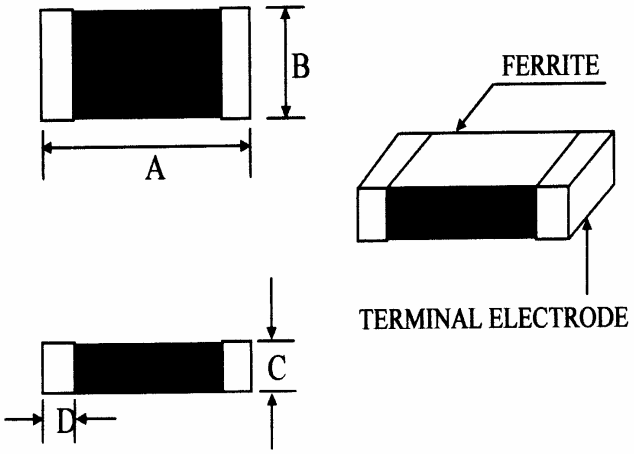
SPECIFICATION FOR APPROVAL

CUSTOMER:	CUSTOMER'S P/N:
MATSUTA'S P/N: TI160808U181	

DIMENSION:(m/m)



A	1.6 ± 0.2	m/m
B	0.8 ± 0.2	m/m
C	0.8 ± 0.2	m/m
D	0.3 ± 0.2	m/m
E		m/m
F		m/m
G		m/m
H		m/m
I		m/m
J		m/m
K		m/m
L		m/m
M		m/m
N		m/m
O		m/m

ELECTRICAL REQUIREMENTS

Z	180 ± 25% OHM	TEST FREQ.	100MHz/100mV
Z		TEST FREQ.	MHz
Z		TEST FREQ.	MHz
Z		TEST FREQ.	MHz
Z		TEST FREQ.	MHz
Rdc	0.15 OHM. MAX		
Idc	2000 mA MAX.		

TEST INSTRUMENTS

- ●HP 4338A MILLIOHMMETER
- ○HP 4195A NETWORK/SPECTRUM ANALYZER
- ○HP 4284A BIAS CURRENT SOURCE
- ○HP 4285A PRECISION LCR METER
- ○HP 4286A PRECISION LCR METER
- ●HP 4291B RF IMPEDANCE /MATERIAL ANALYZER
- ○HP 6632A DC POWER SUPPLY

DRAWN BY	CHECKED BY	APPROVED BY
Juli Wang	John Chuang	Lionel Lin

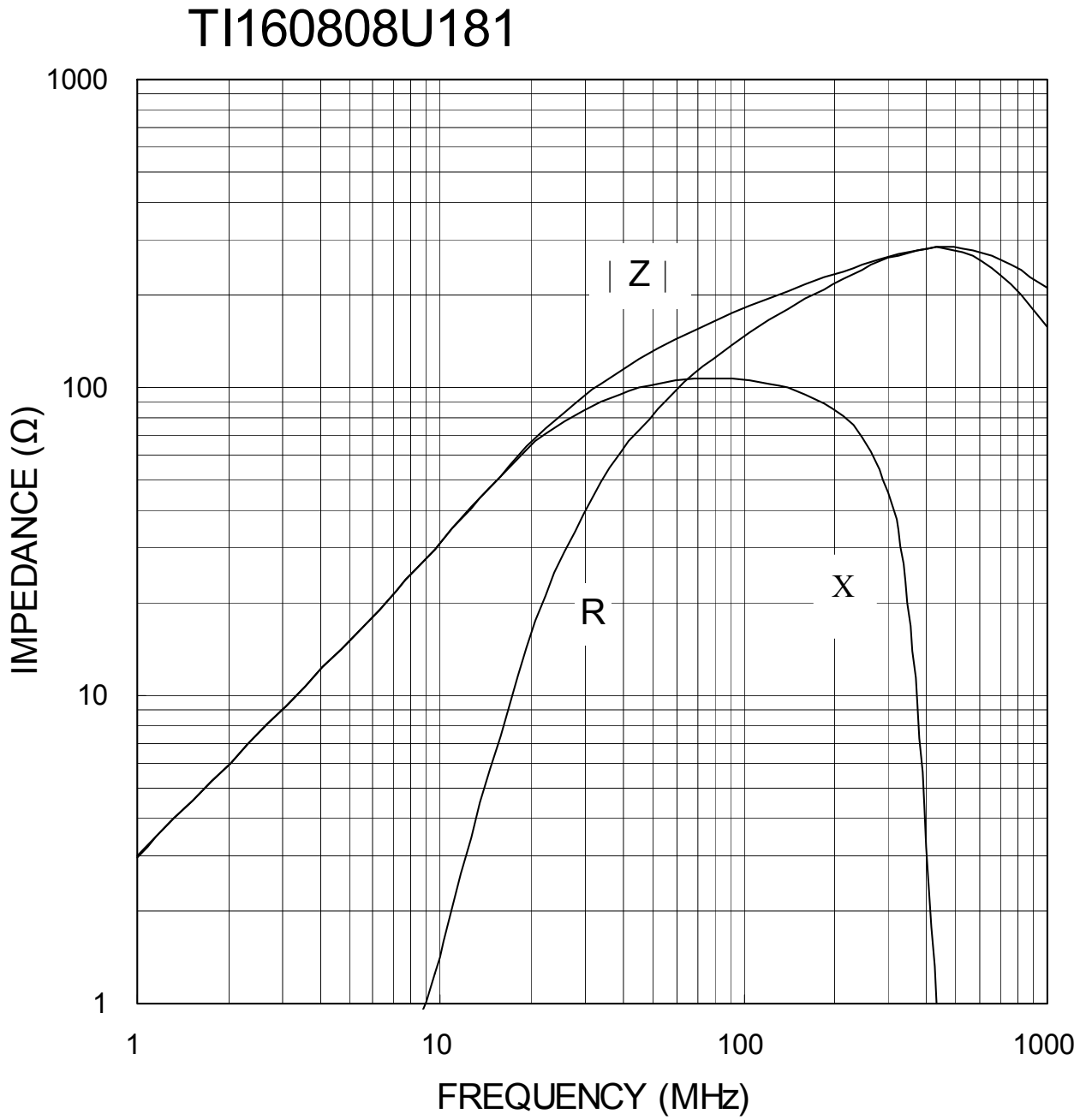
TEST DATA

CUSTOMER:							
CUSTOMER'S P/N:						SERIES NO:	TI2688
MATSUTA'S P/N:		TI160808U181				DATE:	27-JUL-2011
MEAS	A	B	C	D	Z	Rdc	Idc
ITEM	(m/m)	(m/m)	(m/m)	(m/m)	(Ω)	(Ω)	(mA)
SPEC	1.6 ± 0.2	0.8 ± 0.2	0.8 ± 0.2	03 ± 0.2	180 ±25%	0.15 MAX	2000 MAX
TEST FREQ.					100MHz		
1	1.63	0.81	0.83	0.30	157.5	0.074	OK
2	1.60	0.83	0.81	0.28	165.6	0.077	OK
3	1.59	0.80	0.82	0.32	166.6	0.076	OK
4	1.62	0.82	0.82	0.31	150.8	0.072	OK
5	1.61	0.82	0.83	0.30	156.9	0.074	OK
6	1.63	0.80	0.81	0.32	149.4	0.075	OK
7	1.62	0.80	0.82	0.30	161.2	0.074	OK
8	1.61	0.81	0.82	0.33	157.7	0.076	OK
9	1.62	0.82	0.83	0.31	164.5	0.077	OK
10	1.60	0.81	0.81	0.29	155.5	0.079	OK
AVG.	1.61	0.81	0.82	0.31	158.6	0.075	OK
R	0.04	0.03	0.02	0.05	17.2	0.007	OK

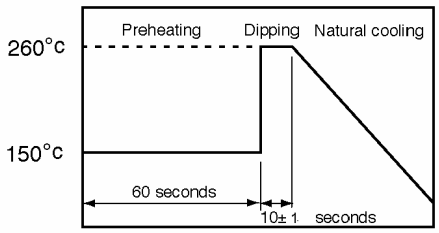
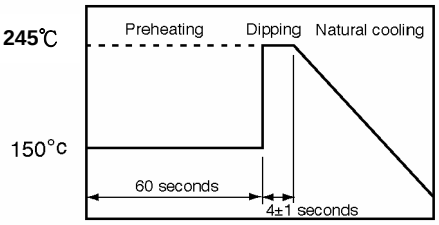
DRAWN BY	CHECKED BY	APPROVED BY
Juli Wang	John Chuang	Lionel Lin

IMPEDANCE VS. FREQUENCY CHARACTERISTIC

TEST INSTRUMENT :
HP 4291B RF IMPEDANCE/MATERIAL ANALYZER



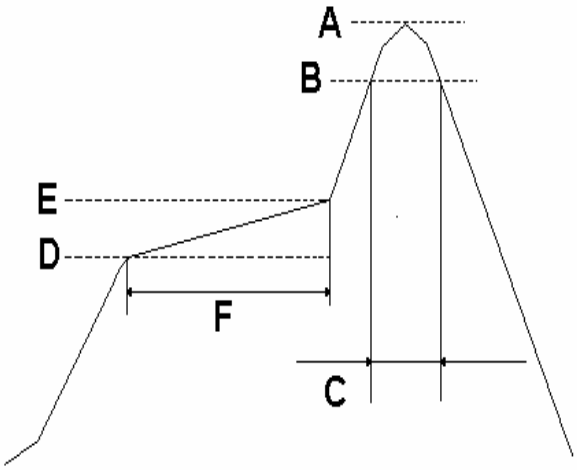
RELIABILITY TEST

Item	Performance	Test condition
Operating temperature range	-55 °C to + 125 °C	
Storage temperature and umidity ranges	40 °C MAX., 70% RH MAX.	
Soldering heat resistance	The chip shall not be cracks. More than 75% of terminal electrode shall be covered with solder.	Preheat: 150 °C, 60 seconds Solder temperature : 260 ± 5 °C Flux: Rosin Dip time: 10 ± 1 seconds 
Solderability	More than 90% of the terminal electrode shall be covered with new solder.	Preheat: 150 °C, 60 seconds Solder temperature: 245 ± 5 °C Flux: Rosin Dip time: 4 ± 1 seconds 

Recommended Soldering Conditions

(REFLOW TEMPERATURE PROFILE) Lead-Free

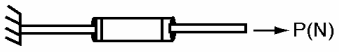
A	*260 ± 5℃*
B	*230 ± 5℃*
C	*30 ± 10 sec*
D	*150℃*
E	*180℃*
F	*90 ± 30sec*



RELIABILITY TEST

Terminal strength

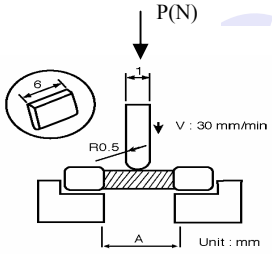
The terminal electrode and the body shall not be damaged by the forces applied on the right conditions.



Type	P (kgf)	Time (s)
T□100505	0.3	
T□160808	0.5	
T□201209	0.6	
T□201212	0.8	
T□321611	1.0	
T□322513	1.0	30 ± 5
T□451616	1.0	
T□453215	1.5	
TA3216M4	0.5	

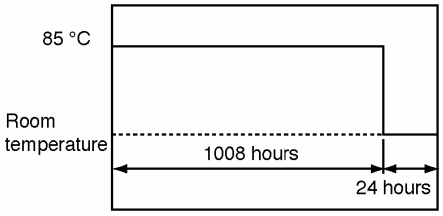
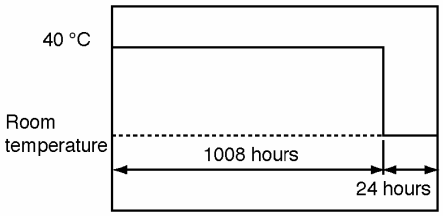
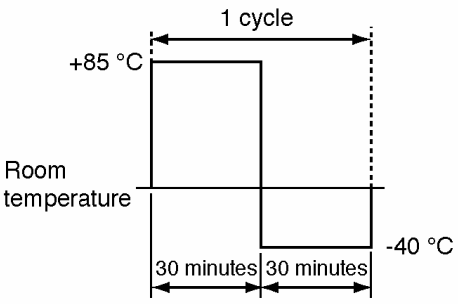
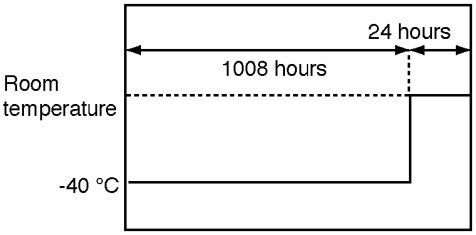
Bending strength

The body shall not be damaged by the forces applied on the right conditions.

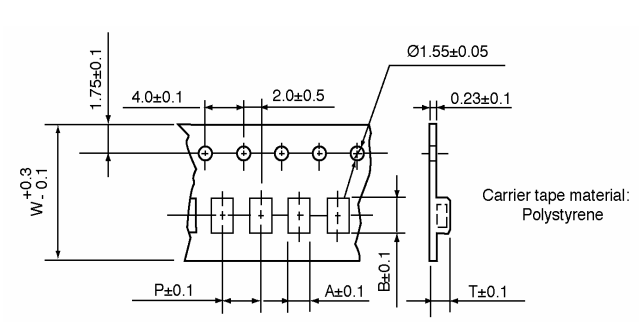


Type	A (mm)	P (kgf)
T□160808	1.0	0.5
T□201209	1.4	1.0
T□201212	1.4	1.2
T□321611	2.0	2.0
T□322513	2.0	2.5
T□451616	2.5	2.5
T□453215	2.7	2.5
TA3216M4	1.4	1.0

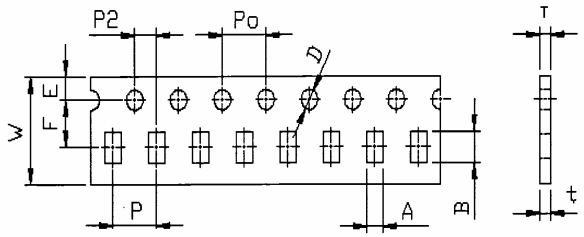
RELIABILITY TEST

Item	Performance	Test condition
High temperature resistance	Appearance: Ferrite shall not be damaged. Impedance: Within±20% of the initial value.	Temperature: 85±2℃ Testing time: 1008±12 hours Measurement: After placing for 24 hours min. 
Humidity resistance	Appearance: Ferrite shall not be damaged. Impedance: Within±20% of the initial value	Humidity: 90 to 95% RH Temperature: 40±2℃ Testing time: 1008±12 hours Measurement: After placing for 24 hours min. 
Thermal Shock	Appearance: Cracking, chipping or any other defects harmful to the characteristics shall not be allowed. Impedance: Within±20% of the initial value	Temperature: -40℃, +85℃, kept stabilized for 30 minutes each Cycle: 100 cycles Measurement: After placing for 24 hours min. 
Low temperature storage life test	Appearance: Cracking, chipping or any other defects harmful to the characteristics shall not be allowed. Impedance: Within±20% of the initial value.	Temperature: -40±2℃ Testing time: 1008±12 hours Measurement: After placing for 24 hours min. 

- Tape dimensions and packaging quantities



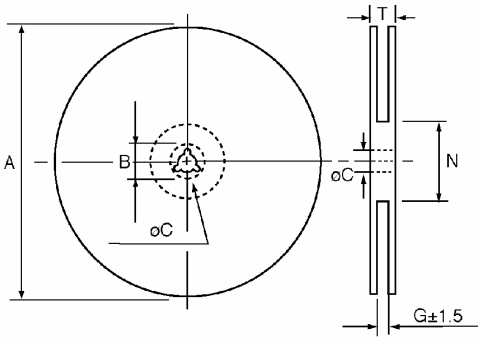
Carrier tape material: paper



material: Paper (Dimensions in mm)						
TYPE	A	B	W	P	T	CHIPS / REEL
100505	0.62	1.12	8	2	0.60	10000
160808	1.10	1.90	8	4	0.95	4000
201209	1.50	2.30	8	4	0.95	4000
material: Polystyrene (Dimensions in mm)						
TYPE	A	B	W	P	T	CHIPS / REEL
160808	1.01	1.80	8	4	1.02	4000
201209	1.42	2.25	8	4	1.04	4000
201212	1.50	2.35	8	4	1.45	2000
321611	1.88	3.50	8	4	1.27	3000
322513	2.77	3.42	8	4	1.55	2000
451616	1.93	4.95	12	4	1.93	2000
453215	3.66	4.95	12	8	1.85	1000
TA3216M4	1.88	3.50	8	4	1.40	3000

- Reel dimensions

Material:Paper, Plastic



Dimensions in mm

TYPE	8mm	12mm
A	178±2	178±2
B	21.0±0.8	21.0±0.8
C	13.0±0.8	13.0±0.8
G	10.0	14.0
N	75	75
T	12.5	16.5