MULTILAYER CHIP SUPPRESSORS (CHIP BEADS)
- FBU SERIES -

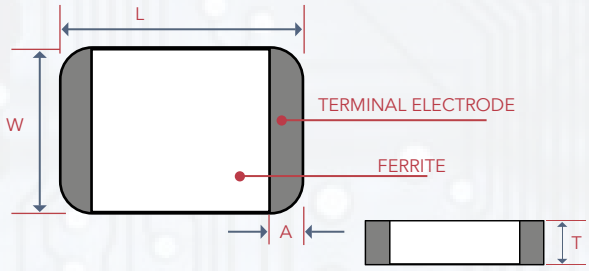
FEATURES

- FBU Series for DC Power Line
- Rated Current: 4-9 A
- Operating Temp -55 - 125°C
- The FBU series can be used on high current circuits due to its low DC resistance. It can match power lines to a maximum of 9 A DC.

APPLICATIONS

- High current DC Power Line EMI suppress. Examples:
  - CD-ROM'S
  - Hard Drives
  - Modems
  - Monitors
  - Motherboards
  - Printers

SHAPES AND DIMENSIONS



SHAPE	L (MM)	W (MM)	T (MM)	A (MM)
160808 (0603)	1.6 ± 0.2	0.8 ± 0.2	0.8 ± 0.15	0.1~0.3
201209 (0805)	2.0 ± 0.2	1.25 ± 0.2	0.9+0.15/-0.2	0.2~0.8
321611 (1206)	3.2 ± 0.2	1.6 ± 0.2	1.1 ± 0.2	0.4~1.0
322513 (1210)	3.2 ± 0.2	2.5 ± 0.2	1.3 ± 0.2	0.6~1.0
451616 (1806)	4.5 ± 0.2	1.6 ± 0.2	1.6 ± 0.2	0.6~1.0
453215 (1812)	4.5 ± 0.2	3.2 ± 0.2	1.5 ± 0.2	0.6~1.0
565015 (2220)	5.59 ± 0.51	5.08 ± 0.25	1.5 ± 0.25	0.51~1.01
565018 (2220)	5.59 ± 0.51	5.08 ± 0.25	1.8 ± 0.25	0.51~1.01
565032 (2220)	5.59 ± 0.51	5.08 ± 0.25	3.2 ± 0.25	0.51~1.01
565036 (2220)	5.59 ± 0.51	5.08 ± 0.25	3.6 ± 0.25	0.51~1.01

ORDERING INFORMATION

FBU	201209	T	600Y-S
PRODUCT SERIES CODE	DIMENSIONS L x W x T	PACKAGING	NOMINAL IMPEDANCE 600 : 60Ω AT 100MHz

PACKAGING GUIDE

SERIES	PART NUMBER	PCS PER REEL
FBU	100505 (0402)	10000 /R
FBU	160808 (0603)	4000 /R
FBU	201209 (0805)	4000 /R
FBU	321611 (1206)	3000 /R
FBU	322513 (1210)	2000 /R
FBU	451616 (1806)	2000 /R
FBU	453223 (2220)	2500 /R
FBU	565015 (2220)	2000 /R
FBU	565018 (2220)	2000 /R
FBU	565032 (2220)	2000 /R
FBU	565036 (2220)	2000 /R

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ELECTRICAL CHARACTERISTICS - 1608

PART NUMBER	IMPEDANCE (Ω) ±25% [100MHz]	DC RESISTANCE Ω (MAX)	RATED CURRENT mA (MAX)
FBU160808T-070Y-S	7	0.025	4000
FBU160808T-100Y-S	10	0.01	6000
FBU160808T-220Y-S	22	0.008	6000
FBU160808T-260Y-S	26	0.007	6000
FBU160808T-300Y-S	30	0.01	5000

ELECTRICAL CHARACTERISTICS - 2012

PART NUMBER	IMPEDANCE (Ω) ±25% [100MHz]	DC RESISTANCE Ω (MAX)	RATED CURRENT mA (MAX)
FBU201209T-070Y-S	7	0.008	6000
FBU201209T-110Y-S	11	0.008	6000
FBU201209T-170Y-S	17	0.008	6000
FBU201209T-190Y-S	19	0.008	6000
FBU201209T-220Y-S	22	0.008	6000
FBU201209T-260Y-S	26	0.008	6000
FBU201209T-300Y-S	30	0.008	6000
FBU201209T-310Y-S	31	0.015	6000
FBU201209T-600Y-S	60	0.010	5000
FBU201209T-800Y-S	80	0.020	5000
FBU201209T-121Y-S	120	0.020	4000
FBU201209T-121Y-S-H	120	0.0150	5000
FBU201209T-181Y-S	180	0.03	4000

ELECTRICAL CHARACTERISTICS - 3216

PART NUMBER	IMPEDANCE (Ω) ±25% [100MHz]	DC RESISTANCE Ω (MAX)	RATED CURRENT mA (MAX)
FBU321611T-190Y-S	19	0.006	6000
FBU321611T-260Y-S	26	0.006	6000
FBU321611T-300Y-S	30	0.006	6000
FBU321611T-310Y-S	31	0.006	6000
FBU321611T-330Y-S	33	0.006	6000
FBU321611T-520Y-S	52	0.008	6000
FBU321611T-600Y-S	60	0.010	6000
FBU321611T-800Y-S	80	0.020	4000
FBU321611T-121Y-S	120	0.020	4000
FBU321611T-121Y-S-H	120	0.010	6000

ELECTRICAL CHARACTERISTICS - 3225

PART NUMBER	IMPEDANCE (Ω) ±25% [100MHz]	DC RESISTANCE Ω (MAX)	RATED CURRENT mA (MAX)
FBU322513T-520Y-S	52	0.008	6000
FBU322513T-600Y-S	60	0.008	6000

RoHS

ELECTRICAL CHARACTERISTICS - 4516

PART NUMBER	IMPEDANCE (Ω) ±25% [100MHz]	DC RESISTANCE Ω (MAX)	RATED CURRENT mA (MAX)
FBU451616T-600Y-S	60	0.008	6000
FBU451616T-720Y-S	72	0.01	6000
FBU451616T-750Y-S	75	0.008	6000

ELECTRICAL CHARACTERISTICS - 4532

PART NUMBER	IMPEDANCE (Ω) ±25% [100MHz]	DC RESISTANCE Ω (MAX)	RATED CURRENT mA (MAX)
FBU453215T-600Y-S	60	0.008	6000
FBU453215T-800Y-S	80	0.01	9000
FBU453215T-121Y-S	120	0.020	4000
FBU453215T-121Y-S-H	120	0.015	6000
FBU453215T-151Y-S	150	0.020	4000
FBU453215T-101Y-S	101	0.007	8000

ELECTRICAL CHARACTERISTICS - 5650

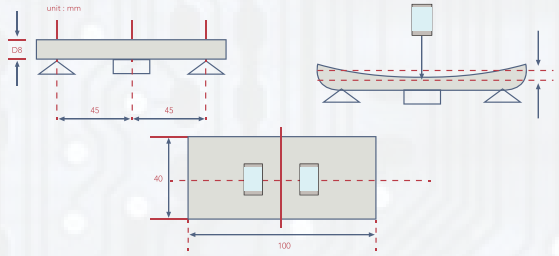
PART NUMBER	IMPEDANCE (Ω) ±25% [100MHz]	DC RESISTANCE Ω (MAX)	RATED CURRENT mA (MAX)
FBU565015T-171Y-S	170	0.03	4000
FBU565015T-101Y-S	100	0.006	6000
FBU565015T-151Y-S	150	0.015	5000
FBU565015T-181Y-S	180	0.02	5000
FBU565015T-251Y-S	250	0.015	4000
FBU565015T-271Y-S	270	0.035	4000
FBU565015T-401Y-S	400	0.03	4500
FBU565015T-801Y-S	800	0.01	8000

ENVIRONMENTAL CHARACTERISTICS

ELECTRICAL PERFORMANCE TEST

ITEM	SPECIFICATION	TEST METHODS
Impedance	Refer to standard electrical spec.	- HP4286A
DCR		- HP 4338 digital mili-ohm meter

MECHANICAL PERFORMANCE TEST

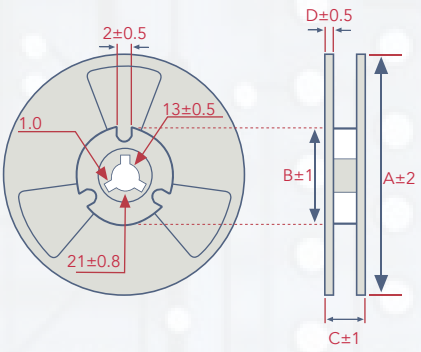
ITEM	SPECIFICATION	TEST METHODS
Substrate Bending Test	- Without deformation cases - Impedance: within±30% of initial value - DC Resistance shall be satisfied	- Test device shall be soldered on the substrate - Substrate Dimension:100x40x0.8mm - Deflection: 3.0mm - Keeping Time: 10sec and then return 
Vibration	- Appearance: No damage - Impedance: within±30% of initial value - DC Resistance shall be satisfied	- Test device shall be soldered on the substrate - Oscillation Frequency : 10 to 55 to 10Hz for 1min - Amplitude : 1.5mm(peak-peak) - Time : 2hrs for each axis (X,Y&Z), total 6hrs
Resistance to Soldering Heat	- No visible damage - Electrical characteristics and mechanical characteristics shall be satisfied	- Solder temp: 265±5°C - Immersion time: 6±1sec - Preheating: 100°C to 150°C, 1 minute - Measured after exposure in the room condition for 24hrs - Solder: Sn-3Ag-0.5Cu
Solderability	- 95% min. coverage of all metabolized area	- Solder Temperature: 240±5°C - Immersion Time: 3±1sec - Solder: Sn-3Ag-0.5Cu
Terminal Strength	- Without deformation cases - Impedance: within±30% of initial value - DC Resistance shall be satisfied	- Solder chip on PCB and applied 10N (1.02Kgf) for 10 sec 
Temperature Cycle	- Appearance: No damage - Impedance: within±30% of initial value DC Resistance shall be satisfied	One cycle: - One cycle/step1: -55±3°C for 30±3min step2: standard atmospheric conditions 5s or less step3:125±2°C for 30±3min step4: standard atmospheric conditions 5s or less - Total: 100cycles - Measured after exposure in the room condition for 24hrs
Humidity Resistance		- Temperature: 60±2°C - Relative Humidity: 90 ~ 95% - Applied Current: Rated Current(maximum value) - Time: 1008±12hrs - Measured after exposure in the room condition for 24hrs
High Temperature Resistance		- Temperature: 125±2°C - Applied Current: Rated Current(maximum value) - Time: 1008±12hrs - Measured after exposure in the room condition for 24hrs
Low Temperature Storage Life Test		- Temperature: -55±2°C - Time: 1008±12hrs - Measured after exposure in the room condition for 24hrs
Thermal Shock		- -55°C~125°C kept stabilized for 30 minutes each for 100 cycles - Measured after exposure in the room condition for 24hrs

- Operating Temperature: -55℃ ~ 125℃
- Storage Temperature: 15~28℃ ; Humidity < 80%RH

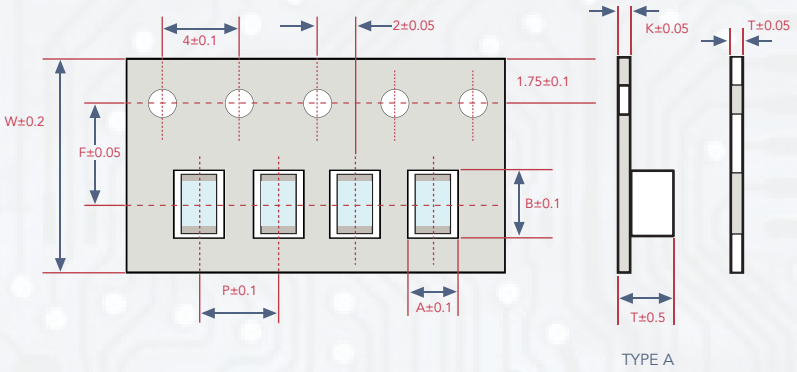
RoHS

PACKAGING

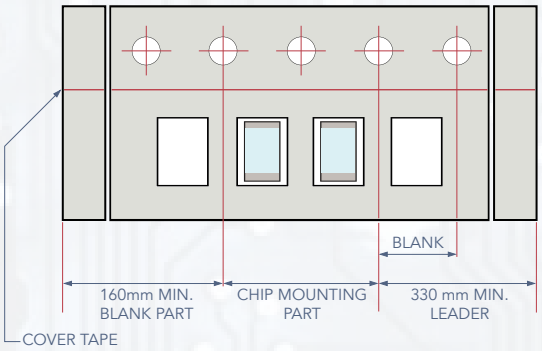
- Reel Specifications



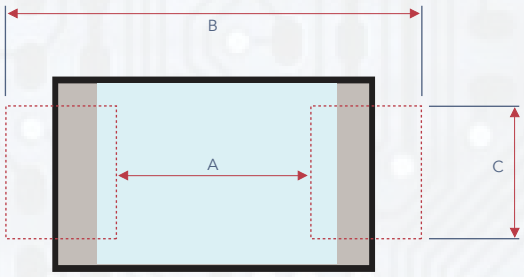
- Tape Specifications



- Tape Material



- Recommeded Pattern



Unit : mm

TYPE	TAPE DIMENSIONS								REEL DIMENSIONS				RECOMMENDED PATTERN			QUANTITY (EA)
	A	B	T	W	P	F	K	TAPE TYPE	A	B	C	D	A	B	C	
FBU060303	0.38	0.68	1.10	8.0	2.0	3.5	-	B	178	60	10	2	0.25	0.69	0.32	15000
FBU100505	0.65	1.15	0.80	8.0	2.0	3.5	-	B	178	60	10	2	0.50	2.10	0.55	10000
FBU160808	1.10	1.90	1.10	8.0	4.0	3.5	-	B	178	60	10	2	0.60	2.60	0.80	4000
FBU201209	1.55	2.30	1.20	8.0	4.0	3.5	-	B	178	60	10	2	0.66	3.23	1.47	4000
FBU321611	1.90	3.50	1.40	8.0	4.0	3.5	0.2	A	178	60	10	2	2.20	4.40	2.06	3000
FBU321616	1.88	3.64	1.90	8.0	4.0	3.5	0.2	A	178	60	10	2	2.20	4.2-5.2	1.2	2000
FBU322513	2.90	3.60	1.70	8.0	4.0	3.5	0.2	A	178	60	10	2	2.13	4.06	2.74	2000
FBU451616	2.90	4.90	1.40	12	4.0	5.5	0.3	A	178	60	14	2	2.70	5.70	2.24	2000
FBU453215	3.60	4.90	2.05	12	8.0	5.5	0.3	A	178	60	14	2	2.57	5.90	4.22	1000

SOLDERING CONDITION

IR Reflow Soldering
(1) Time of IR reflow soldering at maximum temperature point 260°C zzz: 10s

(2) Time of soldering iron at maximum temperature point 280°C : 3s