

# KNSCHA

Empowering The World

## 广东科尼盛电子科技有限公司

### KNSCHA ELECTRONICS CO., LIMITED

IATF16949:2016

ISO9001:2015

ISO14001:2015

## 部品规格书 APPROVE SHEET

客户名称 Customer Name	
产品名称 Product Name	高分子固态电解电容器 Conductive Polymer Aluminum Electrolytic Capacitors
客户料号 Customer P/N	
科尼盛料号 KNSCHA P/N	217EC0007
型号规格 Product Type	16V/220 $\mu$ F 2000Hours@105 $^{\circ}$ C 引线型,5x9mm KHS Series
日期 Date	2024年10月25日

制造 Manufacture	
核准 APPROVAL	制作 PREPARED
王	刘

客户承认栏 CUSTOMER APPROVED		
核准 APPROVED	确认 CHECKED	经办 DESIGNED

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# KNSCHA

Empowering The World

## KNSCHA ELECTRONICS CO., LIMITED

IATF16949:2016 ISO9001:2015 ISO14001:2015

### Aluminum Electrolytic Capacitors

- Source Manufacturer
- 25+ Years Experience
- 7X24 Hours Online Service



### Film Capacitors

- Source Manufacturer
- 10+ Years Experience



KNSCHA ELECTRONICS CO., LIMITED is a manufacturing high-tech enterprise founded in 1987 with aluminum electrolytic capacitors and film capacitors as its core for automotive, renewable energy, industrial and consumer electronics. We are working on developing aluminum electrolytic capacitors and plastic film capacitors having higher performance and higher reliability and its product chain extends to multiple categories such as electric double layer capacitors, ceramic capacitors and resistors under the trademark "KNSCHA", quickly responding to customer needs.

KNSCHA's manufacturing facilities are located in Guangdong, Hunan and Jiangxi and employ over 380 peoples. Our state-of-art manufacturing facilities including R&D, testing labs, automated manufacturing, warehousing and customer service are operate with high quality standard, using Lean manufacturing processes with a comprehensive ISO 9001/14001 and IATF 16949 management systems.

Our products have obtained UL, VDE, TÜV, ENEC10, KTL, and CQC safety certification, and comply with SGS's RoHS, Reach, AECQ-200 and National Grid Testing standards.

As a supporter of this advanced electronic industry, we are very pleased to have contributed to its development.

## Plastic Film Capacitors Aluminum Electrolytic Capacitors

WHO WE ARE



**KNSCHA has knowledge and know-how as a capacitor professional manufacturer.  
We are always comitted to the original performance our customers need.  
We solves problems together with our customers.**

# KNSCHA

Empowering The World



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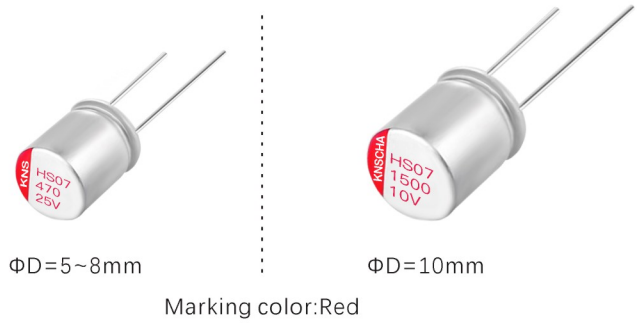
## KNSCHA ELECTRONICS CO., LIMITED

IATF16949:2016 ISO9001:2015 ISO14001:2015



### 特性/ Features

- Load Life: 2000 hours at 105°C
- Ultra low ESR with large permissible ripple current
- RoHS Compliant
- 105°C 负荷寿命2000小时
- 极低等效串联电阻(ESR)并可承受大纹波电流
- 符合RoHS指令



引线型Radial

表1 规格表 Specifications

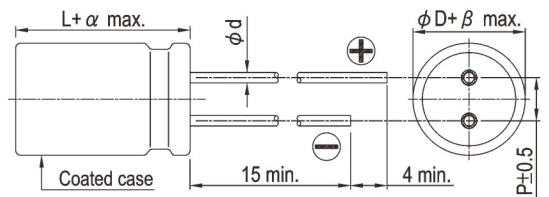
项目 Items	性能 Performance									
工作温度范围 Operating Temperature Range	-55°C ~ +105°C									
额定静电容量容许误差值 Capacitance Tolerance	± 20% (120 Hz, 20°C)									
漏电流 Leakage Current(at 20°C)	测试时间 Time	2 分钟后 after 2 minutes	漏电流 Leakage Current	$I \leq 0.2CV$ or $300(\mu A)$ (微安) 之中任一较大值以下 which ever is greater						
损失角正切值 Tanδ (at 120 Hz, 20°C)	参阅标准品一览表									
等效串联电阻 ESR (mΩ/at 100k Hz, 20°C max.)	参阅标准品一览表									
耐久性 Endurance	在 105°C 环境中, 连续加载额定电压 20,00 小时后、待温度恢复到 20°C 进行测量时, 应满足以下要求。									
	外观	无明显变化								
	静电容量变化率	≤ 初始值的 ± 20%								
	损失角正切值	≤ 初始规格值的 150%								
	等效串联电阻(ESR)	≤ 初始规格值的 150%								
	漏电流	≤ 初始规格值								
耐湿性 Moisture Resistance Stored at 60°C, RH90~95% 2000H 存放在 60°C, RH90~95% 2000h	在 60°C 90 ~ 95%RH 环境中, 连续加载额定电压 1,000 小时后, 待温度恢复到 20°C 进行测量时, 应满足以下要求。									
	外观	无明显变化								
	静电容量变化率	≤ 初始值的 ± 20%								
	损失角正切值	≤ 初始规格值								
	等效串联电阻(ESR)	≤ 初始规格值的 150%								
	漏电流	≤ 初始规格值								
浪涌电压特性	在 105°C 环境中, 按照充电 30 秒、放电 5 分 30 秒连续加载浪涌电压 1,000 次( $R_c = 1k\Omega$ ) 后, 待温度恢复到 20°C 进行测量时, 应满足以下要求。									
	额定电压 (RV)	2.5	4	6.3	7.5	10	12	16	20	25
	浪涌电压 (SV)	2.9	4.6	7.2	8.6	11.5	13.8	18.4	23	28.8
	外观	无明显变化								
	静电容量变化率	≤ 初始值的 ± 20%								
	漏电流	≤ 初始规格值								

表2 纹波电流的频率系数  
Frequency Coefficient For Ripple Current

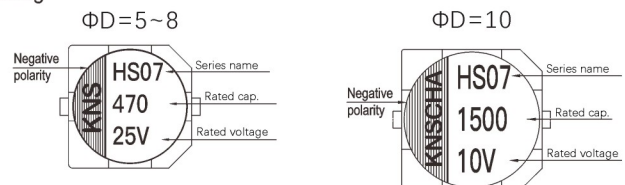
Frequency	120Hz ≤ freq. < 1KHz	1KHz ≤ freq. < 10KHz	10KHz ≤ freq. < 100KHz	100KHz ≤ freq. < 300KHz
Coefficient	0.05	0.3	0.7	1

表3 外形尺寸 Dimensions(mm)

Lead Spacing and Diameter						Unit: mm
ΦD	5.0	5.5	6.3	8.0	10.0	
P	2.0	2.5	2.5	3.5	5.0	
Φd	0.5	0.5	0.5	0.6	0.6	
β						0.5
α						1.0



Marking



■表4 标准品一览表 Standard Size

Dimension:  $\phi$  D $\times$ L(mm)  
Ripple Current: mA/rms at 100k Hz, 105°C

Standard Ratings

Rated Volt. (V)	Capacitance ( $\mu$ F)	Size $\phi$ D $\times$ L(mm)	$\tan\delta$ (120Hz, 20°C)	L C ( $\mu$ A)	ESR (m $\Omega$ /at 100k Hz,20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)
2.5V	470	6.3X7	0.08	300	18	2690
	560	6.3X7	0.08	300	18	2690
		6.3X8	0.08	300	16	4100
	680	6.3X8	0.08	340	16	4100
		6.3X9	0.08	340	14	4500
	820	6.3X8	0.08	410	16	4100
		6.3X9	0.08	410	14	4500
	1000	6.3X9	0.08	500	14	4500
		8X8	0.08	500	14	4500
	1500	8X8	0.08	750	14	4500
		8X11.5	0.08	750	14	4750
	2200	8X11.5	0.08	1100	14	4900
		10X12	0.08	1100	14	4900
	3300	10X12	0.08	1650	14	4900
4700	10X13.5	0.08	2350	14	4900	
5600	10X16	0.08	2800	14	4900	
6800	10X16	0.08	3400	14	4900	
4V	220	5X7	0.08	300	18	2350
	270	5X7	0.08	300	18	2690
		5X8	0.08	300	18	2750
	330	5X7	0.08	300	18	2690
		5X8	0.08	300	16	2750
	390	5X8	0.08	312	16	2750
	470	5X8	0.08	376	16	2750
	560	6.3X7	0.08	448	16	3200
	680	6.3X7	0.08	544	16	3350
	820	6.3X8	0.08	656	16	3600
		6.3X9	0.08	656	16	3950
	1000	6.3X9	0.10	800	14	4100
		8X8	0.10	800	14	4350
	1500	8X11.5	0.10	1200	14	4500
	2200	8X16	0.10	1760	14	4900
		10X12	0.10	1760	14	4900
3300	8X16	0.10	2640	14	4900	
	10X12	0.10	2640	14	4900	
4700	10X13.5	0.10	3760	14	4900	
5600	10X16	0.10	4480	14	4900	

制品尺寸与容许纹波电流一览表

尺寸: 直径( $\phi$ D) $\times$ 长度(L), (毫米/mm)  
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

Dimension and Permissible Ripple Current

Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 120 Hz, 105°C

Rated Volt. (V)	Capacitance ( $\mu F$ )	Size $\phi D \times L$ (mm)	$\tan \delta$ (120Hz, 20°C)	L C ( $\mu A$ )	ESR (m $\Omega$ /at 100k Hz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)
6.3V	180	5X7	0.08	300	21	1800
	220	5X7	0.08	300	18	2690
		6.3*5.5	0.08	300	25	2690
	270	5X7	0.08	340	21	2690
		6.3*5.5	0.08	340	22	2690
	330	5X8	0.08	416	16	2690
		6.3X5.5	0.08	416	22	2690
	390	5X9	0.08	491	16	2690
	470	5X9	0.08	592	16	2690
		6.3X7	0.08	592	16	4100
	500	5.5X7	0.08	630	16	3650
	560	5X11.5	0.08	706	16	3500
		5.5X9	0.08	706	16	4100
		6.3X7	0.08	706	16	3950
		6.3X8	0.08	706	16	4100
	680	5.5X9	0.08	857	14	4150
		6.3X8	0.08	857	16	4500
		8X8	0.08	857	14	4500
	820	5.5X11.5	0.10	1033	16	4250
		6.3X8	0.10	1033	16	4300
		6.3X9	0.10	1033	16	4500
		8X8	0.10	1033	14	4500
	1000	6.3X10.5	0.10	1260	14	4500
		6.3X11.5	0.10	1260	14	4650
		8X8	0.10	1260	14	4500
		8X11.5	0.10	1260	14	4700
	1500	6.3X11.5	0.10	1890	14	4650
		8X11.5	0.10	1890	14	4800
10X12		0.10	1890	14	4900	
1800	8X16	0.10	2268	14	4900	
2200	8X16	0.10	2772	14	4900	
	10X12	0.10	2772	14	4900	
3300	8X16	0.10	4158	14	5100	
	10X12	0.10	2640	14	5100	
4700	10X16	0.10	3760	14	5350	
5600	10X16	0.10	4480	14	5500	

制品尺寸与容许纹波电流一览表

尺寸: 直径( $\phi D$ ) $\times$ 长度(L), (毫米/mm)  
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

Dimension and Permissible Ripple Current

Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 120 Hz, 105°C

Rated Volt. (V)	Capacitance ( $\mu F$ )	Size $\phi D \times L$ (mm)	$\tan \delta$ (120Hz, 20°C)	L C ( $\mu A$ )	ESR (m $\Omega$ /at 100k Hz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)	
7.5V	220	6.3X 5.5	0.08	330	28	2690	
	330	5X11.5	0.08	495	18	3100	
	470	6.3X 7	0.08	705	16	3350	
	500	500	5X11.5	0.08	750	14	3500
			5.5X9	0.08	750	14	3500
			6.3X8	0.08	750	14	3650
	560	560	6.3X8	0.08	840	14	3800
			8X8	0.08	840	14	4100
	680	680	6.3X9	0.10	1020	14	4350
			8X8	0.10	1020	14	4350
	820	820	6.3X11.5	0.10	1230	14	4500
			8X8	0.10	1230	14	4500
	1000	1000	6.3X11.5	0.10	1500	14	4500
			8X11.5	0.10	1500	14	4650
	1200	1200	8X11.5	0.10	1800	14	4700
	1500	1500	6.3X15	0.10	2250	14	4750
8X11.5			0.10	2250	14	4900	
2200	2200	8X16	0.10	3300	14	5100	
		10X12	0.10	3300	14	5100	
3300	3300	10X1 3.5	0.10	4950	14	5250	
		10X 16	0.10	4950	14	5400	
4700	4700	10X16	0.10	7050	14	5500	
10V	100	5X7	0.08	300	28	2350	
		6.3X5.5	0.08	300	38	2250	
	220	220	5X8	0.08	440	16	2690
			6.3X7	0.08	440	16	2950
			6.3X8	0.08	440	16	3100
	330	330	6.3X8	0.08	660	16	3300
	470	470	5X11.5	0.08	940	16	3400
			6.3X8	0.08	940	14	3500
			8X8	0.08	940	14	3650
	560	560	6.3X9	0.08	1120	14	3700
			8X8	0.08	1120	14	4100
	680	680	6.3X11.5	0.10	1360	14	4200
			8X11.5	0.10	1360	14	4500
	820	820	6.3X11.5	0.10	1640	14	4650
			8X11.5	0.10	1640	14	4700
	1000	1000	8X11.5	0.10	2000	14	4850
1500	1500	10X12	0.10	3000	14	4900	
2200	2200	10X12	0.10	4400	10	5300	
3300	3300	10X16	0.10	6600	10	5650	

制品尺寸与容许纹波电流一览表

尺寸: 直径( $\phi D$ ) $\times$ 长度(L), (毫米/mm)  
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

Dimension and Permissible Ripple Current

Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 120 Hz, 105°C

Rated Volt. (V)	Capacitance ( $\mu F$ )	Size $\phi D \times L$ (mm)	$\tan \delta$ (120Hz, 20°C)	L C ( $\mu A$ )	ESR (m $\Omega$ /at 100k Hz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)
12V	330	5X9	0.10	792	18	2900
	330	5.5X9	0.10	792	16	3500
	470	6.3X8	0.10	1128	16	3650
	560	6.3X11.5	0.10	1344	14	3800
	680	6.3X11.5	0.10	1632	14	3900
	820	8X11.5	0.10	1968	14	4000
	1000	8X11.5	0.10	2400	14	4200
	1500	8X16	0.10	3600	12	4500
	2200	10X13.5	0.10	5280	12	4900
	3300	10X16	0.10	7920	12	5400
16V	22	5X7	0.12	300	45	1650
	47	5X7	0.12	300	38	1950
	100	5X7	0.12	320	25	2250
		6.3X5.5	0.12	320	38	1950
		6.3X7	0.12	320	22	2350
	180	6.3X8	0.12	320	22	2600
		5X8	0.12	576	20	2690
	220	6.3X7	0.12	576	20	2800
		5X9	0.12	704	20	2850
	270	6.3X7	0.12	704	18	2900
		6.3X8	0.12	704	16	3000
		5X11.5	0.12	864	16	3100
	330	6.3X8	0.12	864	16	3200
		5X11.5	0.12	1056	16	3200
		5.5X11.5	0.12	1056	18	3100
		6.3X7	0.12	1056	18	3100
		6.3X9	0.12	1056	16	3300
		8X8	0.12	1056	14	3700
	470	8X11.5	0.12	1056	14	3900
		5.5X11.5	0.12	1504	16	3500
		6.3X9	0.12	1504	16	3500
		6.3X10.5	0.12	1504	16	3500
		6.3X11.5	0.12	1504	14	3650
		8X8	0.12	1504	14	3800
		8X11.5	0.12	1504	14	4100
	560	10X12	0.12	1504	14	4500
		5.5X11.5	0.12	1792	16	3600
		6.3X11.5	0.12	1792	14	3800
		8X8	0.12	1792	14	3950
		8X11.5	0.12	1792	14	4200
680	10X12	0.12	1792	10	4600	
	6.3X11.5	0.12	2176	16	4150	
	6.3X15	0.12	2176	14	4500	
		8X11.5	0.12	2176	12	4500

制品尺寸与容许纹波电流一览表

尺寸: 直径( $\phi D$ ) $\times$ 长度(L), (毫米/mm)  
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

Dimension and Permissible Ripple Current

Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 120 Hz, 105°C

Rated Volt. (V)	Capacitance ( $\mu F$ )	Size $\phi D \times L$ (mm)	$\tan \delta$ (120Hz, 20°C)	L C ( $\mu A$ )	ESR (m $\Omega$ /at 100k Hz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)
16V	680	10X12	0.12	2176	12	4900
	820	6.3X11.5	0.12	2624	14	4500
		6.3X 15	0.12	2624	14	4700
		8X11.5	0.12	2624	12	4750
		10X12	0.12	2624	12	4900
		10X12	0.12	2624	12	4900
	1000	8X11.5	0.12	3200	14	4800
		8X13.5	0.12	3200	14	4900
		8X16	0.12	3200	12	5100
		10X12	0.12	3200	12	5100
	1200	8X16	0.12	3840	12	5250
		10X12	0.12	3840	12	5250
	1500	8X16	0.12	4800	12	5300
		10X12	0.12	4800	12	5300
10X16		0.12	4800	12	5500	
2200	10X16	0.12	7040	12	5800	
3300	10X 16	0.12	10560	18	6100	
20V	100	5X7	0.12	400	28	2450
	220	6.3X8	0.12	880	25	2800
	330	6.3X 9	0.12	1320	25	3100
	470	6.3X11.5	0.12	1880	25	3250
	560	6.3X15	0.12	2240	22	3500
		8X11.5	0.12	2240	20	3500
	680	6.3X15	0.12	2720	22	3650
		8X11.5	0.12	2720	20	3650
	820	8X13.5	0.12	3280	20	3900
		10X12	0.12	3280	20	3900
	1000	8X 16	0.12	4000	20	4200
		10X12	0.12	4000	20	4200
	1500	10X13.5	0.12	6000	20	4500
		10X16	0.12	6000	20	4700
2200	10X16	0.10	8800	20	4900	

制品尺寸与容许纹波电流一览表

尺寸: 直径( $\phi D$ ) $\times$ 长度(L), (毫米/mm)  
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

Dimension and Permissible Ripple Current

Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 120 Hz, 105°C

Rated Volt. (V)	Capacitance ( $\mu F$ )	Size $\phi D \times L$ (mm)	$\tan \delta$ (120Hz, 20°C)	L C ( $\mu A$ )	ESR (m $\Omega$ /at 100k Hz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)
25V	10	5X8	0.12	300	85	1950
	22	5X7	0.12	300	68	2000
	33	6.3X 5.5	0.12	300	58	2100
	47	5X8	0.12	300	45	2250
		6.3X5.5	0.12	300	48	2200
		6.3X7	0.12	300	45	2350
	56	5X8	0.12	300	45	2350
	82	6.3X7	0.12	410	45	2550
	100	5X7	0.12	500	48	2150
		5X8	0.12	500	38	2450
		5X9	0.12	500	38	2700
		5X11.5	0.12	500	38	2900
		6.3X5.5	0.12	500	48	2450
		6.3X7	0.12	500	45	2750
		6.3X8	0.12	500	32	2900
		8X8	0.12	500	20	3500
		8X11.5	0.12	500	20	3750
	120	5X9	0.12	600	38	2850
		6.3X8	0.12	600	32	3050
	150	5X9	0.12	780	35	2950
		5.5X9	0.12	780	35	3250
		6.3X7	0.12	780	32	3200
	180	5X9	0.12	900	35	3100
		6.3X7	0.12	900	32	3300
		8X8	0.12	900	20	3900
	220	5X11.5	0.12	1100	35	3100
		5.5X9	0.12	1100	35	3200
		5.5X11.5	0.12	1100	35	3550
		6.3X7	0.12	1100	35	3350
		6.3X8	0.12	1100	35	3500
		6.3X9	0.12	1100	32	3700
		8X10.5	0.12	1100	20	4100
		8X11.5	0.12	1100	20	4300
	270	5X11.5	0.12	1350	35	3250
		5.5X9	0.12	1350	35	3250
		6.3X9	0.12	1350	32	3800
	330	5X15	0.12	1650	35	3350
		5.5X11.5	0.12	1650	35	3650
		6.3X9	0.12	1650	35	3750
		6.3X11.5	0.12	1650	35	3800
8X8		0.12	1650	28	4250	

制品尺寸与容许纹波电流一览表

尺寸: 直径( $\phi D$ ) $\times$ 长度(L), (毫米/mm)  
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

本产品目录之规格如有变更恕不另行通知(Cat. 2024C1) All product specifications in the catalog are subject to change without notice.

Dimension and Permissible Ripple Current

Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 120 Hz, 105°C

Rated Volt. (V)	Capacitance ( $\mu F$ )	Size $\phi D \times L$ (mm)	$\tan \delta$ (120Hz, 20°C)	L C ( $\mu A$ )	ESR (m $\Omega$ /at 100k Hz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)
25V	330	8X11.5	0.12	1650	28	4500
		10X12	0.12	1650	20	4900
	470	5.5X15	0.12	2350	35	3750
		6.3X11.5	0.12	2350	35	3900
		6.3X15	0.12	2350	35	4100
		8X8	0.12	2350	28	4250
		8X11.5	0.12	2350	28	4750
		8X16	0.12	2350	20	4900
		10X12	0.12	2350	20	4900
		560	5.5X15	0.12	2800	35
	6.3X15		0.12	2800	35	4300
	8X11.5		0.12	2800	28	5100
	680	6.3X15	0.12	3400	35	4500
		8X11.5	0.12	3400	28	5100
		8X16	0.12	3400	20	5250
		10X12	0.12	3400	20	5250
	820	6.3X15	0.12	4100	35	4700
		8X13.5	0.12	4100	28	5400
		8X16	0.12	4100	20	5500
		10X12	0.12	4100	20	5500
	1000	8X16	0.12	5000	20	5650
		10X12	0.12	5000	20	5650
		10X16	0.12	5000	20	5700
	1200	10X16	0.12	6000	20	5800
1500	10X16	0.12	7500	20	5900	
2200	10X16	0.12	11000	20	6100	

制品尺寸与容许纹波电流一览表

尺寸: 直径( $\phi D$ ) $\times$ 长度(L), (毫米/mm)  
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

### ◆ 高低温阻抗

阻抗比	性能
Z(-55°C)/Z(+20°C)	0.75 to 1.25
Z(105°C)/Z(+20°C)	0.75 to 1.25