

TS18Q

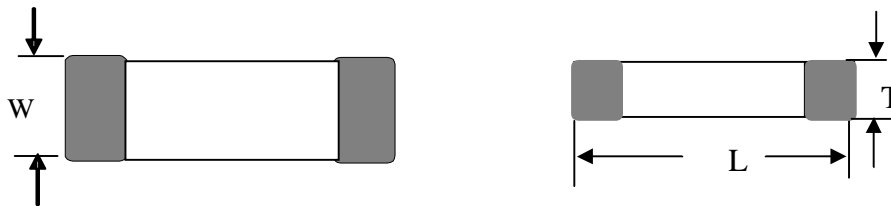
FEATURES

- Serialized in size, suitable for surface-mounted elements in hybrid integrated circuits and printed circuits
- High Q value, low ESR, high reliability
- Low loss, high capacitance stability, working frequency up to 3GHz
- Applicable for HF circuits, VHF-microwave circuits, RF circuits and amplifier circuits in various devices

P E R F O R M A N C E	
TEMPERATURE COEFFICIENT	COG: $0 \pm 30 \text{ppm}/^\circ\text{C}$
CAPACITANCE DRIFT	No more than $\pm 0.2\%$ or $\pm 0.05 \text{pF}$, whichever is larger
QUALITY FACTOR (Q VALUE)	Over 2000 at 1MHz/1KHz
INSULATION RESISTANCE	At 20°C C: $\geq 10000 \text{M}\Omega$
WORKING TEMPERATURE	$-55^\circ\text{C} \sim 125^\circ\text{C}$



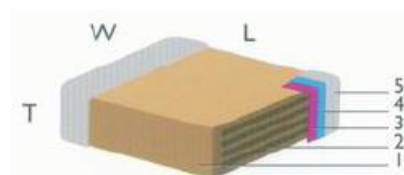
◆ OUTSIDE DIMENSION



Model		Size (mm)		
Imperial	Metric	L	W	T max
0603	1608	1.52 ± 0.25	0.76 ± 0.25	1.01
0805	2012	2.00 ± 0.25	1.25 ± 0.25	1.45
0505	1212	$1.40^{+0.38}_{-0.25}$	1.40 ± 0.38	1.45
1111	2828	$2.79^{+0.51}_{-0.25}$	2.79 ± 0.38	2.59
2525	6363	$5.84^{+0.51}_{-0.25}$	6.35 ± 0.38	3.68
3838	9696	$9.65^{+0.38}_{-0.25}$	8.89 ± 0.25	4.50

Note: Products can be customized according to special requirements.

SN	Name
1	Ceramic dielectric
2	Inner electrode
3	Outer electrode
4	Nickel layer
5	Tin layer



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Capacitance Range

TS18Q 0603 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0.1	±0.10pF, ±0.25pF	250	1.7	±0.10pF, ±0.25pF, ±0.50pF	250	6.2	±0.10pF, ±0.25pF, ±0.50pF	250	30	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	250
0.2			1.8			6.8			33		
0.3	1.9		7.5			36					
0.4	2.0		8.2			39					
0.5	2.1		9.1			43					
0.6	2.2		10			47					
0.7	2.4		11			51					
0.8	2.7		12			56					
0.9	3.0		13			62					
1.0	3.3		15			68					
1.1	3.6		16			75					
1.2	3.9		18			82					
1.3	4.3		20			91					
1.4	4.7		22			100					
1.5	5.1		24			120					
1.6	5.6		27								

TS18Q 0805 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0.2	±0.10pF, ±0.25pF	250	1.9	±0.10pF, ±0.25pF, ±0.50pF	250	9.1	±0.10pF, ±0.25pF	250	51	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	250
0.3			2.0			10			56		
0.4	2.1		11			62					
0.5	2.2		12			68					
0.6	2.4		13			75					
0.7	2.7		15			82					
0.8	3.0		16			91					
0.9	3.3		18			100					
1.0	3.6		20			110					
1.1	3.9		22			120					
1.2	4.3		24			130					
1.3	4.7		27			150					
1.4	5.1		30			160					
1.5	5.6		33			180					
1.6	6.2		36			200					
1.7	6.8		39			220					
1.8	7.5		43			240					
	8.2		47								

TS18Q 0505 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0.2	±0.10pF, ±0.25pF	250	1.9	±0.10pF, ±0.25pF, ±0.50pF	250	9.1	±0.10pF, ±0.25pF	250	51	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	250
0.3			2.0			10			56		
0.4	2.1		11			62					
0.5	2.2		12			68					
0.6	2.4		13			75					
0.7	2.7		15			82					
0.8	3.0		16			91					
0.9	3.3		18			100					
1.0	3.6		20			110					
1.1	3.9		22			120					
1.2	4.3		24			130					
1.3	4.7		27			150					
1.4	5.1		30			160					
1.5	5.6		33			180					
1.6	6.2		36			200					
1.7	6.8		39			220					
1.8	7.5		43								
	8.2		47								

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Capacitance Range

TS18Q 1111 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0.2	±0.10pF, ±0.25pF	1500	2.4	±0.10pF, ±0.25pF, ±0.50pF	1500	20	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	1500	150	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	500
0.3			2.7			22			160		
0.4			3.0			24			180		
0.5			3.3			27			200		
0.6			3.6			30			220		
0.7			3.9			33			240		
0.8	4.3		36	270		±1.0%, ±2.0%, ±5.0%, ±10%, ±20%			250		
0.9	4.7		39	300							
1.0	5.1		43	330							
1.1	5.6		47	360							
1.2	6.2		51	390							
1.3	6.8		56	430							
1.4	7.5		62	470		1000			±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	150	
1.5	8.2		68	510							
1.6	9.1		75	560							
1.7	10		82	620		500			±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	100	
1.8	11		91	680							
1.9	12		100	750							
2.0	13	110	820								
2.1	15	120	910								
2.2	16	130	1000								
	18										

TS18Q 2525 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
1.0	±0.10pF, ±0.25pF	3600	5.1	±0.10pF, ±0.25pF, ±0.50pF	3600	36	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	3600	240	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	2000
1.1			5.6			39			270		
1.2			6.2			43			300		
1.3			6.8			47			330		
1.4			7.5			51			360		
1.5			8.2			56			390		
1.6	9.1		62	430		±1.0%, ±2.0%, ±5.0%, ±10%, ±20%			1000		
1.7	10		68	470							
1.8	11		75	510							
1.9	12		82	560							
2.0	13		91	620							
2.1	15		100	680							
2.2	16		110	750		2000			±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	500	
2.4	18		120	820							
2.7	20		130	910							
3.0	22		150	1000							
3.3	24		160	1100							
3.6	27		180	1200							
3.9	30	200	1500								
4.3											
4.7			33			220			1800		

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Capacitance Range

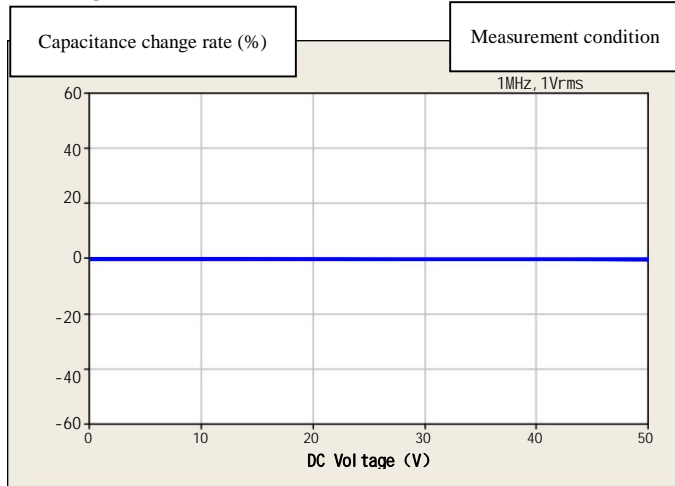
TS18Q 3838 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
1.0	±0.10pF, ±0.25pF	7200	8.2	±0.10pF,	7200	91	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	3600	1100	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	1000
1.1			9.1	±0.25pF, ±0.50pF		100			1200		
1.2			10	110		1500					
1.3			11	120		1800					
1.4	±0.10pF, ±0.25pF, ±0.50pF		12	130		2000			250		
1.5			13	150		2200					
1.6			15	160		2400					
1.7			16	180		2700					
1.8			18	200		3000					
1.9			20	220		3300					
2.0			22	240		3600					
2.1			24	270		3900					
2.2		27	300	4300							
2.4		30	330	4700							
2.7	33	360	5100	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	1500						
3.0	36	390	5600								
3.3	39	430	6200								
3.6	43	470	6800								
3.9	47	510									
4.3	51	560									
4.7	56	620									
5.1	62	680									
5.6	68	750									
6.2	75	820									
6.8	82	910									
7.5		1000									

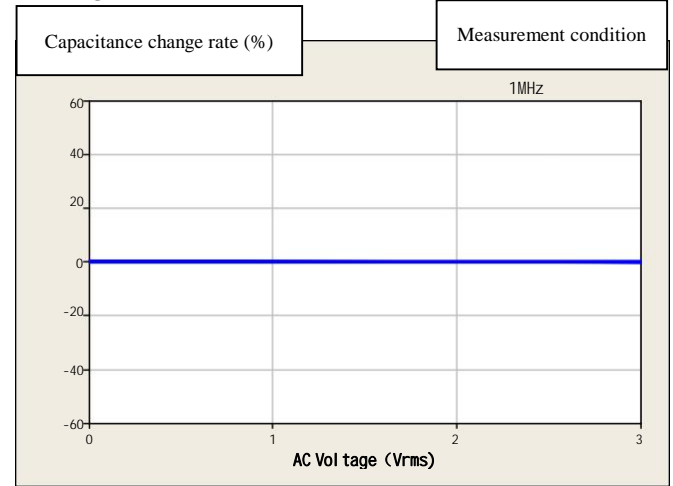
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Characteristic Curve

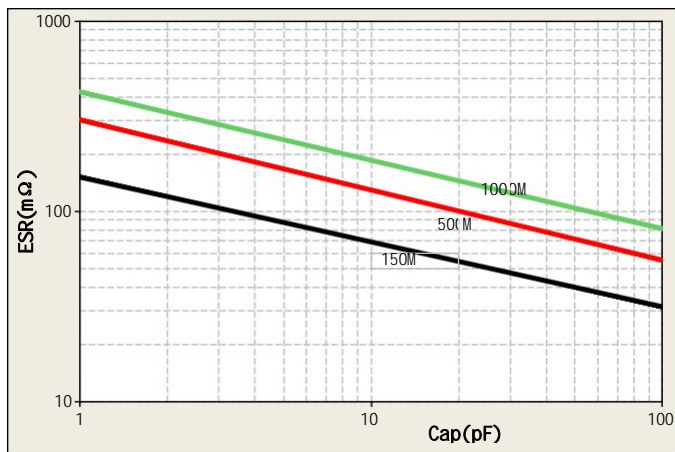
DC Voltage Characteristic



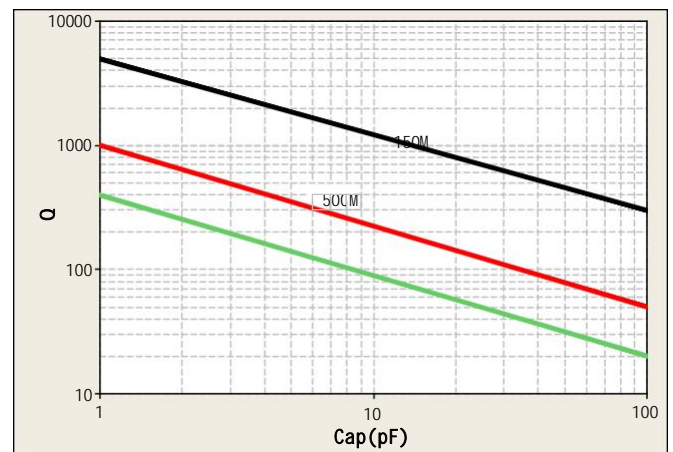
AC voltage characteristic



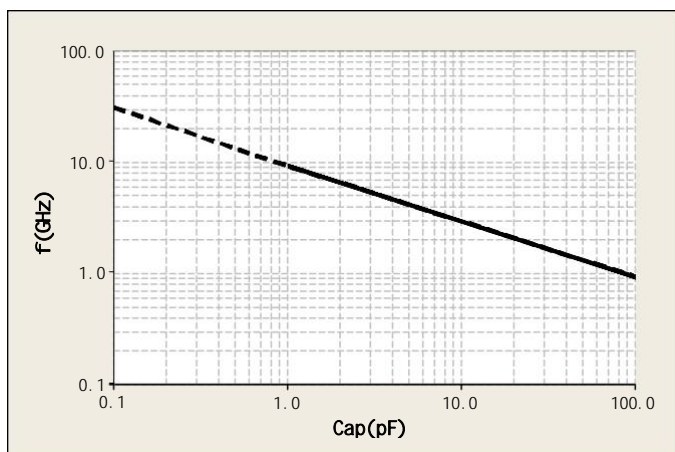
Relation between ESR and capacitance value



Relation between Q value and capacitance value



Relation between series resonance and capacitance



Note: Specifications are subject to change without notice. For more detail and update, please visit our website.