



Snap-in Terminal Type, Wide Temperature Range

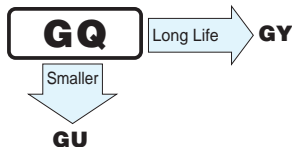
Series



RCJ Approved Anti-Solvent Feature (Through 100V only)

Approved by Reliability Center for Electronic Component. Japan-Certification No.RCJ-03-24D

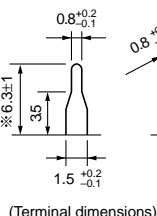
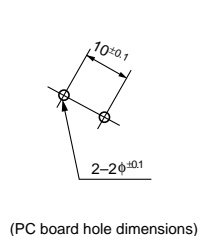
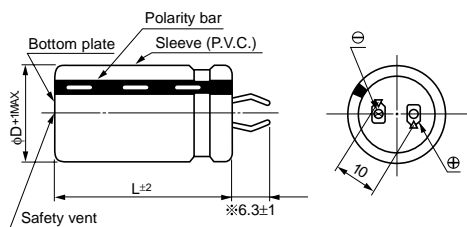
- Standard snap-in terminal series.
- Extended capacitance ranges based on the numerical values in E12 series under JIS.



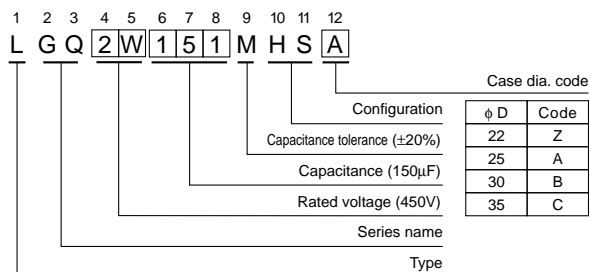
Specifications

Item	Performance Characteristics																													
Operating Temperature Range	—40 ~ +105°C (16 ~ 250V), —25 ~ +105°C (315 ~ 450V)																													
Voltage Range	16 ~ 450V																													
Capacitance Range	56 ~ 47000μF																													
Capacitance Tolerance	±20% at 120Hz, 20°C																													
Leakage Current	$I \leq 3\sqrt{CV}$ (μA)(After 5 minutes' application of rated voltage)[C : Capacitance(μF), V : Voltage(V)]																													
tan δ	Measurement frequency : 120Hz, Temperature : 20°C																													
	<table border="1"> <thead> <tr> <th>Rated voltage(V)</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> <th>160</th> <th>180</th> <th>200</th> <th>250</th> <th>315</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>tan δ (MAX.)</td> <td>0.50</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.25</td> <td>0.25</td> <td>0.25</td> </tr> </tbody> </table>	Rated voltage(V)	16	25	35	50	63	80	100	160	180	200	250	315	400	450	tan δ (MAX.)	0.50	0.40	0.35	0.30	0.25	0.20	0.20	0.15	0.15	0.15	0.15	0.25	0.25
Rated voltage(V)	16	25	35	50	63	80	100	160	180	200	250	315	400	450																
tan δ (MAX.)	0.50	0.40	0.35	0.30	0.25	0.20	0.20	0.15	0.15	0.15	0.15	0.25	0.25	0.25																
Stability at Low Temperature	Measurement frequency : 120Hz																													
	<table border="1"> <thead> <tr> <th>Rated voltage(V)</th> <th>16 ~ 100</th> <th>160 ~ 250</th> <th>315 ~ 450</th> </tr> </thead> <tbody> <tr> <td>Impedance ratio</td> <td>Z—25°C/Z + 20°C</td> <td>4</td> <td>3</td> <td>8</td> </tr> <tr> <td>ZT/Z20(MAX.)</td> <td>Z—40°C/Z + 20°C</td> <td>15</td> <td>12</td> <td>—</td> </tr> </tbody> </table>	Rated voltage(V)	16 ~ 100	160 ~ 250	315 ~ 450	Impedance ratio	Z—25°C/Z + 20°C	4	3	8	ZT/Z20(MAX.)	Z—40°C/Z + 20°C	15	12	—															
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Impedance ratio	Z—25°C/Z + 20°C	4	3	8																										
ZT/Z20(MAX.)	Z—40°C/Z + 20°C	15	12	—																										
Load Life	After an application of DC voltage (in the range of rated DC voltage even after over-lapping the specified ripple current) for 2000 hours at 105°C, capacitors shall meet the characteristics requirements indicated at right.																													
	<table border="1"> <tbody> <tr> <td>Capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>tan δ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </tbody> </table>	Capacitance change	Within ±20% of initial value	tan δ	200% or less of initial specified value	Leakage current	Initial specified value or less																							
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Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours they meet the requirements listed at right.																													
	<table border="1"> <tbody> <tr> <td>Capacitance change</td> <td>Within ±15% of initial value</td> </tr> <tr> <td>tan δ</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </tbody> </table>	Capacitance change	Within ±15% of initial value	tan δ	150% or less of initial specified value	Leakage current	Initial specified value or less																							
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Leakage current	Initial specified value or less																													
Marking	Printed with white color letter on dark brown sleeve.																													
Applicable Standards	JIS C 5141 and JIS C 5102.																													

Drawing



Type numbering system (Example : 450V 150μF)



* Shorter terminal(4.0±0.5) is also available upon request. Please refer page 163(GU series)for schematic of dimensions.

Frequency coefficient of allowable ripple current

Frequency(Hz)	50	60	120	1 k	10k ~	
Coeff.	16 ~ 100V	0.88	0.90	1.00	1.15	1.15
	160 ~ 250V	0.85	0.88	1.00	1.15	1.20
	315 ~ 450V	0.88	0.90	1.00	1.10	1.15

Minimum order quantity : 50pcs.

Dimension table in next page.



■Dimensions

D×L(mm)

Cap.(μF)	V(Code) Code	φD	16V(1C)				25V(1E)				35V(1V)				50V(1H)					
			22	25	30	35	22	25	30	35	22	25	30	35	22	25	30	35		
1800	182																22×25			
																	1.31			
2700	272																22×30	25×25		
																	1.70	1.70		
3300	332											22×25					22×35	25×30		
												1.43					1.98	2.00		
3900	392											22×30					22×40	25×35	30×25	
												1.65					2.25	2.28	2.22	
4700	472											22×25	25×25				22×45	25×40	30×30	
												1.55					2.56	2.61	2.58	
5600	562											22×30	25×30	30×25			22×50	25×40	30×35	
												1.76					2.89	2.81	2.95	
6800	682											22×30	25×25					25×50	30×40	35×30
												1.60						3.37	3.39	3.31
8200	822											22×30	25×30	30×25					30×45	35×35
												1.85							3.71	3.66
10000	103											22×30	25×25						30×50	35×40
												1.99	1.99						4.09	4.07
12000	123											22×35	25×30	30×25						35×45
												2.28	2.30	2.38						4.50
15000	153											22×40	25×35							
												2.64	2.68							
18000	183											22×45	25×40	30×30						
												2.98	3.04	3.00						
22000	223												25×45	30×35						
													3.40	3.39						
27000	273												25×50	30×40	35×30					
													3.81	3.83	3.74					
33000	333													30×45	35×35					
														4.30	4.24					
39000	393													30×50	35×40					
														4.74	4.72					
47000	473													35×45						
														5.27						

Cap.(μF)	V(Code) Code	φD	63V(1J)				80V(1K)				100V(2A)									
			22	25	30	35	22	25	30	35	22	25	30	35						
560	561												22×25							
													1.07							
820	821												22×30	25×25						
													1.11							
1000	102												22×30	25×25						
													1.29	1.29						
1200	122												22×30	25×25						
													1.25							
1500	152												22×30	25×25						
													1.44	1.44						
1800	182												22×30	25×25						
													1.52	1.52						
2200	222												22×35	25×30						
													1.73	1.75						
2700	272												22×40	25×35	30×25					
													1.97	1.99	1.93					
3300	332												22×50	25×40	30×30					
													2.32	2.27	2.24					
3900	392													25×45	30×35					
														2.54	2.55					
4700	472													25×50	30×40	35×30				
														2.88	2.90	2.83				
5600	562														30×45	35×35				
															3.28	3.24				
6800	682														30×50	35×40				
															3.73	3.71				
8200	822															35×45				
																4.16				
10000	103															35×50				
																4.69				

Case size
Allowable ripple

Allowable Ripple (A rms) at 105°C 120Hz



■ Dimensions

D×L(mm)

Cap.(μF)	V(Code) Code	φD	160V(2C)				180V(2Z)				200V(2D)				250V(2E)			
			22	25	30	35	22	25	30	35	22	25	30	35	22	25	30	35
150	151																	22×25 0.65
180	181																	22×25 0.75
220	221																	22×30 0.85
270	271		22×25 0.90				22×25 0.90					22×25 0.90						22×35 1.00
330	331		22×25 1.00				22×30 1.05					22×30 1.05	25×25 1.05					22×40 1.10
390	391		22×30 1.15				22×30 1.20	25×25 1.20				22×35 1.25	25×30 1.25					22×45 1.25
470	471		22×35 1.30	25×25 1.30			22×35 1.30	25×30 1.30				22×40 1.35	25×30 1.35	30×25 1.35				22×50 1.30
560	561		22×40 1.45	25×30 1.45			22×40 1.40	25×35 1.40	30×25 1.40			22×45 1.50	25×35 1.50	30×30 1.50				25×50 1.55
680	681		22×45 1.65	25×35 1.65	30×25 1.65		22×45 1.65	25×40 1.65	30×30 1.65			22×50 1.70	25×45 1.70	30×30 1.70	35×25 1.70			30×45 1.80
820	821		22×50 1.80	25×40 1.80	30×30 1.80	35×25 1.80	22×50 1.85	25×45 1.85	30×35 1.85	35×25 1.85			25×50 1.90	30×35 1.90	35×30 1.90			35×40 1.95
1000	102			25×45 2.00	30×35 2.00	35×30 2.00		25×50 2.05	30×40 2.05	35×30 2.05				30×45 2.15	35×35 2.15			35×45 2.30
1200	122			25×50 2.30	30×40 2.30	35×30 2.30			30×45 2.30	35×35 2.30				30×50 2.30	35×35 2.30			35×50 2.65
1500	152				30×45 2.65	35×35 2.65			30×50 2.70	35×40 2.70					35×45 2.75			
1800	182				30×50 3.05	35×45 3.05				35×45 3.15					35×50 3.25			
2200	222					35×50 3.50				35×50 3.60								

Cap.(μF)	V(Code) Code	φD	315V(2F)				400V(2G)				450V(2W)							
			22	25	30	35	22	25	30	35	22	25	30	35				
56	560													22×25 0.41				
68	680						22×25 0.40						22×30 0.48	25×25 0.48				
82	820		22×25 0.46				22×30 0.50	25×25 0.50					22×35 0.56					
100	101		22×30 0.55				22×35 0.55	25×30 0.55					22×40 0.64	25×30 0.61	30×25 0.63			
120	121		22×30 0.60	25×25 0.60			22×40 0.60	25×30 0.60	30×25 0.60				22×45 0.72	25×35 0.71				
150	151		22×35 0.70	25×30 0.70	30×25 0.70		22×45 0.70	25×35 0.70	30×30 0.70				22×50 0.83	25×40 0.81	30×30 0.80	35×25 0.82		
180	181		22×40 0.83	25×30 0.78	30×25 0.82		22×50 0.85	25×40 0.85	30×30 0.85	35×25 0.85				25×45 0.92	30×35 0.91			
220	221		22×45 0.90	25×35 0.90	30×30 0.90			25×45 0.90	30×35 0.90	35×30 0.90				25×50 1.05	30×40 1.05	35×30 1.03		
270	271		22×50 1.00	25×40 1.00	30×35 1.00	35×25 1.00		25×50 1.00	30×40 1.00	35×30 1.00					30×45 1.21	35×35 1.19		
330	331			25×50 1.25	30×35 1.25	35×30 1.25			30×45 1.25	35×35 1.25					30×50 1.38	35×40 1.38		
390	391				30×40 1.35	35×35 1.35			30×50 1.35	35×40 1.35								35×45 1.55
470	471				30×50 1.45	35×40 1.45				35×45 1.45								35×50 1.74
560	561					35×45 1.65				35×50 1.65								
680	681					35×50 1.90												

Allowable Ripple (A rms) at 105°C 120Hz