

ACAL Series

- Feature: Surface mounting, Reduced height, Wide temperature range
- Suitable for DC-DC converters, voltage regulators and decoupling applications
- Rate voltage: 2~2.5Vdc.
- Endurance: 2000hrs at 105°C
- RoHS Compliant



Specifications			
Item	Conditions	Characteristics	
Category Temperature Range		-55 to +105 °C	
Rated Voltage Range		2 to 2.5 Vdc	
Capacitance Tolerance	at 20°C, 120Hz	±20 % (M) ; Y : +10 ~ -35%	
Leakage Current	at 20°C after 2 minutes	$I \leq 0.1CV$ (2 V.DC to 2.5 V.DC) I : Leakage Current(μA), C : Rated Capacitance(μF), V : Rated Voltage(V)	
Surge Voltage	15°C to 35°C	Rated voltage × 1.25 (2 V.DC to 2.5 V.DC)	
Dissipation Factor (tanδ)	at 20°C , 120Hz	Case Height : S Type, 0.06 max.	
Endurance	105°C, rated voltage applied, 2000 hrs	Appearance	No significant damage
		Capacitance Change	±20% of the initial value
		Dissipation Factor	≤ 200% of the initial specified value
		Leakage Current	2 V.DC to 2.5 V.DC ≤ 300% of the initial specified value
Damp Heat, Steady State	60°C, 90 to 95%RH, 500 hrs	Appearance	No significant damage
		Capacitance Change	(2 V.DC to 2.5 V.DC) +70%, -20% of the initial value
		Dissipation Factor	≤ 200% of the initial specified value
		Leakage Current	2 V.DC to 2.5 V.DC within the initial specified value
Surge Voltage	The capacitors shall be subjected to 1000 cycles each consisting of charge with the surge voltages, at 15°C to 35°C for 30 seconds through a protective resistor(R=1KΩ) and discharge for 5min 30 seconds.	Appearance	No significant damage
		Capacitance Change	±10% of the initial value
		Dissipation Factor	within the initial specified value
		Leakage Current	within the initial specified value

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Standard Ratings

WV(VDC)	Cap (μF)@120Hz	tanδ Max. @120Hz	Leakage Current Max. (μA)	ESR Max. (mΩ) @100kHz	Ripple Current (A r.m.s) @100kHz	Part No.
2	220	0.06	44	9	6.3	ACAL2R0S221E09
	220	0.06	44	9	6.3	ACAL2R0S221E09Y
	330	0.06	66	6	7.5	ACAL2R0S331E06
	330	0.06	66	9	6.3	ACAL2R0S331E09
	330	0.06	66	9	6.3	ACAL2R0S331E09Y
	470	0.06	94	3	10.2	ACAL2R0S471E03
	470	0.06	94	4.5	8.5	ACAL2R0S471E04
	470	0.06	94	6	7.5	ACAL2R0S471E06
	470	0.06	94	9	6.3	ACAL2R0S471E09
	470	0.06	94	9	6.3	ACAL2R0S471E09Y
2.5	220	0.06	55	9	6.3	ACAL2R5S221E09
	220	0.06	55	9	6.3	ACAL2R5S221E09Y
	330	0.06	82.5	6	7.5	ACAL2R5S331E06
	330	0.06	82.5	9	6.3	ACAL2R5S331E09
	330	0.06	82.5	9	6.3	ACAL2R5S331E09Y
	470	0.06	117.5	3	10.2	ACAL2R5S471E03
	470	0.06	117.5	4.5	8.5	ACAL2R5S471E04
	470	0.06	117.5	6	7.5	ACAL2R5S471E06
	470	0.06	117.5	9	6.3	ACAL2R5S471E09

Temperature Compensation Multipliers for Ripple Current			
	$\leq 45^{\circ}\text{C}$	$45^{\circ}\text{C} < T \leq 85^{\circ}\text{C}$	$85^{\circ}\text{C} < T \leq 105^{\circ}\text{C}$
2 V.DC to 2.5 V.DC	1.0	0.7	0.25

PRODUCT IDENTIFICATION

<u>ACAL</u>	<u>2R5</u>	<u>S</u>	<u>331</u>	<u>E06</u>	☐
Product	Rated Voltage	Case Height	Capacitance	ESR	Suffix for special code
	2R5: 2.5V	S:1.9mm	331=330μF	E06: 6mΩ	Y=+10~-35%

DIMENSIONS AND MARKING

Case size	L	WA	WB	H	P
S	7.3±0.3	4.3±0.3	2.4±0.2	1.9±0.1	1.3±0.2

