

# Type 350 105 °C, Low Inductance, Radial, Aluminum Electrolytic

## High Frequency, Solid Aluminum Top



Type 350's solid aluminum top assures extremely low impedance. With a typical 4 to 6 nH ESL, the self resonant frequency is well above 100 kHz. The very low ESR assures the low impedance rating. The capacitors are fitted with three rugged welded mounting leads to provide maximum resistance

### Highlights

- Operates to beyond 200 kHz
- Less than 10 nH ESL
- Solid aluminum top

### Specifications

<b>Capacitance Range:</b>	90 to 11,000 F
<b>Voltage Range:</b>	6.3 to 100 Vdc
<b>Capacitance Tolerance:</b>	-10 +75%
<b>Operating Temperature Range:</b>	-55 °C to +105 °C
<b>Shelf Life:</b>	500 hours @ +105 °C
<b>Leakage Current:</b>	$\leq 0.5 \sqrt{CV} \mu\text{A}$ at +25 °C
<b>Cold Impedance:</b>	-55 ° multiple of +25 °C $Z \leq$ 6 for 6.3 V, 3 for 10 to 50 V, 2 for 75 & 100 V
<b>Ripple Current Multipliers:</b>	Ambient Temperature

45 °C	55 °C	65 °C	75 °C	85 °C	95 °C	105 °C
1.66	1.52	1.37	1.20	1.00	0.75	0.36

### Frequency

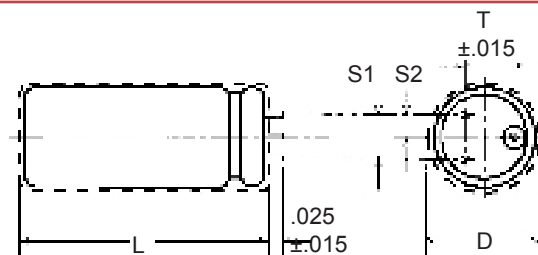
	60 Hz	120 Hz	360 Hz	1 kHz	5 kHz	10 kHz & up
6.3 to 20 V	0.53	0.65	0.73	0.90	0.95	1.00
25 to 35 V	0.45	0.55	0.65	0.85	0.92	1.00
50 to 75 V	0.36	0.50	0.60	0.80	0.90	1.00
100 V	0.29	0.40	0.52	0.75	0.87	1.00



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

<b>Load Life:</b>	4,000 h @ +105 °C at full load $\Delta$ Capacitance $\pm 10\%$ ESR 150% of limit DCL 100% of limit
<b>Shelf Life:</b>	500 h @ 105 °C, capacitance, ESR and DCL, initial requirement
<b>Vibration:</b>	10 to 55 Hz, 0.06" and 10 g max, 2 h in each plane

### Outline Drawing



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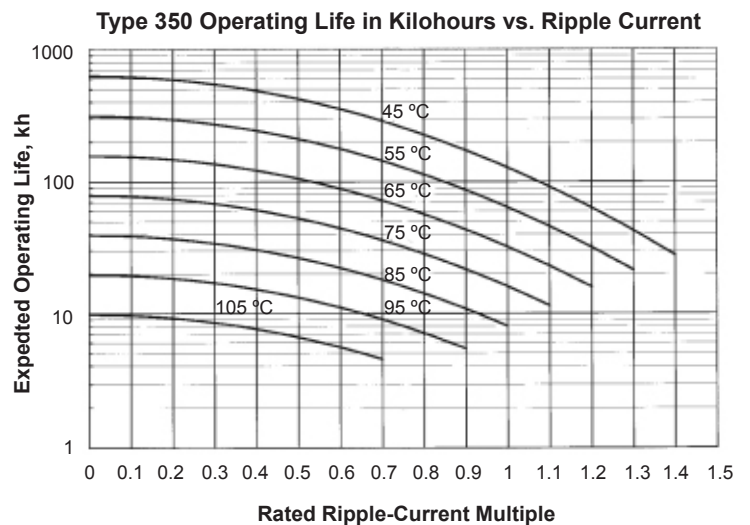
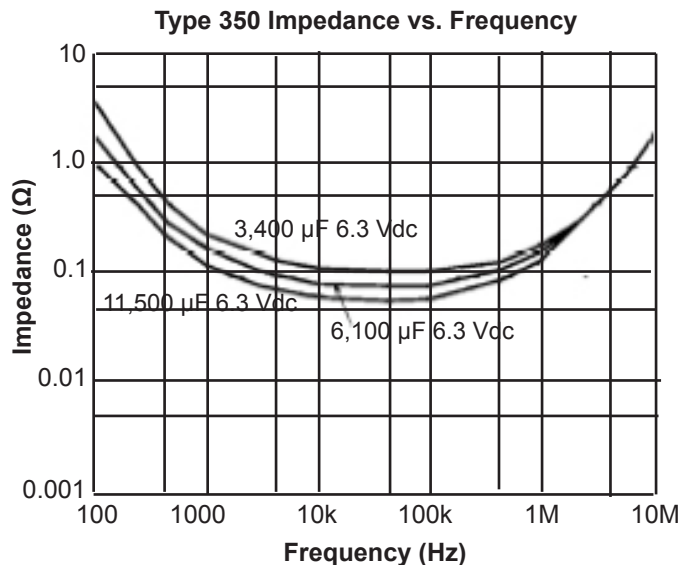
## Case Dimensions

Case Code	Inches				
	Nominal D x L	Insulated D x L	S1 ±0.015	S2 ±0.015	T
GE	3/4 x 1 1/8	0.775 x 1.157	0.2	0.10	0.3
GJ	3/4 x 1 5/8	0.775 x 1.657	0.2	0.10	0.3
GL	3/4 x 2 1/8	0.775 x 2.157	0.2	0.10	0.3
GP	3/4 x 2 5/8	0.775 x 2.657	0.2	0.10	0.3
HE	7/8 x 1 1/8	0.900 x 1.157	0.3	0.15	0.4
HJ	7/8 x 1 5/8	0.900 x 1.657	0.3	0.15	0.4
HL	7/8 x 2 1/8	0.900 x 2.157	0.3	0.15	0.4
HP	7/8 x 2 5/8	0.900 x 2.657	0.3	0.15	0.4
JJ	1 x 1 5/8	1.025 x 1.657	0.3	0.15	0.4

## Part Numbering System

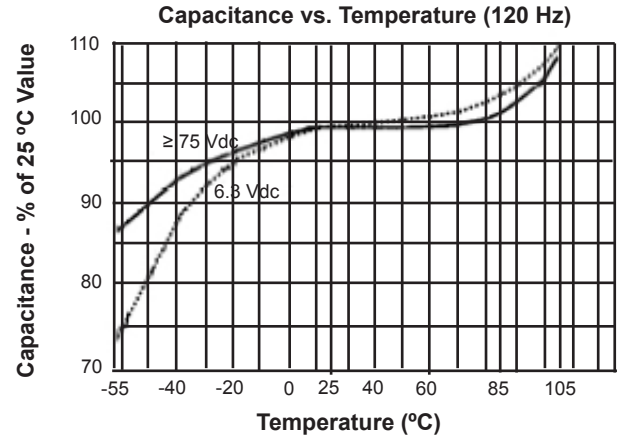
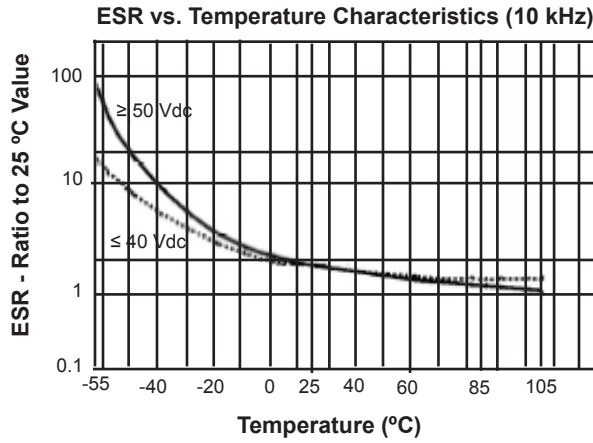
<b>350</b>	<b>JP</b>	<b>1152</b>	<b>U</b>	<b>6R3</b>	<b>C</b>
<b>Type</b>	<b>Case Code</b>	<b>Capacitance</b>	<b>Tolerance</b>	<b>Voltage</b>	<b>Insulation</b>
350	See table	900 = 90 µF 161 = 160 µF 882 = 8800 µF 1152 = 11500 µF	U = -10 +75% T = -10 +50%	6R3 = 6.3 Vdc 063 = 63 Vdc 100 = 100 Vdc	O = Bare can B = Plastic insulation with epoxy C = Plastic insulation, no epoxy

## Typical Performance Curves



# Type 350 105 °C, Low Inductance, Radial, Aluminum Electrolytic

## Typical Performance Curves



## Ratings

Cap (µF)	Catalog Part Number	ESR Max Ω +25 °C		Imped. Ω +25 °C 100 kHz	Ripple A +85 °C 20 kHz	Nom Size (in) DxL
		120 Hz	20 kHz			
<b>6.3 Vdc (8.5 Vdc Surge)</b>						
1600	350GE162U6R3C	0.087	0.043	0.040	3.2	3/4 x 1 1/8
2400	350HE242U6R3C	0.065	0.035	0.034	3.7	7/8 x 1 1/8
3000	350GJ302U6R3C	0.050	0.025	0.025	4.6	3/4 x 1 5/8
3400	350JE342U6R3C	0.058	0.031	0.031	4.0	1 x 1 1/8
4200	350GL422U6R3C	0.035	0.018	0.019	6.6	3/4 x 2 1/8
4400	350HJ442U6R3C	0.037	0.020	0.022	5.6	7/8 x 1 5/8
5400	350GP542U6R3C	0.029	0.015	0.017	8.0	3/4 x 2 5/8
6100	350J612U6R3C	0.033	0.018	0.020	6.2	1 x 1 5/8
6300	350HL632U6R3C	0.027	0.015	0.018	7.5	7/8 x 2 1/8
8300	350HP832U6R3C	0.022	0.013	0.016	8.8	7/8 x 2 5/8
8800	350JL882U6R3C	0.024	0.014	0.016	8.1	1 x 2 1/8
11000	350JP113U6R3C	0.020	0.012	0.015	9.6	1 x 2 5/8
<b>7.5 Vdc (10 Vdc Surge)</b>						
1500	350GE152U7R5C	0.091	0.044	0.040	3.2	3/4 x 1 1/8
2300	350HE232U7R5C	0.068	0.035	0.034	3.7	7/8 x 1 1/8
2700	350GJ272U7R5C	0.052	0.026	0.025	4.6	3/4 x 1 5/8
3200	350JE322U7R5C	0.059	0.031	0.030	3.9	1 x 1 1/8
3900	350GL392U7R5C	0.037	0.018	0.019	6.6	3/4 x 2 1/8
4200	350HJ422U7R5C	0.039	0.021	0.022	5.6	7/8 x 1 5/8
5100	350GP512U7R5C	0.030	0.015	0.016	7.9	3/4 x 2 5/8
5800	350J582U7R5C	0.034	0.018	0.019	6.1	1 x 1 5/8
6000	350HL602U7R5C	0.028	0.015	0.018	7.4	7/8 x 2 1/8
7900	350HP792U7R5C	0.023	0.013	0.016	8.8	7/8 x 2 5/8
8400	350JL842U7R3C	0.025	0.014	0.016	8.0	1 x 2 1/8
11000	350JP113U7R5C	0.020	0.012	0.014	9.5	1 x 2 5/8
<b>10 Vdc (12 Vdc Surge)</b>						
1400	350GE142U010C	0.098	0.045	0.040	3.1	3/4 x 1 1/8
2100	350HE212U010C	0.072	0.035	0.034	3.6	7/8 x 1 1/8
2600	350GJ262U010C	0.055	0.026	0.025	4.5	3/4 x 1 5/8
3000	350JE302U010C	0.062	0.032	0.030	3.6	1 x 1 1/8
3800	350GL382U010C	0.039	0.019	0.019	6.5	3/4 x 2 1/8
3900	350HJ392U010C	0.041	0.021	0.022	5.5	7/8 x 1 5/8
4800	350GP482U010C	0.031	0.015	0.016	7.8	3/4 x 2 5/8
5400	350J542U010C	0.036	0.019	0.020	5.7	1 x 1 5/8

Cap (µF)	Catalog Part Number	ESR Max Ω +25 °C		Imped. Ω +25 °C 100 kHz	Ripple A +85 °C 20 kHz	Nom Size (in) DxL
		120 Hz	20 kHz			
<b>10 Vdc (12 Vdc Surge)</b>						
5600	350HL562U010C	0.030	0.015	0.018	7.3	7/8 x 2 1/8
7300	350HP732U010C	0.024	0.013	0.016	8.7	7/8 x 2 5/8
7800	350JL782U010C	0.026	0.014	0.016	7.5	1 x 2 1/8
10000	350JP103U010C	0.021	0.012	0.015	9.0	1 x 2 5/8
<b>12 Vdc (18 Vdc Surge)</b>						
1100	350GE112U012C	0.108	0.046	0.042	3.1	3/4 x 1 1/8
1700	350HE172U012C	0.079	0.036	0.034	3.6	7/8 x 1 1/8
2000	350GJ202U012C	0.061	0.027	0.025	4.4	3/4 x 1 5/8
2400	350JE242U012C	0.067	0.032	0.031	3.8	1 x 1 1/8
2900	350GL292U012C	0.044	0.019	0.020	6.4	3/4 x 2 1/8
3000	350HJ302U012C	0.045	0.021	0.022	5.4	7/8 x 1 5/8
3700	350GP372U012C	0.035	0.016	0.017	7.7	3/4 x 2 5/8
4200	350JJ422U012C	0.038	0.029	0.020	6.0	1 x 1 5/8
4400	350HL442U012C	0.032	0.016	0.018	7.2	7/8 x 2 1/8
5800	350HP582U012C	0.026	0.013	0.016	8.6	7/8 x 2 5/8
6100	350JL612U012C	0.028	0.014	0.016	7.8	1 x 2 1/8
8000	350JP802U012C	0.023	0.012	0.015	9.3	1 x 2 5/8
<b>16 Vdc (20 Vdc Surge)</b>						
950	350GE951U016C	0.116	0.047	0.042	3.0	3/4 x 1 1/8
1500	350HE152U016C	0.085	0.037	0.035	3.5	7/8 x 1 1/8
1700	350GJ172U016C	0.066	0.027	0.025	4.3	3/4 x 1 5/8
2000	350JE202U016C	0.071	0.033	0.031	3.7	1 x 1 1/8
2500	350GL252U016C	0.047	0.020	0.020	6.3	3/4 x 2 1/8
2600	350HJ262U016C	0.048	0.022	0.022	5.3	7/8 x 1 5/8
3200	350GP322U016C	0.037	0.016	0.017	7.6	3/4 x 2 5/8
3600	350JJ362U016C	0.041	0.019	0.020	5.9	1 x 1 5/8
3800	350HL382U016C	0.034	0.016	0.018	7.1	7/8 x 2 1/8
4900	350HP492U016C	0.028	0.013	0.016	8.4	7/8 x 2 5/8
5200	350JL522U016C	0.029	0.014	0.016	7.7	1 x 2 1/8
6800	350JP682U016C	0.024	0.012	0.015	9.2	1 x 2 5/8
<b>20 Vdc (25 Vdc Surge)</b>						
800	350GE801U020C	0.125	0.048	0.042	3.0	3/4 x 1 1/8
1200	350HE122U020C	0.089	0.038	0.035	3.5	7/8 x 1 1/8
1500	350GJ152U020C	0.070	0.028	0.026	4.2	3/4 x 1 5/8
1700	350JE172U020C	0.075	0.033	0.031	3.7	1 x 1 1/8

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## Ratings

Cap ( $\mu$ F)	Catalog Part Number	ESR Max $\Omega$		Imped. $\Omega$ +25 °C	Ripple A +85 °C	Nom Size (in) DxL
		+25 °C				
		120 Hz	20 kHz	100 kHz	20 kHz	
<b>20 Vdc (25 Vdc Surge)</b>						
2100	350GL212U020C	0.050	0.020	0.020	6.2	3/4 x 2 1/8
2200	350HJ222U020C	0.051	0.022	0.022	5.3	7/8 x 1 5/8
2800	350GP282U020C	0.040	0.017	0.017	7.5	3/4 x 2 5/8
3000	350JJ302U020C	0.043	0.020	0.020	5.8	1 x 1 5/8
3200	350HL322U020C	0.036	0.016	0.018	7.0	7/8 x 2 1/8
4200	350HP422U020C	0.029	0.014	0.016	8.3	7/8 x 2 5/8
4500	350JL452U020C	0.031	0.014	0.016	7.6	1 x 2 1/8
5900	350JP592U020C	0.025	0.012	0.015	9.1	1 x 2 5/8
<b>25 Vdc (30 Vdc Surge)</b>						
600	350GE601U025C	0.140	0.050	0.042	2.9	3/4 x 1 1/8
900	350HE901U025C	0.100	0.039	0.035	3.4	7/8 x 1 1/8
1100	350GJ112U025C	0.079	0.029	0.026	4.1	3/4 x 1 5/8
1300	350JE132U025C	0.082	0.034	0.031	3.6	1 x 1 1/8
1500	350GL152U025C	0.056	0.021	0.020	6.0	3/4 x 2 1/8
1600	350HJ162U025C	0.057	0.023	0.022	5.1	7/8 x 1 5/8
2000	350GP202U025C	0.044	0.017	0.017	7.3	3/4 x 2 5/8
2300	350HL232U025C	0.040	0.017	0.018	6.8	7/8 x 2 1/8
2300	350JJ232U025C	0.047	0.020	0.021	5.6	1 x 1 5/8
3100	350HP312U025C	0.032	0.014	0.016	8.2	7/8 x 2 5/8
3300	350JL332U025C	0.034	0.015	0.017	74.0	1 x 2 1/8
4300	350JP432U025C	0.027	0.013	0.016	8.9	1 x 2 5/8
<b>30 Vdc (40 Vdc Surge)</b>						
450	350GE451U030C	0.155	0.052	0.043	2.8	3/4 x 1 1/8
700	350HE701U030C	0.110	0.041	0.035	3.3	7/8 x 1 1/8
800	350GJ801U030C	0.088	0.030	0.026	4.0	3/4 x 1 5/8
950	350JE951U030C	0.089	0.036	0.032	3.4	1 x 1 1/8
1100	350GL112U030C	0.062	0.022	0.02	5.8	3/4 x 2 1/8
1200	350HJ122U030C	0.062	0.024	0.023	5.0	7/8 x 1 5/8
1500	350GP152U030C	0.048	0.018	0.017	7.1	3/4 x 2 5/8
1700	350JJ172U030C	0.050	0.021	0.021	5.5	1 x 1 5/8
1800	350HL182U030C	0.044	0.017	0.018	6.6	7/8 x 2 1/8
2300	350HP232U030C	0.035	0.015	0.016	8.0	7/8 x 2 5/8
2500	350JL252U030C	0.036	0.016	0.017	7.2	1 x 2 1/8
3200	350JP322U030C	0.029	0.013	0.016	8.6	1 x 2 5/8
<b>40 Vdc (50 Vdc Surge)</b>						
320	350GE321U040C	0.176	0.054	0.043	2.7	3/4 x 1 1/8
500	350HE501U040C	0.123	0.042	0.035	3.2	7/8 x 1 1/8
600	350GJ601U040C	0.100	0.031	0.026	3.9	3/4 x 1 5/8
700	350JE701U040C	0.099	0.037	0.032	3.4	1 x 1 1/8
850	350GL851U040C	0.070	0.023	0.02	5.7	3/4 x 2 1/8
900	350HJ901U040C	0.070	0.025	0.023	4.9	7/8 x 1 5/8
1100	350GP112U040C	0.055	0.018	0.017	6.9	3/4 x 2 5/8
1200	350JJ122U040C	0.056	0.022	0.021	5.4	1 x 1 5/8
1300	350HL132U040C	0.049	0.018	0.018	6.5	7/8 x 2 1/8
1700	350HP172U040C	0.039	0.015	0.016	7.9	7/8 x 2 5/8
1800	350JL182U040C	0.040	0.016	0.017	7.1	1 x 2 1/8
2300	350JP232U040C	0.032	0.013	0.016	8.5	1 x 2 5/8

Cap ( $\mu$ F)	Catalog Part Number	ESR Max $\Omega$		Imped. $\Omega$ +25 °C	Ripple A +85 °C	Nom Size (in) DxL
		+25 °C				
		120 Hz	20 kHz	100 kHz	20 kHz	
<b>50 Vdc (75 Vdc Surge)</b>						
250	350GE251U050C	0.195	0.057	0.043	2.6	3/4 x 1 1/8
370	350HE371U050C	0.135	0.044	0.036	3.1	7/8 x 1 1/8
450	350GJ451U050C	0.110	0.033	0.026	3.8	3/4 x 1 5/8
500	350JE501U050C	0.105	0.038	0.033	3.3	1 x 1 1/8
650	350GL651U050C	0.077	0.024	0.020	5.5	3/4 x 2 1/8
680	350HJ681U050C	0.076	0.026	0.023	4.7	7/8 x 1 5/8
800	350GP801U050C	0.060	0.019	0.018	6.7	3/4 x 2 5/8
900	350JJ901U050C	0.060	0.022	0.022	5.2	1 x 1 5/8
1000	350HL102U050C	0.054	0.019	0.019	6.3	7/8 x 2 1/8
1300	350HP132U050C	0.043	0.016	0.017	7.7	7/8 x 2 5/8
1300	350JL132U050C	0.043	0.017	0.018	7.0	1 x 2 1/8
1800	350JP182U050C	0.034	0.014	0.016	8.4	1 x 2 5/8
<b>60 Vdc (85 Vdc Surge)</b>						
220	350GE221U060C	0.210	0.060	0.044	2.5	3/4 x 1 1/8
330	350HE331U060C	0.145	0.045	0.036	3.0	7/8 x 1 1/8
350	350GJ351U060C	0.120	0.034	0.027	3.7	3/4 x 1 5/8
460	350JE461U060C	0.114	0.039	0.034	3.2	1 x 1 1/8
500	350GL501U060C	0.082	0.024	0.020	5.4	3/4 x 2 1/8
560	350HJ561U060C	0.082	0.027	0.023	4.6	7/8 x 1 5/8
<b>75 Vdc (95 Vdc Surge)</b>						
150	350GE151U075C	0.640	0.240	0.240	1.7	3/4 x 1 1/8
230	350HE231U075C	0.400	0.145	0.145	2.2	7/8 x 1 1/8
250	350GJ251U075C	0.320	0.135	0.135	2.6	3/4 x 1 5/8
320	350JE321U075C	0.280	0.110	0.110	2.5	1 x 1 1/8
340	350GL341U075C	0.215	0.100	0.100	3.9	3/4 x 2 1/8
390	350HJ391U075C	0.210	0.090	0.090	3.5	7/8 x 1 5/8
460	350GP461U075C	0.160	0.074	0.074	5.0	3/4 x 2 5/8
530	350HL531U075C	0.140	0.067	0.067	5.0	7/8 x 2 1/8
540	350JJ541U075C	0.155	0.068	0.068	4.0	1 x 1 5/8
710	350HP711U075C	0.106	0.050	0.050	6.4	7/8 x 2 5/8
740	350JL741U075C	0.105	0.051	0.051	5.6	1 x 2 1/8
1000	350JP101U075C	0.078	0.038	0.038	7.0	1 x 2 5/8
<b>100 Vdc (125 Vdc Surge)</b>						
90	350GE090U100C	0.800	0.240	0.240	1.7	3/4 x 1 1/8
140	350HE141U100C	0.500	0.160	0.160	2.2	7/8 x 1 1/8
160	350GJ161U100C	0.440	0.142	0.142	2.3	3/4 x 1 5/8
200	350JE201U100C	0.400	0.130	0.130	2.4	1 x 1 1/8
210	350GL211U100C	0.295	0.105	0.105	3.5	3/4 x 2 1/8
240	350HJ241U100C	0.290	0.095	0.095	3.2	7/8 x 1 5/8
290	350GP291U100C	0.220	0.078	0.078	4.6	3/4 x 2 5/8
330	350HL331U100C	0.195	0.071	0.071	4.5	7/8 x 2 1/8
340	350JJ341U100C	0.210	0.071	0.071	3.7	1 x 1 5/8
450	350HP451U100C	0.145	0.053	0.053	5.8	7/8 x 2 5/8
460	350JL461U100C	0.140	0.053	0.040	6.7	1 x 2 1/8
620	350JP621U100C	0.105	0.040	0.040	6.7	1 x 2 5/8