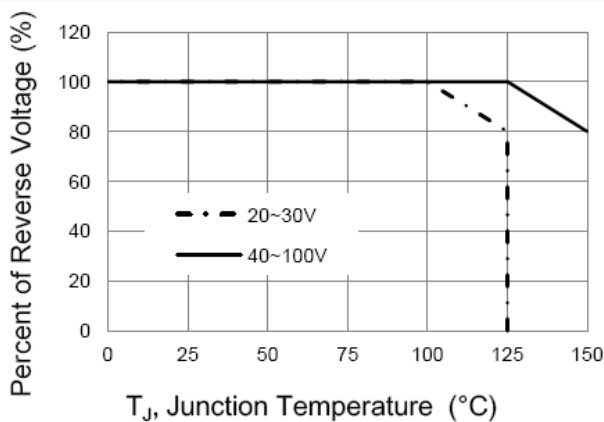
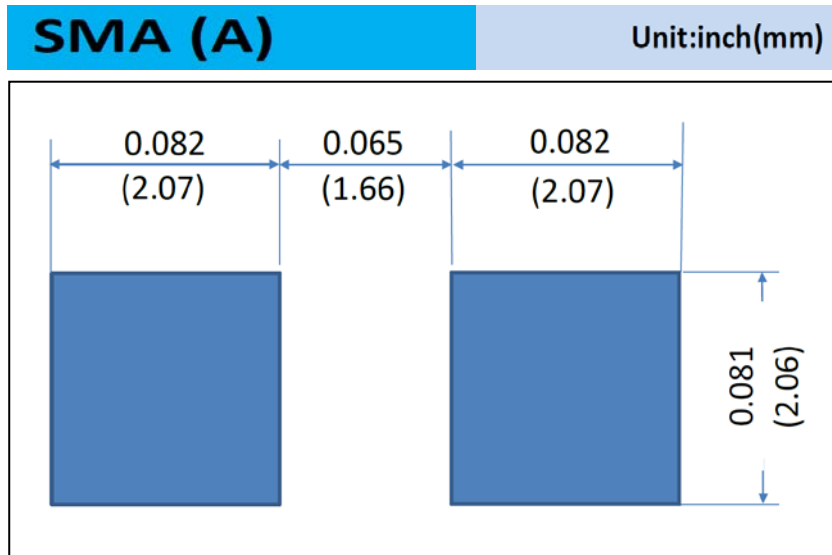


Fig.5 Operating Temperature Derating Curve

SS12A SERIES

MOUNTING PAD LAYOUT



ORDER INFORMATION

Packing information

T/R – 7.5K per 13" plastic Reel

T/R – 1.8K per 7" plastic Reel

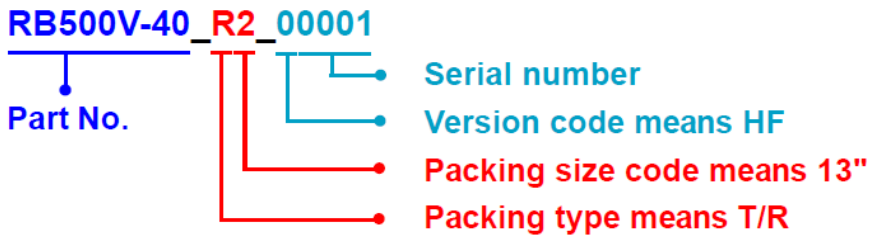
SS12A SERIES

Part No packing code Version

SS12A_R1_00001

SS12A_R2_00001

For example :



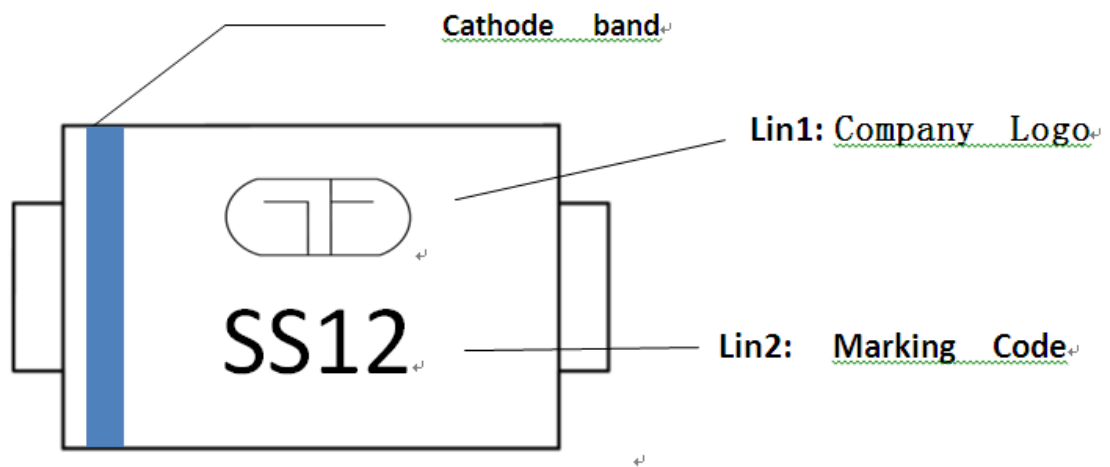
Packing Code XX				Version Code XXXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			

SS12A SERIES

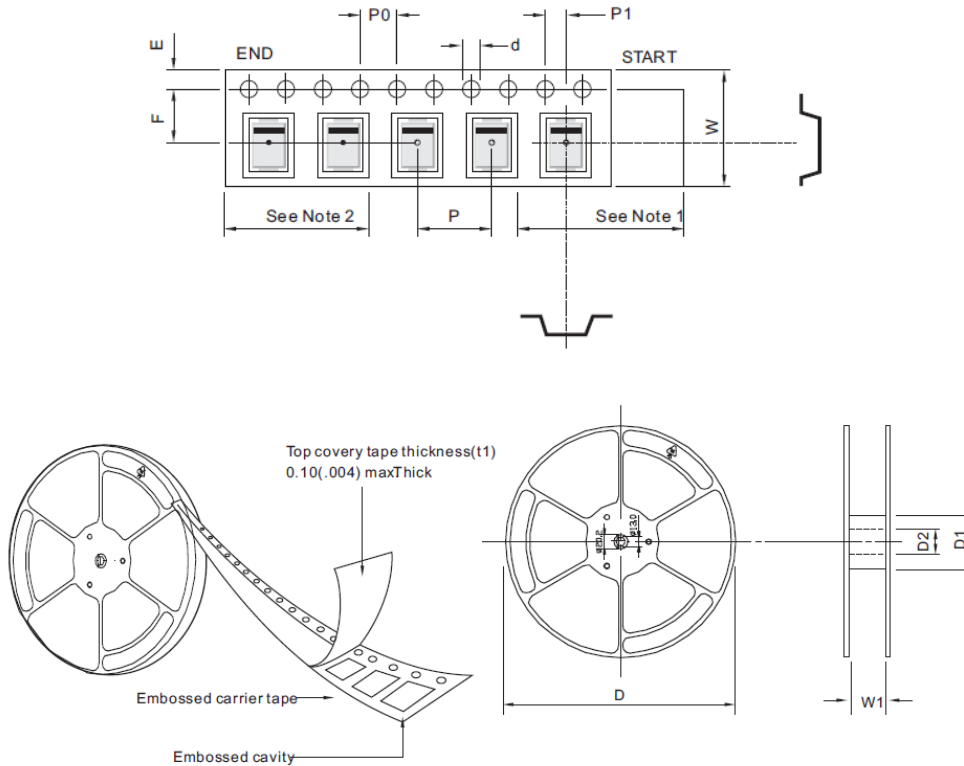
Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from Siyang Grande Electronics Co., Ltd..
- Siyang Grande Electronics Co., Ltd. reserves the rights to make changes of the content herein the document anytime without notification. Please refer to our website for the latest document.
- Siyang Grande Electronics Co., Ltd. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Siyang Grande Electronics Co., Ltd. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Siyang Grande Electronics Co., Ltd. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Siyang Grande Electronics Co., Ltd. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Siyang Grande Electronics Co., Ltd. for any damages resulting from such improper use or sale.
- Since Grande uses lot number as the tracking base, please provide the lot number for tracking when complaining.

2.MARKING



3. TAPING



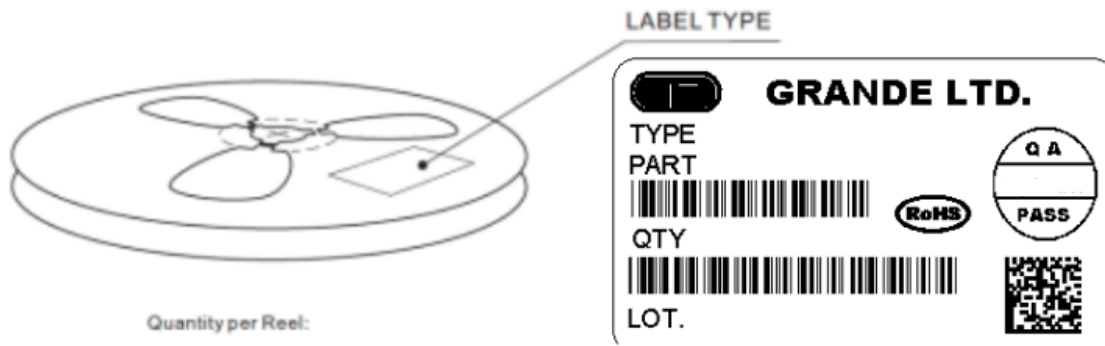
SYMBOL	mm(inch)	SYMBOL	mm(inch)	SYMBOL	mm(inch)
TYPE SIZE	12.00 (0.472)	TYPE SIZE	12.00 (0.472)	TYPE SIZE	16.00 (0.629)
Package	SMA/SMA(W)/SMA(S)	Package	SMB	Package	SMC
d	1.55 ±0.05 (0.06 ±0.001)	d	1.55 ±0.05 (0.06 ±0.001)	d	1.55 ±0.05 (0.06 ±0.001)
D	178.0 ±2.0 (7.0 ±0.078)	D	178.0 ±2.0 (13.0 ±0.078)	D	178.0 ±2.0 (13.0 ±0.078)
D1	50.0 min (1.97 min)	D1	50.0 min (1.97 min)	D1	50.0 min (1.97 min)
D2	13.0 ±0.2 (0.51 ±0.007)	D2	13.0 ±0.2 (0.51 ±0.007)	D2	13.0 ±0.5 (0.51 ±0.019)
E	1.75 ±0.10 (0.068 ±0.003)	E	1.75 ±0.10 (0.068 ±0.003)	E	1.75 ±0.10 (0.068 ±0.003)
F	5.50 ±0.1 (0.21 ±0.003)	F	5.50 ±0.05 (0.21 ±0.001)	F	7.5 ±0.10 (0.29 ±0.003)
P	4.00 ±0.10 (0.15 ±0.003)	P	8.00 ±0.10 (0.31 ±0.003)	P	8.00 ±0.10 (0.31 ±0.003)
Po	4.00 ±0.10 (0.15 ±0.003)	Po	4.00 ±0.10 (0.15 ±0.003)	Po	4.00 ±0.10 (0.15 ±0.003)
P1	2.00 ±0.1 (0.07 ±0.003)	P1	2.00 ±0.05 (0.07 ±0.001)	P1	2.00 ±0.10 (0.07 ±0.003)
W	12.00 ±0.3 (0.472 ±0.118)	W	12.00 ±0.3 (0.472 ±0.118)	W	16.00 ±0.3 (0.472 ±0.118)
W1	12.40 ~ 14.40Maxmum (0.48 ~ 0.56)	W1	12.40 ~ 14.40Maxmum (0.48 ~ 0.56)	W1	16.40 ~ 18.40Maxmum (0.64 ~ 0.72)

Note:

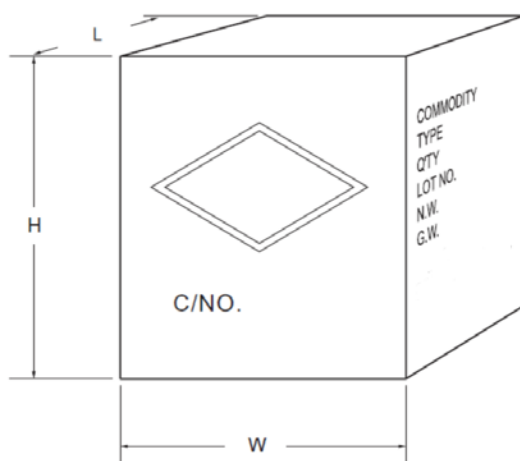
1. There shall be leader of 230 mm minimum which may consist of carrier and or cover tape follower by a minimum of 160 mm of carrier tape sealed with cover tape.
2. There shall be minimum of 160 mm of empty component pockets sealed with cover tape.
3. Devices are packed in accordance whit EIA standard EIA-481-A and specifications given above.

4. PACKAGE

REELPACKING



CARTON



Box Dimensions : mm
Quantity per Box:

SHIPPING MARK



C/NO.
PRODUCT COUNTRY

SIDE MARK

COMMODITY:
TYPE:
Q'TY:
LOT NO.
N.W.
G.W.

Line	Package	Packing	Size	Quantity	InnerboxsizeLxWxH(m/m)	CartonQuantity	CartonsizeLxWxH(m/m)
SMD	SMA	T/R	7"	1,800	188x188x67	10box/72K	390x240x420
	SMB	T/R		500	188x188x67	10box/20K	390x240x420
	SMC	T/R		500	188x188x67	10box/15K	390x240x420
	SMA(W)	T/R		1,800	188x188x67	8box/100.8K	390x240x420
	SMA(S)	T/R		2,300	188x188x67	8box/128.8K	390x240x420
	SMA(A)	T/R		1,800	188x188x67	8box/100.8K	390x240x420
	SMA	T/R	13"	7,500	350x337x44	8box/120K	375x360x390
	SMB	T/R		3,000	350x337x44	8box/48K	375x360x390
	SMC	T/R		3,000	350x337x44	7box/42K	375x360x390
	SMA(W)	T/R		7,500	350x337x44	10box/150K	355x355x390
	SMA(S)	T/R		9,500	350x337x44	10box/190K	355x355x400
	SMA(A)	T/R		7,500	350x337x44	10box/150K	355x355x400

Packing Specifications

Package	Reel Size	Reel	Component Space	Tape Space	Reel Dia	Carton Size	Carton	Approx. Gross Weight
	(inch)	(pcs)	(mm)	(mm)	(mm)	(mm)	(EA)	(kg)
Reel Packing								
SMA(A)	7	1800	4	12	178	390 x 240 x 420	100,800	12.87
	13	7500	4	12	330	355 x 355 x 400	150,000	20.16

5.HIGH RELIABILITY TEST SPEC

(Schottky & Switching & Rectifiers & Bridge)

Date : 2015.01.29 rev.05

NO.	TEST ITEM	TEST CONDITION	REFERENCED DOCUMENT	LOT QUALITY LEVEL
1	HIGH TEMPERATURE REVERSE BIAS (H.T.R.B)	$T_j \leq T_{j \max}$ $V=0.8V_R$ (CUSTOMER SPEC.) DC supply 1000hr	JESD22-A108C	S.S=77 ACCEPT FOR 0 FAILURE ONLY.
2	INTERMITTENT FORWARD OPERATING LIFE (I.F.O.L)	$I=I_O \times 1.0$ DC supply POWER ON: at least 2 min , POWER OFF: 2 min 15000cycle	MIL-STD-750E METHOD 1037.2	S.S=77 ACCEPT FOR 0 FAILURE ONLY.
3	CONTINUE FORWARD OPERATING LIFE (C.F.O.L)	T_a should be specified if other than room temp $I=I_O \pm 10\%$ DC supply 168hr	MIL-STD-750E METHOD 1027.3	S.S=77 ACCEPT FOR 0 FAILURE ONLY.
4	TEMPERATURE CYCLING (T.C.T)	$T_a = -55 \pm 0/-10^\circ\text{C}$ $t=10\text{min (Min.)}$ $T_a = +150 \pm 15/-0^\circ\text{C}$ $t=10\text{min (Min.)}$ 1000cycle	JESD22-A104D	S.S=77 ACCEPT FOR 0 FAILURE ONLY.
5	PRESSURE COOKER (PCT)	$T_a = 121^\circ\text{C}$, $P=29.7\text{psia}$, Relative Humidity = 100%RH 96hr	JESD22-A102D	S.S=77 ACCEPT FOR 0 FAILURE ONLY.
6	THERMAL SHOCK (T.S.T)	HOT TANK $T_a = 100 \pm 10/-2^\circ\text{C}$ $t=5\text{min}$ COLD TANK $T_a = 0 \pm 2/-10^\circ\text{C}$ $t=5\text{min}$ 100 cycle	JESD22-A106B	S.S=77 ACCEPT FOR 0 FAILURE ONLY.
7	HIGH TEMPERATURE STORAGE LIFE (H.T.S.L)	$T_a = \text{specified max storage temperature}$ $\pm 5^\circ\text{C}$ 1000hr	JESD22-A103C	S.S=77 ACCEPT FOR 0 FAILURE ONLY.
8	TEMPERATURE HUMIDITY STORAGE (T.H.S)	$T_a = 85 \pm 2^\circ\text{C}$, $RH=85 \pm 5\%$ 1000hr	EIAJ ED-4701/100 METHOD 103	S.S=77 ACCEPT FOR 0 FAILURE ONLY.
9	SOLDERABILITY TEST	TEMPERATURE OF SOLDER POT= $245 \pm 5^\circ\text{C}$ TIME FOR DIPPING IN SOLDER= 5 ± 0.5 SEC DIPPING DEPTH = 0.05inch MAX FROM THE BODY 1 cycle	JESD22-B102D	S.S=10 ACCEPT FOR 0 FAILURE ONLY.
10	SOLDER RESISTANCE	TEMPERATURE OF SOLDER POT= $260 \pm 5^\circ\text{C}$ TIME FOR DIPPING IN SOLDER= $10 \pm 2/-0$ SEC DIPPING DEPTH= $1.57 \pm 0.79\text{mm}$ FROM THE BODY 1 cycle	JESD22-B106D	S.S=30 ACCEPT FOR 0 FAILURE ONLY.
11	FORWARD SURGE CURRENT	SQ WAVE OR SINE WAVE IFSM= DATE SHEET SPEC TIME= T_p	MIL-STD-750E METHOD 4066.4	S.S=22 ACCEPT FOR 0 FAILURE ONLY.