

**200mA Surface Mount Schottky Barrier Rectifiers-30V****PRIMARY CHARACTERISTICS**

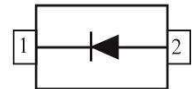
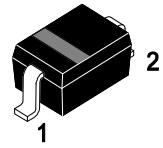
V_{RRM}	30V
I_O	200mA
$V_F@I_F=10mA(TYP)$	0.35V
$T_{J,Max}$	125°C

SOD-323**PACKAGE**

Marking : JV



M = Month Code

**FEATURES**

- Extremely Fast Switching Speed
- Low Forward Voltage — 0.35 Volts (Typ) @ $I_F = 10\text{ mAdc}$
- Moisture Sensitivity Level 1

MECHANICAL DATA

- Case : Molded plastic, SOD-323
- Polarity : Shown above
- Terminals : Plated terminals, solderable per MIL-STD-750, Method 2026
- Epoxy : UL94-V0 rated flame retardant

MAXIMUM RATINGS($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Limits	Unit
Reverse Voltage	VR	30	Vdc
Forward Current	IF	200	mAdc

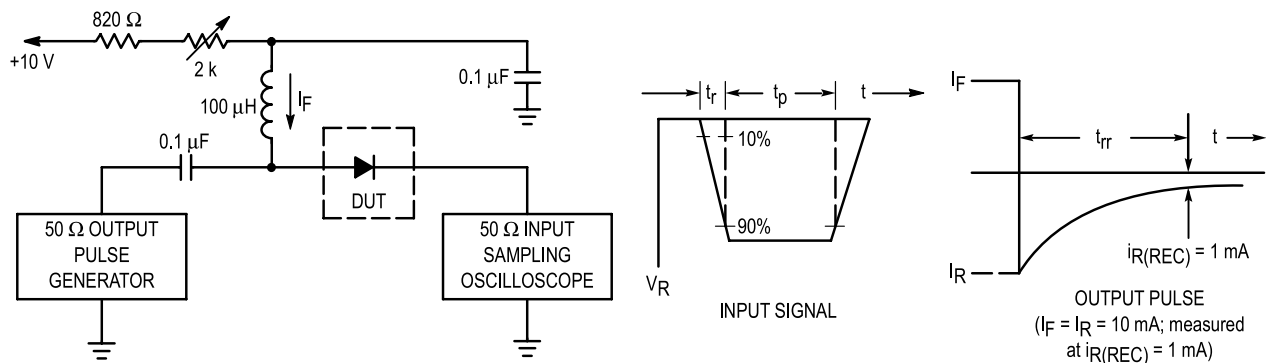
THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-5 Board (Note 1) @ $T_A = 25^\circ\text{C}$ Derate above 25°C	PD	200 1.57	mW mW/°C
Thermal Resistance, Junction-to-Ambient (Note 1)	$R_{\theta JA}$	635	°C/W
Operating Temperature	TJ	-55~+125	°C
Storage Temperature	Tstg	-55~+125	°C

1. FR-5 = 1.0×0.75×0.062 in.

**ELECTRICAL CHARACTERISTICS (Ta= 25°C)**

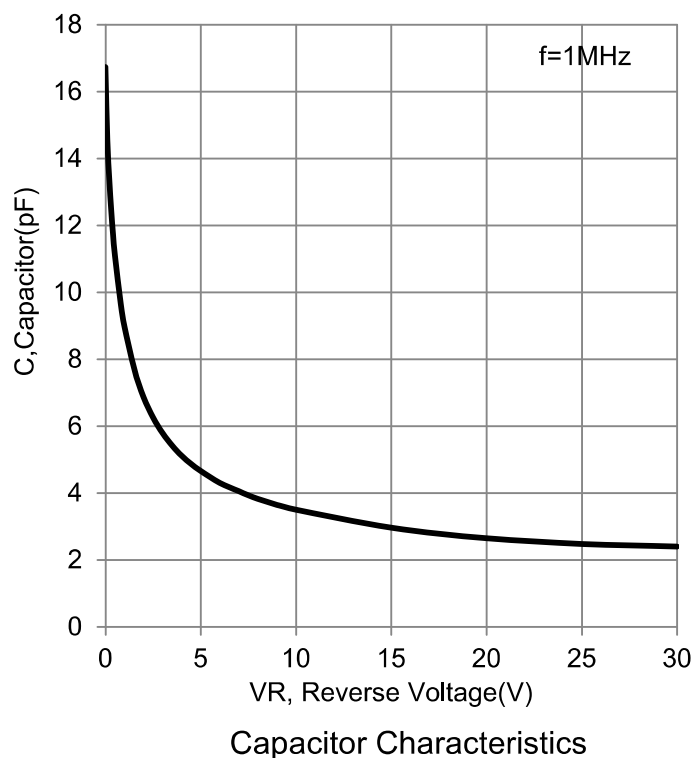
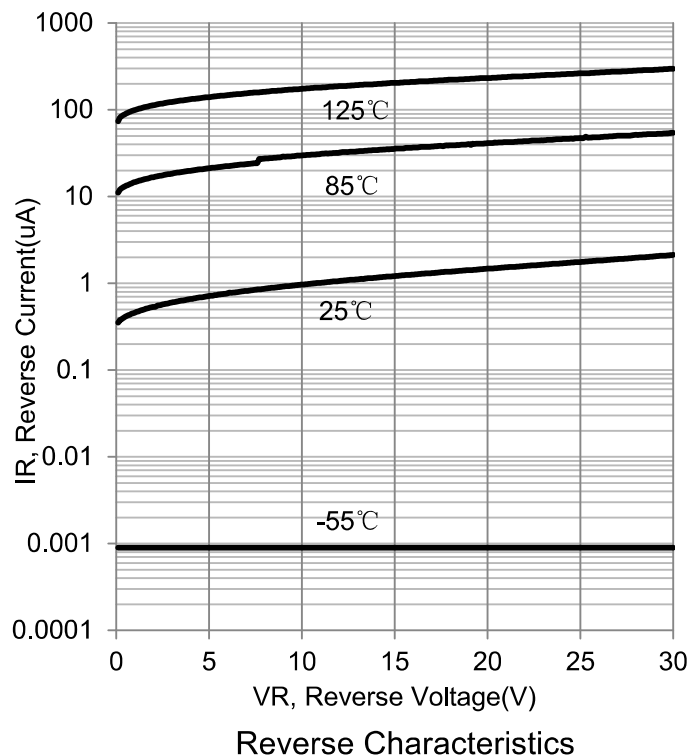
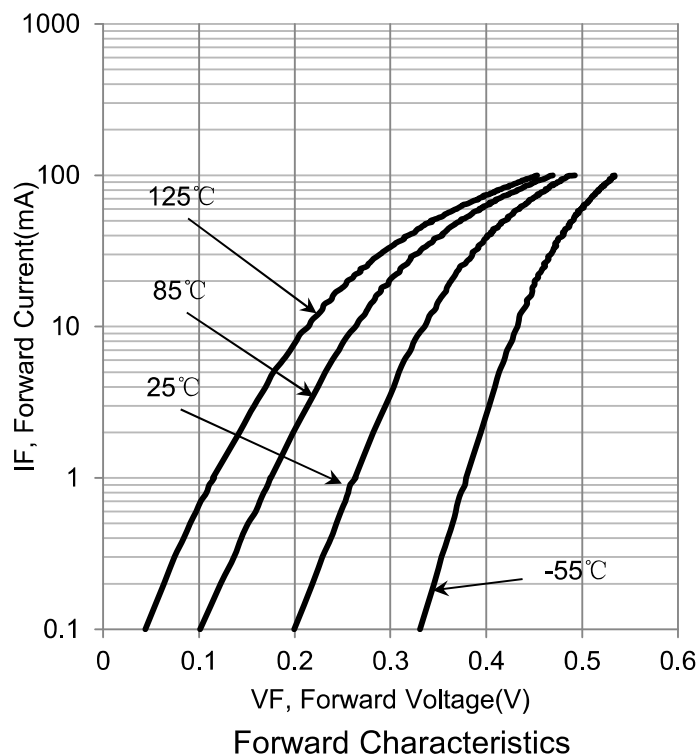
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage (IR = 10 μ Adc)	VBR	30	-	-	V
Reverse Voltage Leakage Current (VR = 25Vdc)	IR	-	0.5	2	μ A
Diode Capacitance (VR =1.0V , f = 1.0 MHz)	CT	-	-	10	pF
Forward Voltage (IF = 0.1 mAdc) (IF = 1 mAdc) (IF = 10 mAdc) (IF = 30 mAdc) (IF = 100 mAdc)	VF	- - - - -	0.22 0.29 0.35 0.41 0.52	0.24 0.32 0.4 0.5 1	V
Reverse Recovery Time (IF = IR = 10 mAdc, IR(REC) = 1.0 mAdc)	trr	-	-	5	ns
Repetitive Peak Forward Current	IFRM	-	-	300	mA
Non-Repetitive Peak Forward Current (t < 1.0 s)	IFSM	-	-	600	mA

RECOVERY TIME EQUIVALENT TEST CIRCUIT

- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10 mA.
3. $t_p \gg t_{rr}$



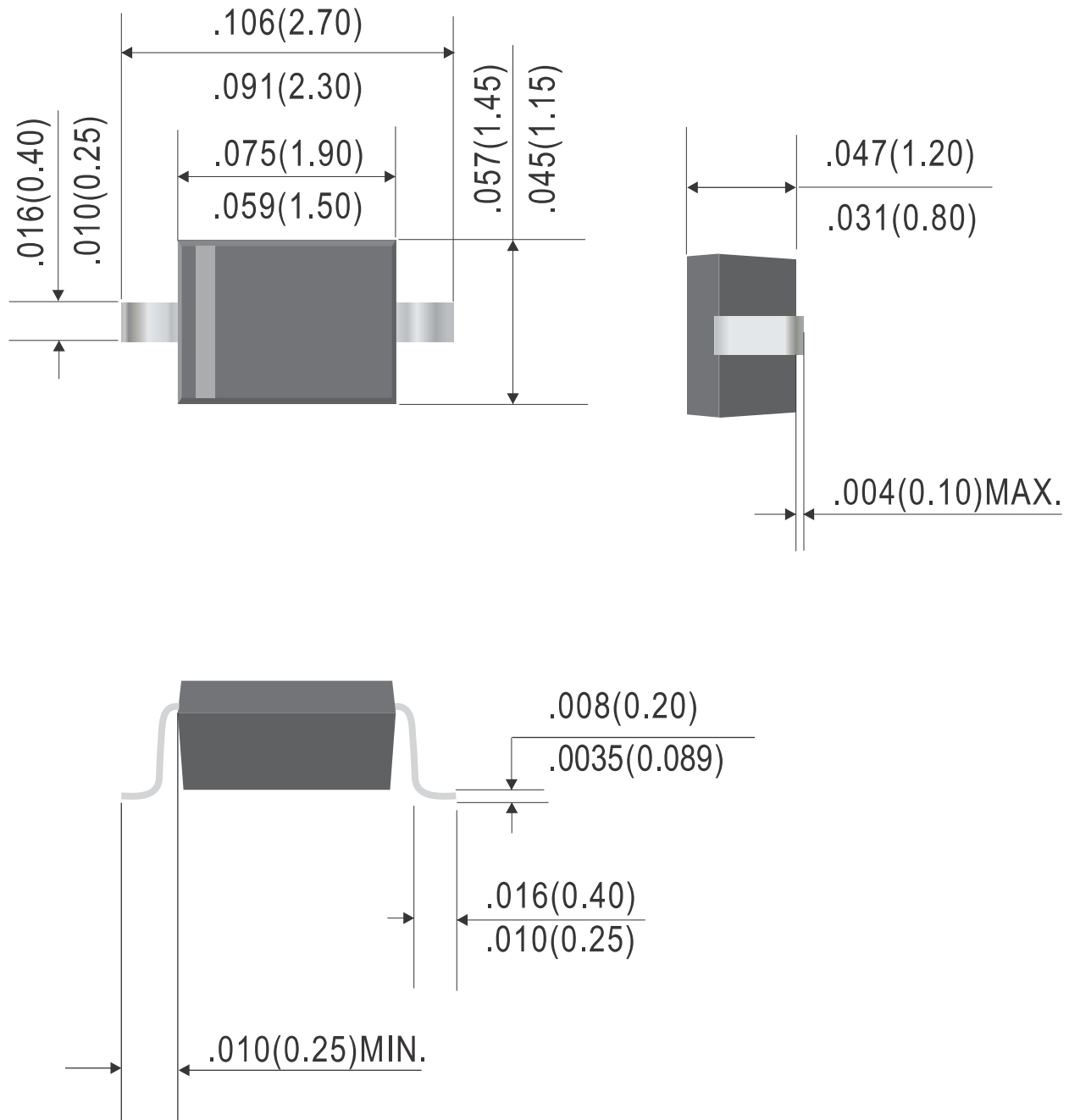
ELECTRICAL CHARACTERISTICS CURVES





Outline Drawing

SOD-323



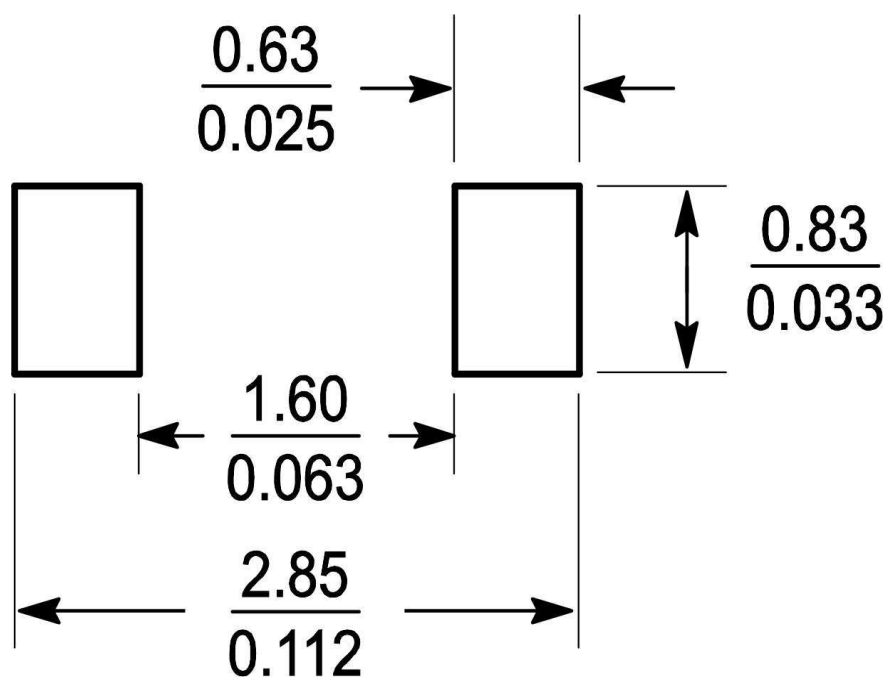
Dimensions in inches and (millimeters)

Rev.D-1



Suggested Soldering Pad Layout

SOD-323



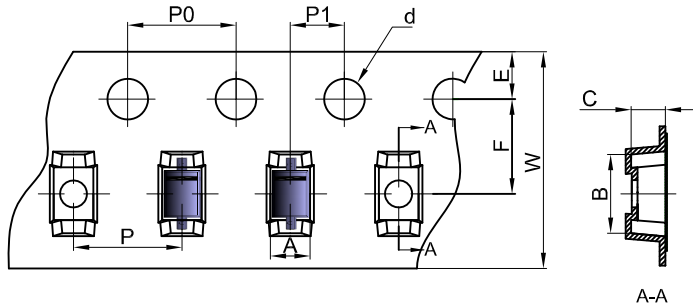
Dimensions in inches and (millimeters)

RevA



200mA Surface Mount Schottky Barrier Rectifiers-30V

SOD-323 Embossed Carrier Tape

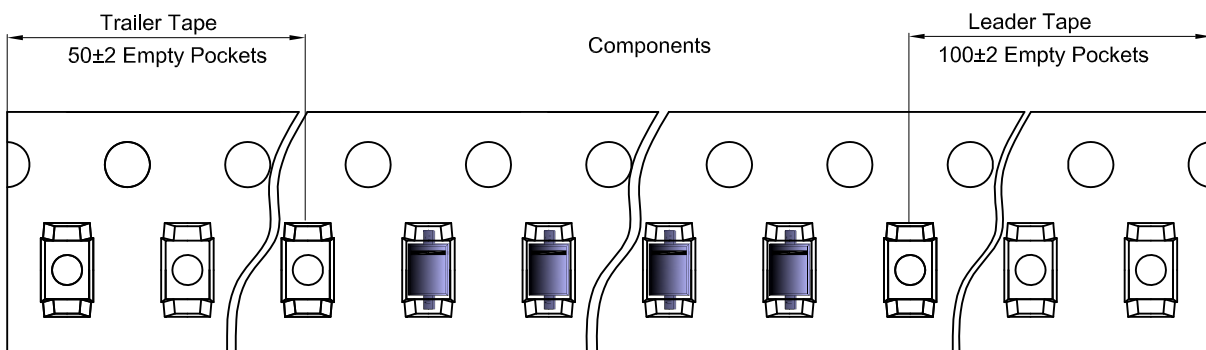


Packaging Description:

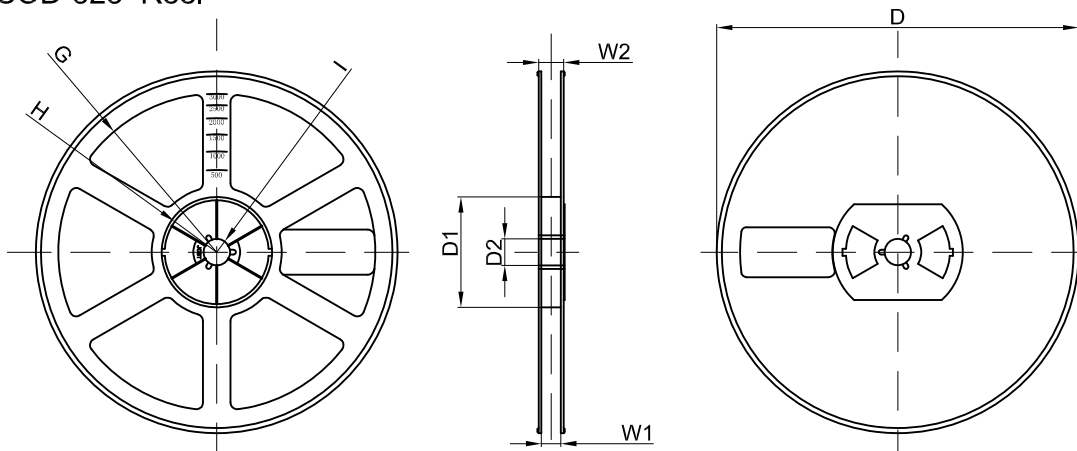
SOD-323 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOD-323	1.48	3.3	1.25	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOD-323 Tape Leader and Trailer



SOD-323 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

**Ordering Information:**

Device PN	Packing
BAT54HT1 -T ⁽¹⁾ G ⁽²⁾ -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

*****Disclaimer*****

WILLAS reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. WILLAS or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on WILLAS data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. WILLAS does not assume any liability arising out of the application or use of any product or circuit.

This is the preliminary specification. WILLAS products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of WILLAS. Customers using or selling WILLAS components for use in such applications do so at their own risk and shall agree to fully indemnify WILLAS Inc and its subsidiaries harmless against all claims, damages and expenditures.

BAT54HT1 ESD Test Report

1. **Testing Purpose:** To test the ESD tolerance of products.
2. **Product Type:** BAT54HT1
3. **Number of Samples:** Each measurement voltage level — 2PCS.
4. **Test Standard:** Machine Model : AEC-Q101-002
Human Body Model : AEC-Q101-001
5. **Test Condition:** Machine Model : C=200pF ;3 times
Human Body Model : C=100pF ;R=1.5kΩ ;3 times
Capacitive DischargeModel Electrostatic : R=1.0Ω ;3 times
6. **Testing Results:**

6.1 Machine Model:

ITEM NAME	Machine Model	
SAMPEL NO.	VOLT	Judgement
1	±200V	PASS
2	±200V	PASS
RESULT	±200V	

Classification

M0 : ≤25V	M2 : >100V to ≤200V
M1A : >25V to ≤50V	M3 : >200V to ≤400V
M1B : > 5 0V to ≤10 0 V	M4 : >400V

6.2 Human Body Model:

ITEM NAME	Human Body Model	
SAMPEL NO.	VOLT	Judgement
1	±4KV	PASS
2	±4KV	PASS
RESULT	±4KV	

Classification:

H0 : ≤250V	H2: >2000V to ≤4000V
H1A : >250V to ≤500V	H3A : >4000V to ≤8000V
H1B : >500V to ≤1000V	H3B : >8000V
H1C : >1000V to ≤2000V	

6.3 Contact Discharge Model:

ITEM NAME	Contact Discharge Model	
SAMPEL NO.	VOLT	Judgement
1	±1000V	PASS
2	±1000V	PASS
RESULT	±1000V	

Classification

C0 : ≤125V	C3 : >500V to ≤750V
C1 : >125V to ≤250V	C4 : >750V to ≤1000V
C2 : >250V to ≤500V	C5 : >1000V

7. Test Result

7.1 Machine Model: Pass M3

7.2 Human Body Model: Pass H3A

7.3 Capacitive DischargeModel Electrostatic: Pass C5

◆Mounting and Storage Conditions

Willas has set the following requirements for the heat resistance of components.

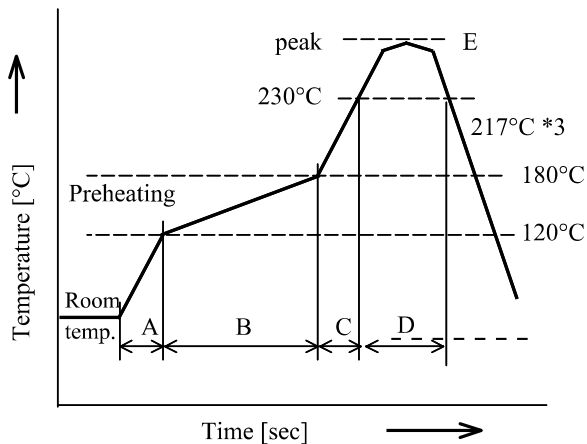
[Assumption] Moisture absorption prior to the reflow/flow soldering of components in dry pack.

With components in dry pack, reflow/flow soldering shall be completed within 168 hours after unpacking

(Storage environment:30°C 70%RH)

1.Reflow soldering

Temperature profile



Conditions

	Components size ^{*1}	☐ 28mm or less	☐ Over 28mm	Unit
A	Temp. rise gradient ^{*2}	1 - 3		°C/sec
B	Heating time	50 - 150		sec
	Heating temperature	120 - 180		°C
C	Temp. rise gradient ^{*2}	1 - 3		°C/sec
D	Time over 230°C	90	70	sec
	Peak temperature	260	250	°C
E	Peak-temp. hold time	1-10	1-10	sec
	Soldering	2		times

*1.Length or width, whichever is the greater outside dimension (length for a rectangular component)

*2.Temperatures and time for A through E in the table above shall be measured on the top surface of the components size.

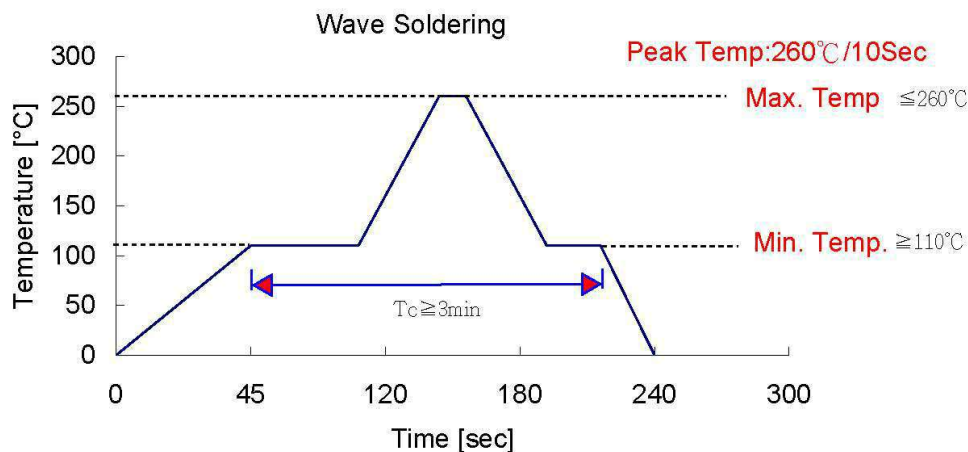
*3.Time over 217 °C be 90-150 seconds .

2.Flow (wave) soldering (solder dipping)

Peak temperature	260°C
Dipping time	10 sec
Soldering	1 time

SMD : Dipping the entire component

component for Insertion :Dipping to the lead joint of component



3. Hand soldering / touchup

Soldering iron tip temperature	380°C
Soldering time	3 sec



威倫電子股份有限公司

WILLAS ELECTRONIC CORP

Moisture Sensitivity Level (MSL)

If devices are not handled correctly, in accordance with their MSL conditions, then they will start to naturally absorb moisture. When heated rapidly during reflow soldering, the moisture turns to steam. If it cannot escape quickly enough the pressure built up may damage the component by cracking the package moulding, an effect known as “Popcorning”.

IPC/JEDEC J-STD-020C also defines device MSLs as part of the specification. MSL Level 1 is used for products supplied without moisture proof packaging. The products of Willas have an MSL Level of 1.

The Table below details the MSL Levels and conditions defined by J-STD-020C

MSL	Floor Life Time	Floor Conditions
1	Unlimited	$\leq 30^{\circ}\text{C}/ 85\% \text{ RH}$
2	1 Year	$\leq 30^{\circ}\text{C}/ 60\% \text{ RH}$
2a	4 Weeks	$\leq 30^{\circ}\text{C}/ 60\% \text{ RH}$
3	168 Hours	$\leq 30^{\circ}\text{C}/ 60\% \text{ RH}$
4	72 Hours	$\leq 30^{\circ}\text{C}/ 60\% \text{ RH}$
5	48 Hours	$\leq 30^{\circ}\text{C}/ 60\% \text{ RH}$
5a	24 Hours	$\leq 30^{\circ}\text{C}/ 60\% \text{ RH}$
6	Time on Label	$\leq 30^{\circ}\text{C}/ 60\% \text{ RH}$