The history of revision change for the specification

Document	REV.	Modified date	Description
NS-2023-I061	A0	2023/01/03	New approval
NS-2023-I061	A1	2023/01/11	add Product size（A/B etc） definition

Comments:

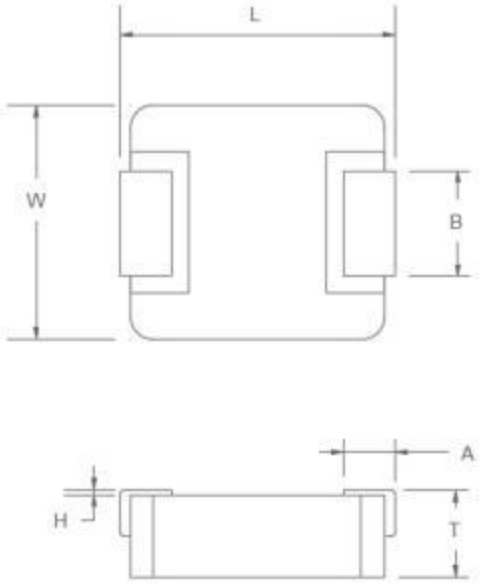
Features

High performance (Isat) realized by metal dust core. Low profile： Thickness max. 6.5mm
Low loss realized with low DCR
Capable of corresponding high frequency Compliance with RoHS and Halogen Free

Applications

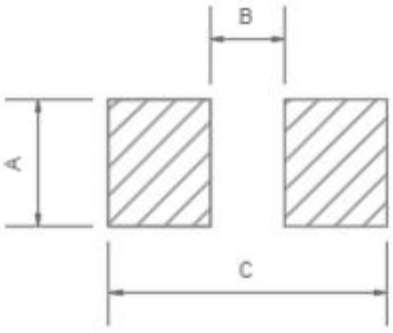
Automotive applications

Dimensions in mm



Code	Dimensions（mm)
L	13.45±0.35
W	12.6±0.2
B	5.0±0.5
A	2.35±0.5
T	6.3±0.2
H	0~0.15

Recommend Land Patterns



A	5.7
B	7.2
C	15.87
Unit:mm	

● Type Designation

	1365	4R7	M	T2
Series Name	Dimensions	Inductance value	Tolerance Code	Temperature resistance
V: Automotive C: Power Choke L: Cold pressing	13 series 6.5mm height	4.7 µH	J:5% K:10% L:15% M:20% P:25% N:30%	125℃

● Marking and Date Code

The point on the top surface represents winding direction of choke.

(1) Marking

The inductor is marked with a 3-digit code Example - - 4.7µH →4R7

2) Date Code

X X

X

(1) (2)

X X X

(3)

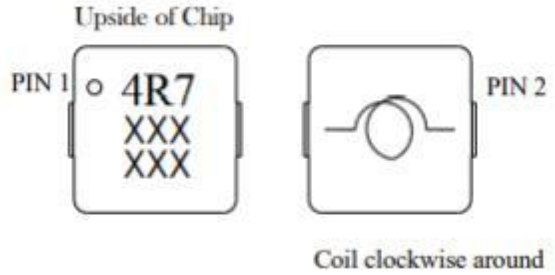
Where (1) Year Code

Ex : 2021 = 1

(2) Weekly Code

Serial number : 01 ~ 53 (3) Taping No.

Serial number : 001 ~ ZZZ



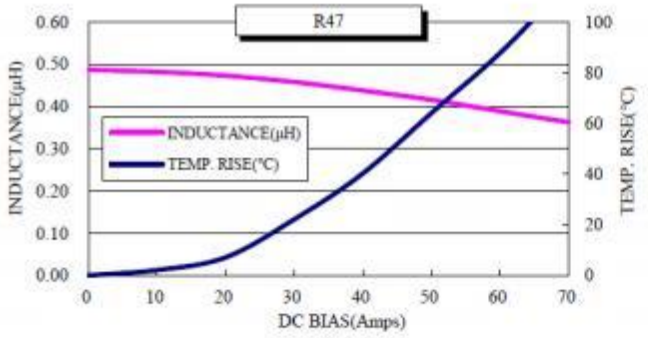
●Specifications

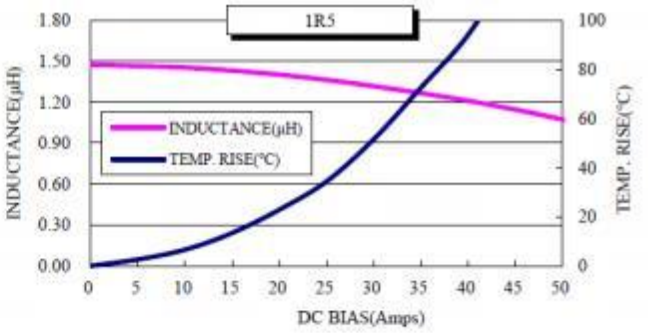
Part Number	L0 (μH)	DCR (mΩ)		Temperature Rise Current(A)		Saturation Current (A)	
		Typ.	Max.	Typ.	Max.	Typ.	Max.
NSLL1365-R47MT2	0.47	1.0	1.2	41.0	36.9	63.0	54.0
NSLL1365-1R5MT2	1.5	2.3	2.75	27.6	24.8	45.0	38.0
NSLL1365-2R2MT2	2.2	3.1	3.7	26.5	23.9	32.0	29.0
NSLL1365-3R3MT2	3.3	5.7	6.6	22.9	20.6	35.0	30.0
NSLL1365-4R7MT2	4.7	8.0	9.6	14.8	13.3	27.3	23.4
NSLL1365-100MT2	10.0	14.7	17.6	10.9	9.8	18.8	16.1
NSLL1365-680MT2	68.0	109.0	130.0	4.0	3.6	6.4	5.5

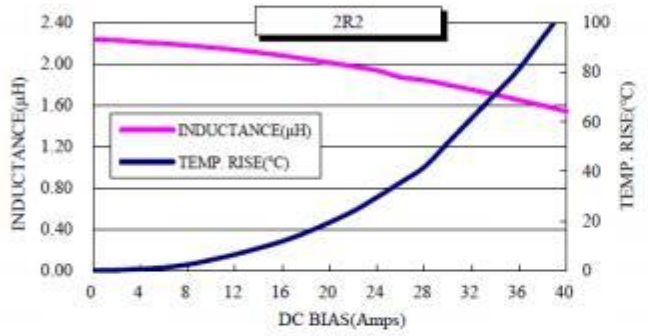
NOTES:

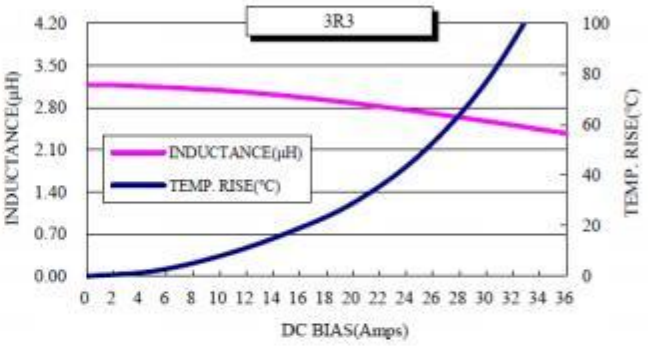
1. Inductance Tolerance ±20%.
2. Rated Voltage Max. 75V.
3. All test data is referenced to 25°C ambient.
4. Inductance tested at 100 kHz, 1Vrms.
5. Temperature Rise Current that will cause an approximate ΔT of 40°C from 25°C ambient.
6. Saturation current at which the inductance drops 20% from its value without current.

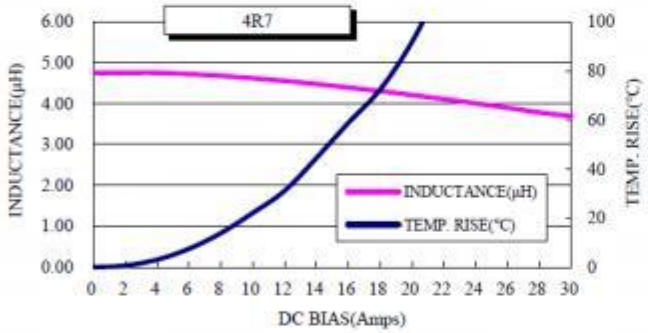
● PERFORMANCE GRAPHS

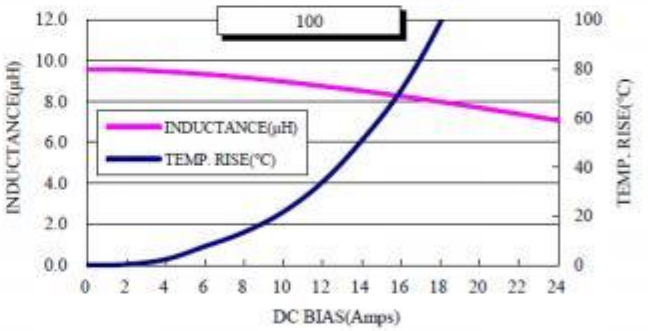


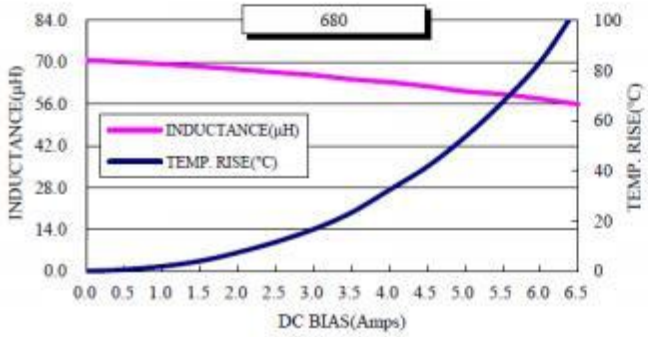






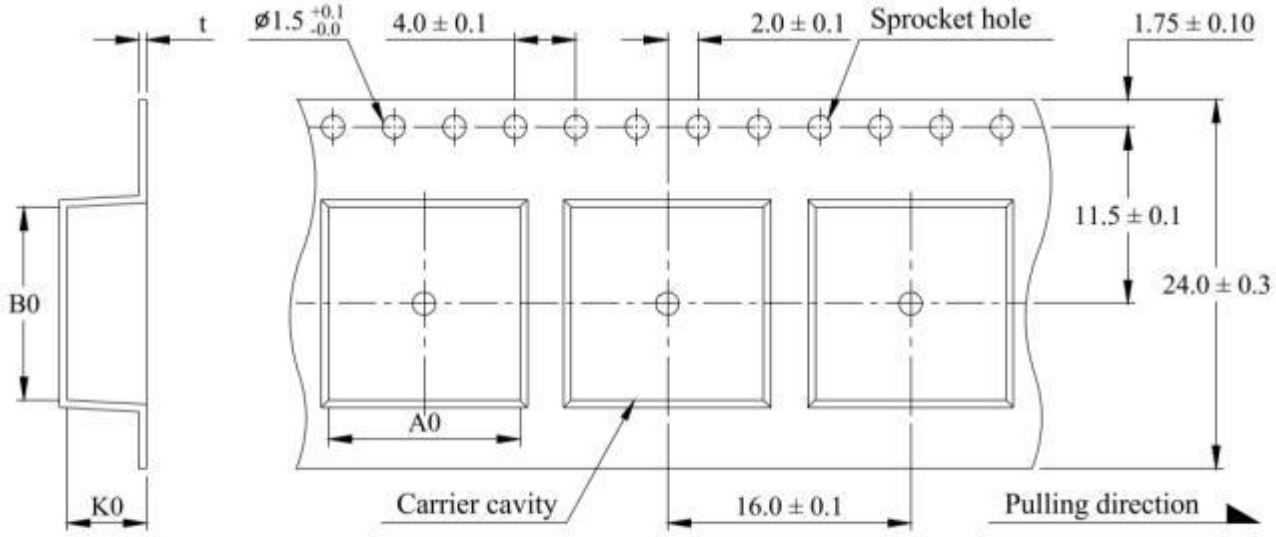






● Packaging

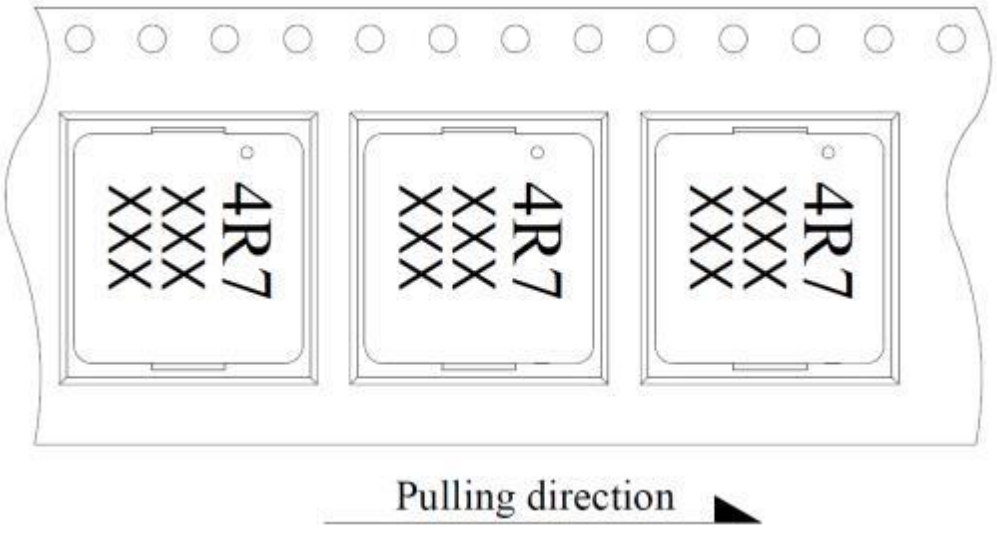
(1) Tape packaging dimensions



Dimensions Code (mm)				UNITS/REEL
A0	**B0**	**K0**	**t**	
13.4 ± 0.1	14.1 ± 0.1	7.1 ± 0.1	0.50 ± 0.05	500

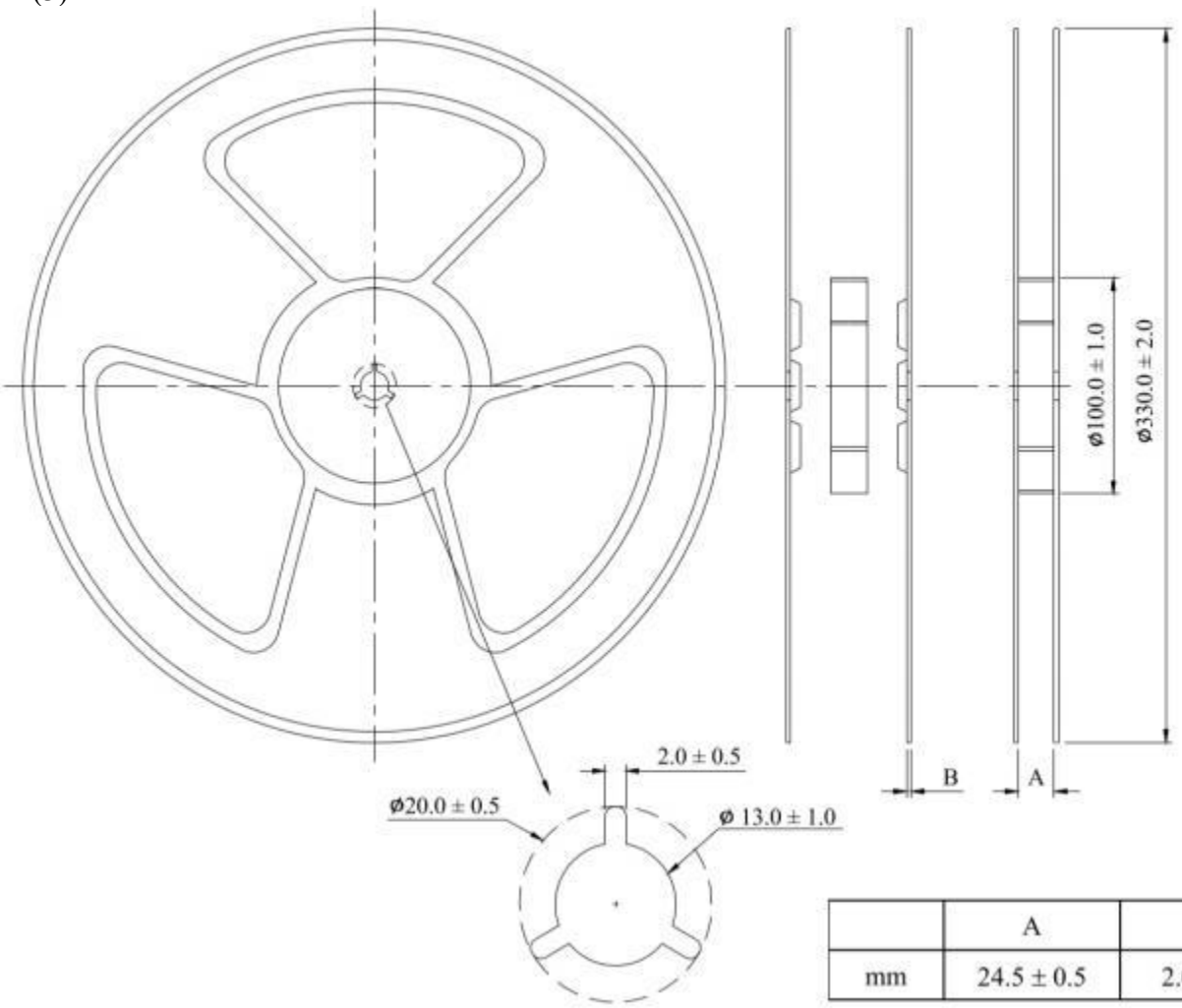
(2) Tape Direction

The directionshall be seen from the top cover tape side.



7. Reflow Profile

(3) Reel dimensions

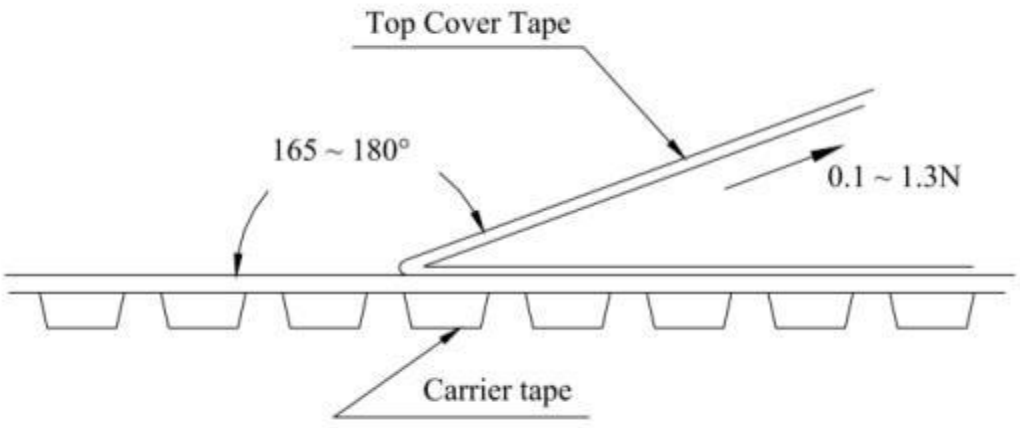


	A	B
mm	24.5 ± 0.5	2.0 ± 0.2

(4) Peel force of top cover tape

The peel speed shall be about 300 mm/minute.

The peel force of top cover tapeshall be between 0.1 to 1.3N.

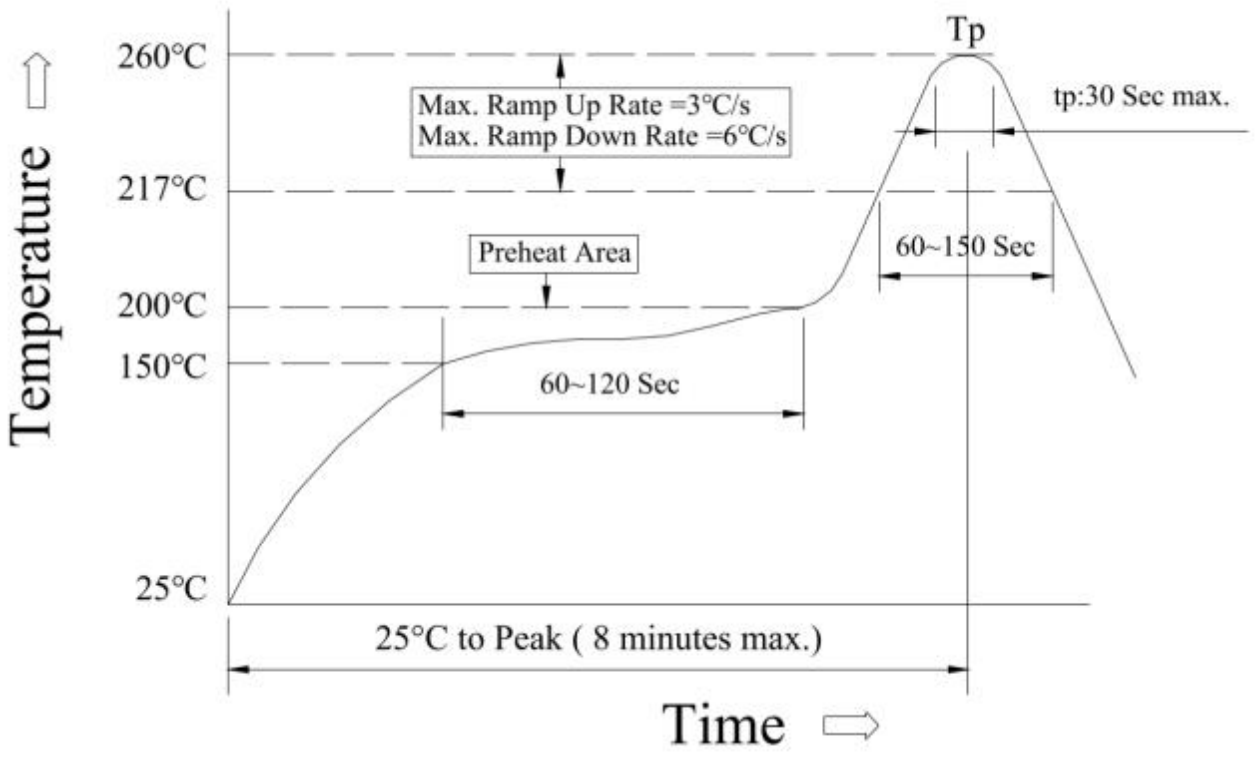


● Reliability

Item No	Item	Reference	Test Method	Spec.
1	High temperature exposure	MIL-STD-202 Method108	Temperature:125℃ Duration:1000hrs.	ΔL≤±10.0% Without mechanical damage such as break.
			Temperature:125℃ Duration:2500hrs.	-10.0%≤ΔL≤±20.0% Without mechanical damage such as break.
2	Temperature cycling	JESD22 Method JA-104	1000 cycles (-55℃ to +125℃) Measurement at 24 ± 4 hrs. after test conclusion. 30min maximum dwell time at each temperature extreme. 1 min. maximum transition time.	ΔL≤±10.0% Without mechanical damage such as break.
3	Biased humidity	MIL-STD-202 Method 103	1000 hrs.85℃/85% RH. Unpowered. Measurement at 24 ± 4 hrs. after test conclusion.	ΔL≤±10.0% Without mechanical damage such as break.
4	Operational life	MIL-PRF-27	1000 hrs.@85℃,rated current Measurement at 24 ±4 hrs.after test conclusion.	ΔL≤±10.0% Without mechanical damage such as break.
			2500 hrs.@85℃,rated current Measurement at 24 ±4 hrs.after test conclusion.	-10.0%≤ΔL≤±20.0% Without mechanical damage such as break.
5	External visual	MIL-STD-883 Method 2009	Inspect device construction, marking and workmanship. Electrical Test not required.	No abnormality
6	Physical dimension	JESD22 Method JB-100	Verify physical dimensions to the Applicable device detail specification. Note:User(s) and Suppliers spec. Electrical Test not required.	No abnormality
7	Resistance to solvents	MIL-STD-202 Method 215	Solvent:Add OKEM clean or equivalent Immersion 3+0.5/-0 minutes, brush 10 strokes (wet bristle)2 to 3 oz., 3 times.	ΔL≤±10.0% Without mechanical damage such as break.
8	Mechanical shock	MIL-STD-202 Method 213	100gs,6ms,3 shocks each plane,using a half-sine waveform	ΔL≤ ±10.0% Without mechanical damage such as break.
9	Vibration	MIL-STD-202 Method 204	5g's for 20minutes,12cycles each of 3 orientations. Test from 10-2000Hz	ΔL≤±10.0%Without mechanical damage such as break.

Item No	Item	Reference	Test Method	Spec.
10	Resistance to soldering heat	MIL-STD-202 Method 210	260℃ 10seconds	ΔL≤±10.0% Without mechanical damage such as break.
11	ESD	AEC-Q200-002	Air discharge:25KV	ΔL≤±10.0% Without mechanical damage such as break.
12	Solderability	J-STD-002	Magnifications 50X. Conditions: SMD type Method D category 3.@260℃	The surface of terminal immersed shall be minimum of 95% covered with a new coating of solder
13	Electrical characterization	User Spec.	Parametrically test per lot and sample size requirements, summary to show Min,Max,Mean and standard deviation at room as well as Min and Max operating temperatures.	No abnormality
14	Board flex	AEC-Q200-005	2mm for 60 seconds minimum holding time.	ΔL≤±10.0% Without mechanical damage such as break.
15	Terminal strength	AEC-Q200-006	Shear force:1.8kg,duration:60 seconds.	ΔL ≤±10.0% Without mechanical damage such as break.

● Reflow Profile



(1) Reflow Soldering Method :

Reflow Soldering	Tp:255~260℃	Max.30 seconds (tp)
	217℃	60~150 seconds
Pre-Heat	150 ~ 200℃	60~120 seconds
Time 25℃ to peak temperature	8 minutes max.	

(2) Soldering iron Method : 350±5℃ max.3 seconds