

# Chip Ferrite Bead GHz High Frequency Type

SIM-3B Series

MERITEK

## FEATURE

- Operating temperature: -55°C ~ +125°C (Including self-temperature rise)
- Monolithic Inorganic Material Construction
- Closed Magnetic Circuit Avoids Crosstalk
- Noise Reduction Solution of Digital Interface From 500MHz to GHz Range
- Excellent Solderability and Heat Resistance



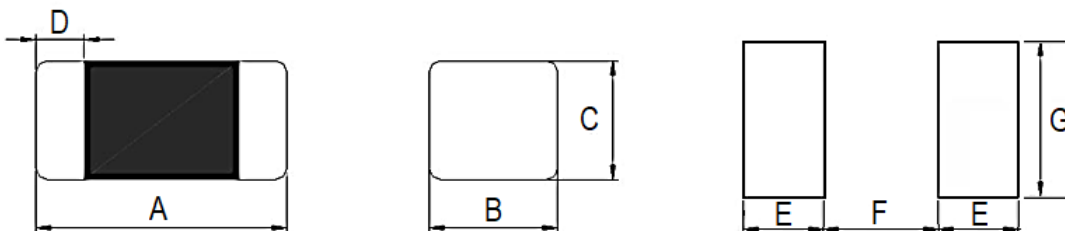
## PART NUMBERING SYSTEM

SIM   02   201   Y   A20   3B  
(1)   (2)   (3)   (4)   (5)   (6)



No	item	Code	Description	
(1)	Product Code	SIM	Signal Chip Inductor, Multi-Layer Chip Ferrite Bead Type	
(2)	Dimension	02	02: 0402, 1.0x0.5mm	03: 0603, 1.6x0.8mm
(3)	Impedance	201	201: 200Ω	First two digit: Significant, Third: Multiplier
(4)	Tolerance	Y	Y: ±25%	-25% ~ +25%
(5)	Rated Current	A20	A20: 0.20A	A: Decimal
(6)	Series Code	3B	Chip Ferrite Bead, High Frequency	Internal Control Code

## DIMENSIONS

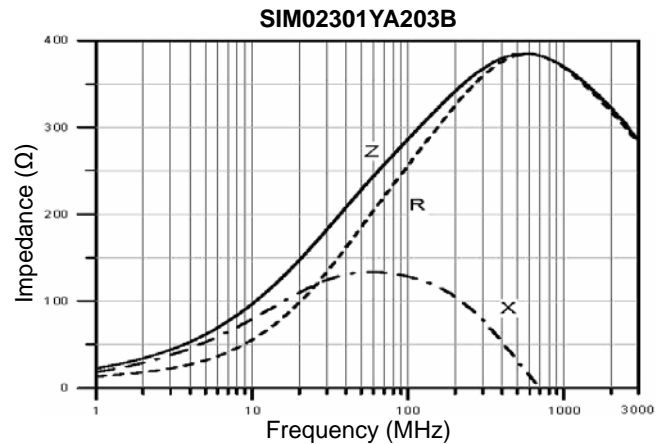
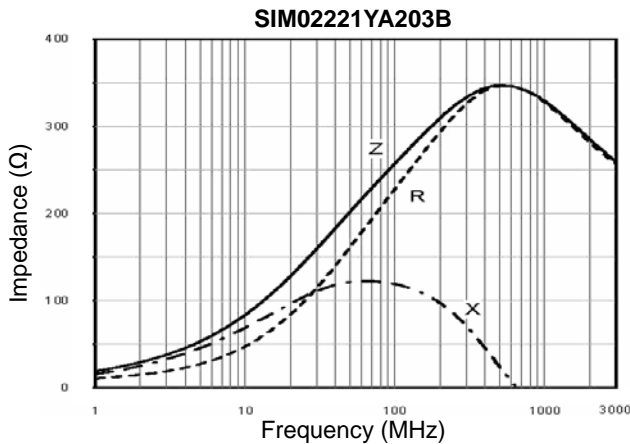


Size Code	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)
SIM02 (0402)	1.00±0.10	0.50±0.10	0.50±0.10	0.25±0.10	0.50	0.40	0.60
SIM03 (0603)	1.6±0.15	0.80±0.15	0.80±0.15	0.30±0.20	0.80	0.85	0.95

ELECTRICAL CHARACTERISTICS

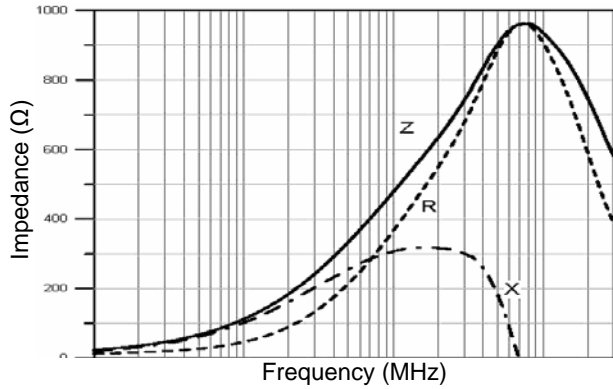
Size	Part Number	Impedance @100MHz	Tolerance @100MHz	Impedance @1GHz	Tolerance @1GHz	DCR Max.	Rated Current Max.
		( $\Omega$ )	(%)	( $\Omega$ )	(%)	( $\Omega$ )	(mA)
0402	SIM02201YA203B	200	$\pm 25\%$	420	$\pm 40\%$	0.70	200
	SIM02221YA203B	220	$\pm 25\%$	420	$\pm 40\%$	0.70	200
	SIM02301YA203B	300	$\pm 25\%$	560	$\pm 40\%$	0.80	200
	SIM02331YA20A3B	330	$\pm 25\%$	560	$\pm 40\%$	0.80	200
	SIM02471YA103B	470	$\pm 25\%$	1000	$\pm 40\%$	1.00	100
	SIM02601YA103B	600	$\pm 25\%$	1100	$\pm 40\%$	1.20	100
	SIM02102YA103B	1000	$\pm 25\%$	1700	$\pm 40\%$	1.60	100
	SIM02121YA30B3B	120	$\pm 25\%$	300	$\pm 40\%$	0.50	300
	SIM02221YA30B3B	220	$\pm 25\%$	500	$\pm 40\%$	0.60	300
	SIM02301YA30B3B	300	$\pm 25\%$	800	$\pm 40\%$	0.70	300
	SIM02471YA30B3B	470	$\pm 25\%$	1100	$\pm 40\%$	0.80	300
	SIM02601YA30B3B	600	$\pm 25\%$	1400	$\pm 40\%$	0.85	300
	SIM02121YA30H3B	120	$\pm 25\%$	500	$\pm 40\%$	0.70	300
	SIM02221YA253B	220	$\pm 25\%$	1500	$\pm 40\%$	1.00	250
	SIM02301YA253B	300	$\pm 25\%$	1700	$\pm 40\%$	1.25	250
	SIM02331YA20H3B	330	$\pm 25\%$	2000	$\pm 40\%$	1.50	200
	SIM02121YA30K3B	120	$\pm 25\%$	300	$\pm 40\%$	0.50	300
	SIM02221YA30K3B	220	$\pm 25\%$	500	$\pm 40\%$	0.60	300
	SIM02301YA30K3B	300	$\pm 25\%$	800	$\pm 40\%$	0.70	300
	SIM02471YA30K3B	470	$\pm 25\%$	1100	$\pm 40\%$	0.80	300
SIM02601YA30K3B	600	$\pm 25\%$	1400	$\pm 40\%$	0.85	300	

CHARACTERISTIC CURVES

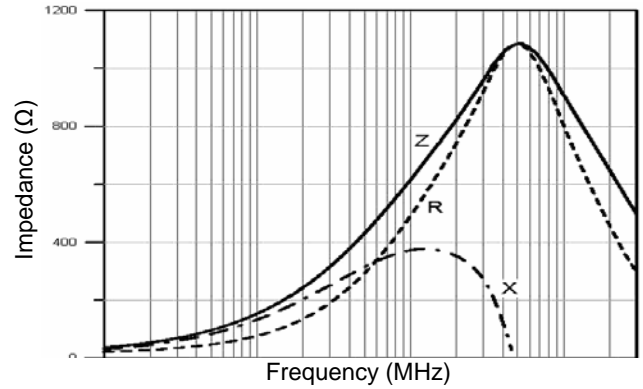


**CHARICTERISTIC CURVES**

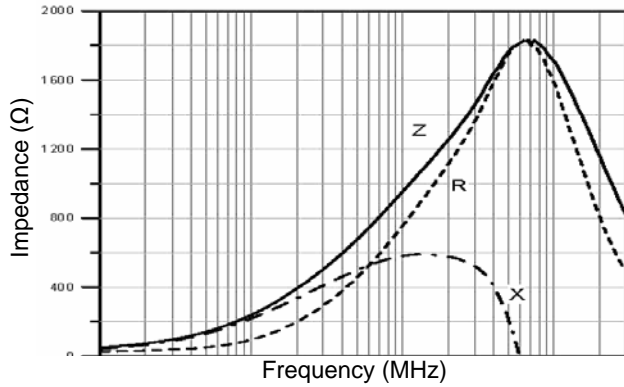
**SIM02471YA103B**



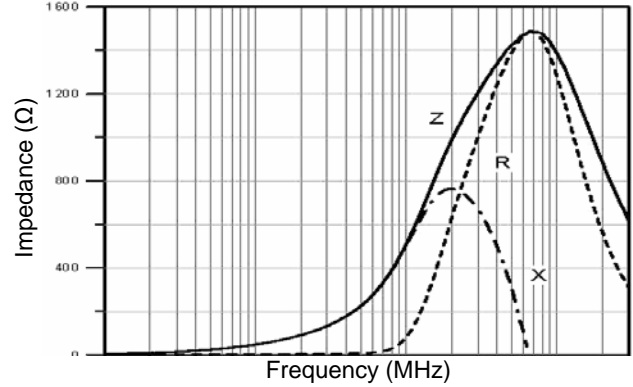
**SIM02471YA30B3B**



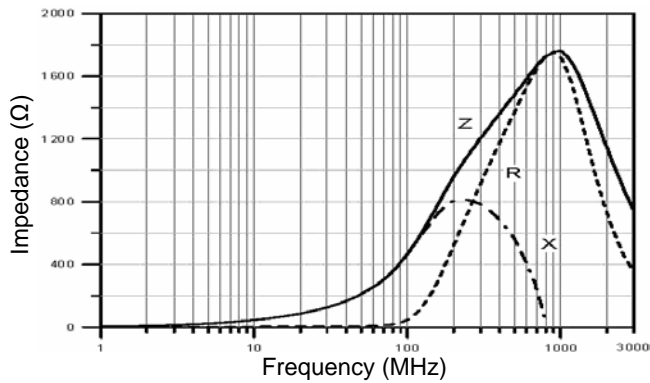
**SIM02102YA103B**



**SIM02471YA30B3B**



**SIM02601YA30B3B**



# Chip Ferrite Bead GHz High Frequency Type

SIM-3B Series

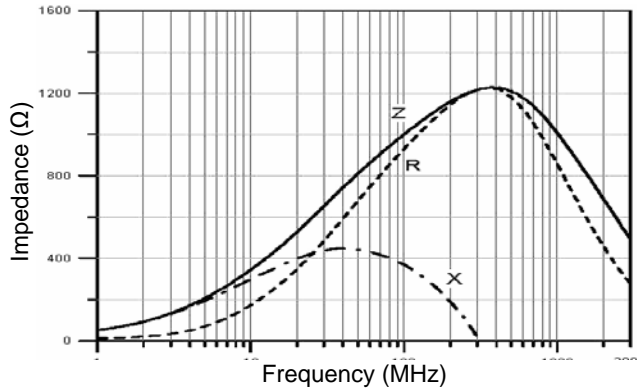
MERITEK

## ELECTRICAL CHARACTERISTICS

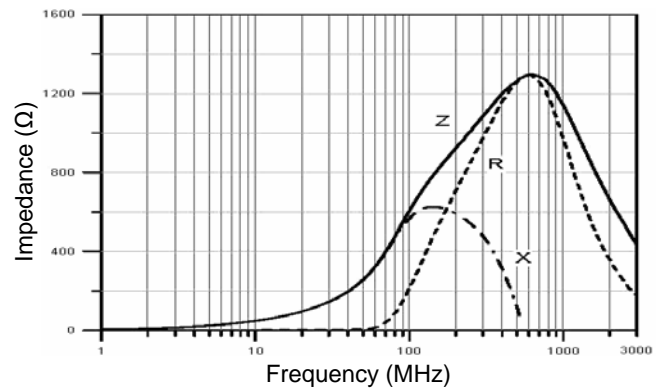
Size	Part Number	Impedance @100MHz	Tolerance @100MHz	Impedance @1GHz	Tolerance @1GHz	DCR Max.	Rated Current Max.
		( $\Omega$ )	(%)	( $\Omega$ )	(%)	( $\Omega$ )	(mA)
0603	SIM03121YA30A3B	120	±25%	140	±40%	0.25	300
	SIM03221YA20A3B	220	±25%	300	±40%	0.50	200
	SIM03301YA20A3B	300	±25%	400	±40%	0.50	200
	SIM03331YA20A3B	330	±25%	400	±40%	0.50	200
	SIM03471YA20A3B	470	±25%	500	±40%	0.70	200
	SIM03601YA10A3B	600	±25%	600	±40%	0.90	100
	SIM03801YA053B	800	±25%	1000	±40%	1.50	50
	SIM03102YA05A3B	1000	±25%	1200	±40%	1.50	50
	SIM03122YA053B	1200	±25%	1000	±40%	1.50	50
	SIM03121YA30B3B	120	±25%	300	±40%	0.25	300
	SIM03221YA20B3B	220	±25%	500	±40%	0.50	200
	SIM03301YA20B3B	300	±25%	800	±40%	0.50	200
	SIM03331YA20B3B	330	±25%	800	±40%	0.50	200
	SIM03471YA103B	470	±25%	800	Min.	1.20	100
	SIM03601YA10B3B	600	±25%	1200	Min.	1.50	100
	SIM03801YA10B3B	800	±25%	1200	Min.	1.80	100
	SIM03102YA05B3B	1000	±25%	1700	Typ.	1.80	50
	SIM03121YA203B	120	±25%	500	±40%	0.50	200
	SIM03221YA103B	220	±25%	1100	±40%	0.80	100
	SIM03301YA053B	300	±25%	1300	±40%	1.20	50
	SIM03331YA053B	330	±25%	1300	±40%	1.20	50
	SIM03471YA053B	470	±25%	2100	±40%	1.20	50
	SIM03601YA053B	600	±25%	3000	±40%	1.20	50
	SIM03121YA30K3B	120	±25%	300	Typ.	0.30	300
	SIM03221YA20K3B	220	±25%	500	Typ.	0.50	200
	SIM03301YA20K3B	300	±25%	800	Typ.	0.60	200
	SIM03331YA20K3B	330	±25%	800	Typ.	0.60	200
	SIM03471YA20K3B	470	±25%	800	Typ.	0.70	200
SIM03601YA203B	600	±25%	1000	Typ.	0.80	200	
SIM03801YA10K3B	800	±25%	1200	Typ.	0.90	100	
SIM03102YA103B	1000	±25%	1400	Typ.	1.00	100	

CHARACTERISTIC CURVES

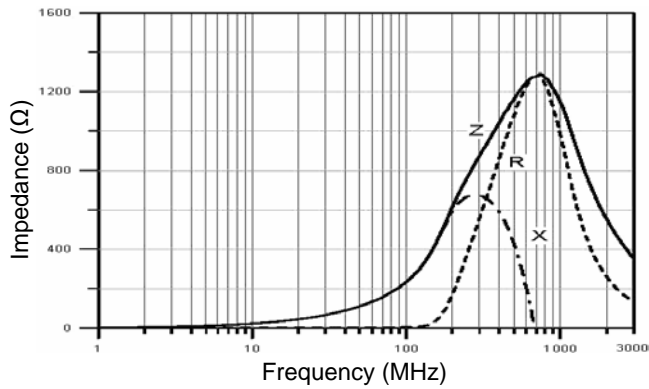
SIM03102YA05A3B



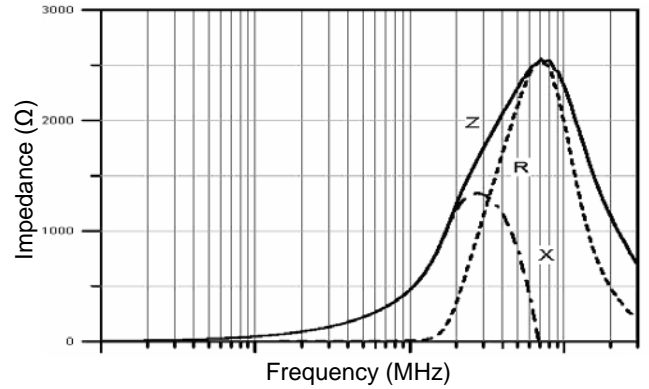
SIM03601YA10B3B



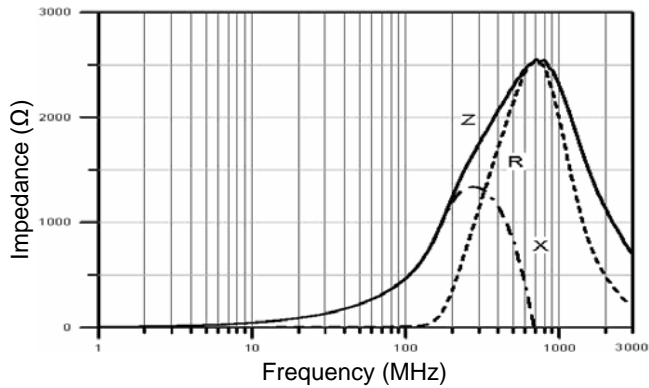
SIM03221YA103B



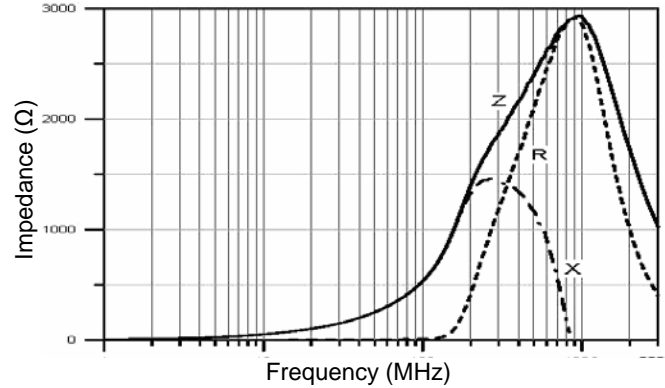
SIM03471YA053B



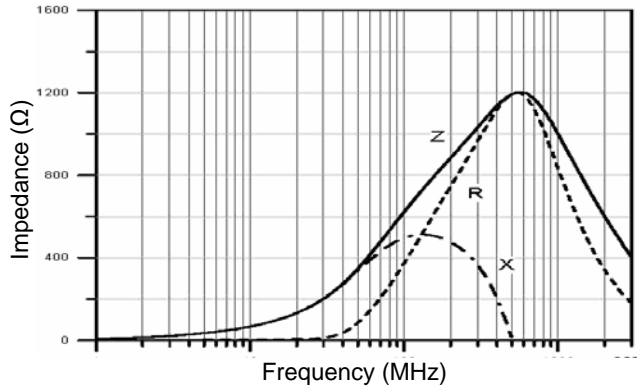
SIM03471YA053B



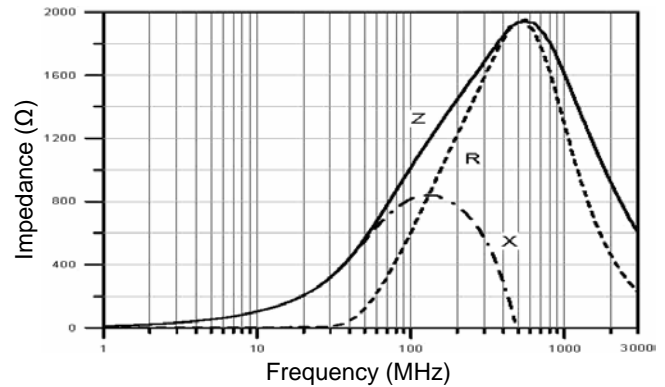
SIM03601YA053B



SIM03601YA203B



SIM03102YA103B



# Chip Ferrite Bead GHz High Frequency Type

SIM-3B Series

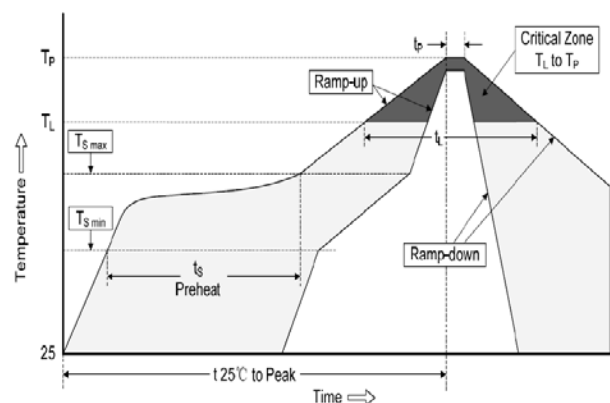
MERITEK

## RELIABILITY TEST CONDITON AND REQUIREMENT

Item	Test Conditions	Requirement															
<b>Solderability</b>	Solder: Sn-3Ag-0.5Cu, Solder temperature: 240±5°C, Depth: completely cover the termination. Dip time: 3±1sec.	More than 95% of coverage															
<b>Resistance to Soldering Heat</b>	Solder temperature: 265±3°C for 6±1 seconds; Preheating: 100°C ~ 150°C for 1 min. Solder: Sn-3Ag-0.5Cu	Appearance: No damage. Electrical and Mechanical Characteristics shall be satisfied															
<b>Vibration</b>	Oscillation Frequency: 10~2K~10 Hz, Direction: X, Y, X Testing Time: 12 hours (4 hours, 3 orientations)	Appearance: No damage. Impedance: within ±30% of initial value															
<b>Shock</b>	Test condition: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Type</th> <th>Peak Value (g's)</th> <th>Normal duration (ms)</th> <th>Wave Form</th> <th>Velocity change (ft/sec)</th> </tr> </thead> <tbody> <tr> <td>SMD</td> <td>100</td> <td>6</td> <td>Half-sine</td> <td>12.3</td> </tr> <tr> <td>Lead</td> <td>100</td> <td>6</td> <td>Half-sine</td> <td>12.3</td> </tr> </tbody> </table>	Type	Peak Value (g's)	Normal duration (ms)	Wave Form	Velocity change (ft/sec)	SMD	100	6	Half-sine	12.3	Lead	100	6	Half-sine	12.3	Appearance: No damage. Impedance: within ±30% of initial value
Type	Peak Value (g's)	Normal duration (ms)	Wave Form	Velocity change (ft/sec)													
SMD	100	6	Half-sine	12.3													
Lead	100	6	Half-sine	12.3													
<b>Terminal strength</b>	With component mounted on a PCB apply a force 10N to the side of a device being tested. This force shall be applied for 10 +1 seconds. Also, the force shall be applied gradually as not to shock the component being tested.	Appearance: no damage.															
<b>Thermal Shock</b>	Number of cycles: 1000. Condition for 1 cycle: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>No.</th> <th>Temp. (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55±5°C</td> <td>30±3</td> </tr> <tr> <td>2</td> <td>Room Temp.</td> <td>2 ~ 5</td> </tr> <tr> <td>3</td> <td>+125±2°C</td> <td>30±3</td> </tr> <tr> <td>4</td> <td>Room Temp.</td> <td>2 ~ 5</td> </tr> </tbody> </table> Measured at room temperature after placing for 24±2 hrs.	No.	Temp. (°C)	Time (min.)	1	-55±5°C	30±3	2	Room Temp.	2 ~ 5	3	+125±2°C	30±3	4	Room Temp.	2 ~ 5	Appearance: No damage. Impedance: within ±30% of initial value
No.	Temp. (°C)	Time (min.)															
1	-55±5°C	30±3															
2	Room Temp.	2 ~ 5															
3	+125±2°C	30±3															
4	Room Temp.	2 ~ 5															
<b>Bending</b>	Device mounted on a test substrate, bend the substrate by 3mm, hold for 10sec and then return.	Appearance: The terminal electrode and the ferrite must not be damaged.															
<b>Load Humidity</b>	Humidity: 85±2%R.H. Temperature: 85±2°C. Duration: 1000hrs Min. with 100% rated current. Measured at room temperature after 24±2 hrs.	Appearance: No damage. Impedance: within ±30% of initial value															
<b>Life Test</b>	Temperature: 125±2°C, Duration: 1000±12 Hrs. Measured at room temperature after 24±2 Hrs.	Appearance: No damage. Impedance: within ±30% of initial value															

## RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	120°C
	Temp. Max $T_{s(max)}$	180°C
	Time (min. to max.) ( $t_s$ )	50 ~ 150 seconds
Reflow	Temp. ( $T_L$ )	230°C
	Time (min. to max.) ( $t_L$ )	90 ~ 120 seconds
Peak Temperature ( $T_P$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		10 seconds max.
Reflow times:		3 times Max.



\*Specifications subject to change without notice.