




SPECIFICATION SHEET

SPECIFICATION SHEET NO.	Q1012- MKP334K310PCLF	
DATE	Oct. 12, 2023	
REVISION	A0	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	<p>Dip Metallized Polypropylene Film Capacitor, MKP series, Class X2, Case size: L18.0.*H14.5*T8.5mm, 2 pins, Capacitance 0.33μF, Tol. ±10%, Continuous AC Voltage: 310VAC Max. Continuous DC Voltage: 630VDC Max. Lead Space: 15.0mm, Lead Length: 18.0mm Min. Operating Temp. Range -40°C ~+110°C. Package in Bulk, 500pcs/Bag RoHS/RoHS III/REACH Compliant</p>	
CUSTOMER		
CUSTOMER PART NO.		
CROSS REF. PART NO.		
ORIGINAL MFG/PART NO.	Aillen/MPK334K310A15L200(60S)	
PART CODE	MKP334K310PCLF	

VENDOR APPROVE			
Issued/Checked/Approved			
DATE: Oct. 12, 2023			

CUSTOMER APPROVE	
DATE:	

10/12/2023

DIP METALLIZED POLYPROPYLENE FILM CAPACITOR MKP SERIES

MAIN FEATURE

- Metallized Polypropylene Non-induction Construction
- High Moisture-resistance
- Excellent active and passive flame resistant abilities
- Self healing properties
- Meets the Requirements of UL 94 V-0
- Withstanding Overvoltage Stressing
- Cross Competitors Parts
- RoHS/REACH Complaint



APPLICATION

- X2 Class For Interference Suppression
- “Across The Line” Applications
- Capacitance Divider Where Series With The Mains In Energy Meter, LED Drivers And Control Boards In White Goods And Home Appliances

RFQ

[Request For Quotation](#)

PART CODE GUIDE

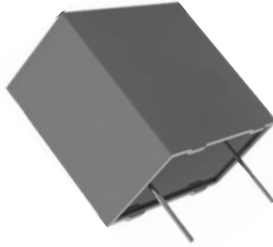
MKP	334	K	310	PC	LF
1	2	3	4	5	6

1. MKP: Dip Metallized Polypropylene Film Capacitor MKP series, Class X2, Case size: L18.0.*H14.5*T8.5mm, 2 pins
2. 334: Rated Capacitance Code, The First 2 Digits Indicate Significant Figures And The Third Digit Specifies The Number OfZero
334: 0.33µF
3. K: Capacitance Tolerance code, J: ±5%; K: ±10%; M: ±20%
4. 310: Rated AC Voltage code: 300: 300VAC; 310: 310VAC
5. PC: Lead Space Code, PA:7.5;mm; PB: 10.0mm; PC: 15.0mm; PD:22.5mm; PE: 27.5mm
6. LF: Lead Length Code, LA:3.5±0.5mm; LB: 4.0±0.5mm; LC: 5.0±0.5mm; LD: 8.0±1.0mm; LE: 10=10.0±1.0mm; LF: 20=18.0mm Min.
TT: Taping, Hole space(P0):12.7mm; TS: Taping, Hole space (P0):15.0mm

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DIMENSION

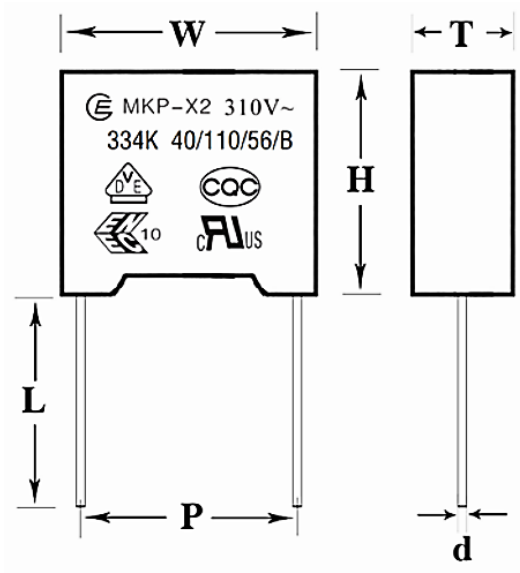
Image For Reference



MKP Series

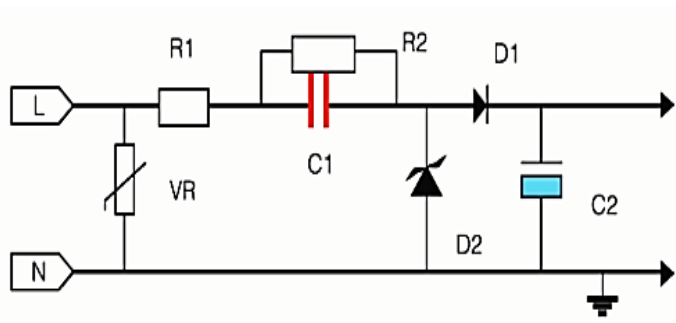
Case Size

L18.0.*H14.5*T8.5mm



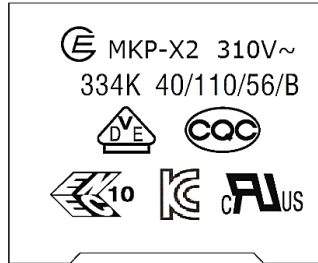
SYMBOL	DIMENSION (mm)
W	18.0± 0.5
H	14.5± 0.5
T	8.5± 0.5
P	15.1± 0.5
d	0.8± 0.08
L	18.0 Min.







TYPICAL DIVIDER CIRCUIT



DIP METALLIZED POLYPROPYLENE FILM CAPACITOR MKP SERIES






MARKING GUIDE



LINE	SYMBOL		DESCRIPTION
1			MFG Logi
2	MKP		Series Code
3	X2		Class code
4	334K		Capacitance + Tolerance
5	310V		Rated Voltage, VAC
6	40/110/56/B(C)		IEC Climatic Category
7	VDE		Safety Organization, Approved Marking
8	ENEC		
9	UL/CUL		
10	CQC		
11	Korea		

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CLASS MKP X2 APPROVAL, STANDARD, RATED VOLTAGE AND FILE NO.

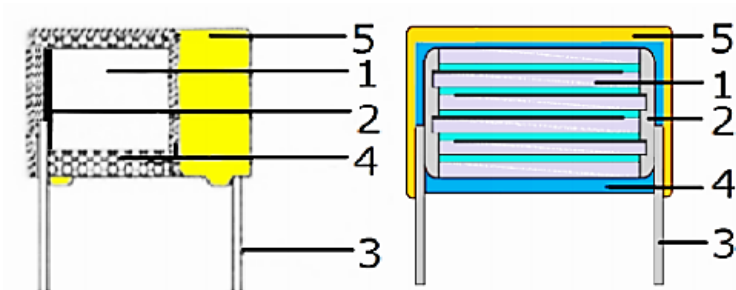
No.	Safety Organization	Standard No.	Recognition No.	Rated Voltage (VAc)	Approved Monogram	
1	UL/CUL	UL60384-14	E252221	310 300		USA/ Canada
2	CQC	GB/T6346.14-2015	CQC15001123582			China
3	VDE	EN 60384-14(VDE 0565 Teil1-1): 2014-04	40022258			Germany
4	ENEC	EN 60384-14:2013-08 IEC 60384-14(ed.4)				European Economic Community
5	KC	KC 60384-14(2015-09)	HU03026-17002A HU03026-17003A HU03026-17004A			Korea

Note” *KC certified capacitance range472~105:

DIP METALLIZED POLYPROPYLENE FILM CAPACITOR MKP SERIES

CONSTRUCTION

MKP series are wound with metallized polypropylene film dielectric, non-inductive construction, CP wire and encapsulated in plastic case with flame retardant epoxy resin sealed. They have excellent features of self-healing and good flame retardant according to UL94V-0.



NO.	MAIN CONSTRUCTION	MATERIAL SPECIFICATION	NOTE
1	Dielectric	Metallized Polypropylene Film	
2	Solder	Sn-Zn alloy	
3	Terminal	CP wire (\varnothing 0.8or0.6mm)	
4	Sealed Material	Epoxy resin	UL94V-0
5	Plastic Case	PBT	UL94V-0

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TECHNICAL PARAMETER

Table 1

PARAMETER	UNIT	VALUE
Climatic Category		40/110/56/B(C)
Passive Flammability Class		
Capacitance Range	μF	0.33
Capacitance Tolerance	%	± 10
Maximum Continuous AC Voltage	VAC	310 @50/60Hz
Maximum Continuous DC Voltage	VDC	630
Dissipation Factor	%	≤0.1% (1KHz at 20~25°C)
Insulation Resistance (Measured at 100±10VDC/60s/20~25°C)	mΩ	≥ 15000
Withstand Voltage Between Terminals		General Purpose: 1600VDC/1min, no breakdown or flashover.(Voltage raising time 5-10sec,cut off current 10mA,ARC=OFF) Compact product: 1333DC/1min,no breakdown or flashover.(Voltage raising time 5-10sec,cut off current 10mA,ARC=OFF)
Withstand Voltage Between Terminals and Case		2100VAC1min,no breakdown or flashover
Operating Temp. Range	°C	-40 ~+110

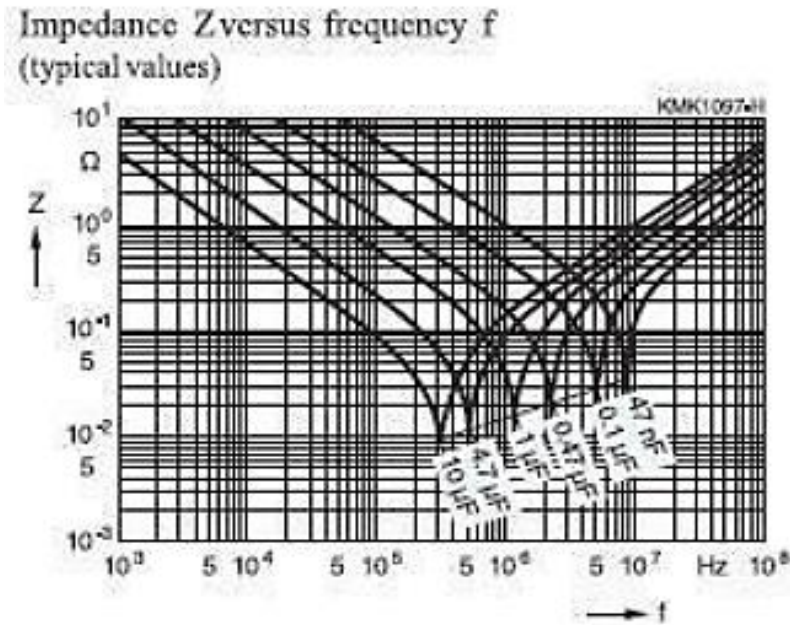
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PULSE HANDLING CAPABILITY

1. “dv/dt” represents the maximum permissible voltage change per unit of time for non-sinusoidal voltages, expressed in V/μS.
2. “ko” represents the maximum permissible pulse characteristic of the waveform applied to the capacitor, expressed in V²/μ S
3. The values of dv/dt and ko provided below must not be exceeded in order to avoid damaging the capacitor.

LEAD SPACE	10mm	15mm	22.5mm	27.5mm
dv/dt in V/μS	475	340	170	120
Koin V ² /μS	408500	292400	146200	103200

TYPICAL PERFORMANCE - For Reference Only



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SPECIFICATION AND TEST METHODS

Test condition: Unless otherwise specified, the standard range of atmospheric Conditions for marking measurements and test is conducted in the following ambient:

1) Ambient temperature 15~35 °C ; 2) Relative humidity : 25~75%.

If there may be any doubt on the results, measurements shall be made within the Following limits.

2) temperature : 20±2°C , 2) Relative humidity :60~70%.

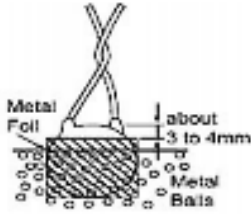
Default frequency of the related alternating current tests: 50Hz

Specification And Test Methods – Part 1

No.	Item	Test method	Specification			
1	Appearance	The appearance shall be inspected by naked eyes.	No marked defect on appearance			
2	Dimensions	The dimensions shall be measured with slide calipers	Dimensions of capacitor and taping shall satisfy specified requirement.			
3	Marking	The marking shall be checked by 4x magnifying glass	Legible marking			
4	Capacitance & Tolerance	The capacitance shall be measured at 25°C with 1KHz 1±0.2 Vrms.	Refer to <i>Table 1</i>			
5	Dissipation factor(D.F)	The dissipation factor shall be measured at 25°C with 1KHz 1±0.2 Vrms.	0.1% max			
6	Insulation resistance	The insulation resistance shall be measured with 100VDC within 60±5 sec of charging.	Test A		Test B or Test C	
			CR > 0.33µF RCS	CR ≤ 0.33µF RMΩ	RMΩ	
			5000	15000		30000

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Specification And Test Methods- Part 2

No.	Item	Test method	Specification
7	Dielectric Strength (Voltage Proof) - Between Lead Wires	The capacitor should not be damaged when test voltages of table below are applied between the lead wires for 60 sec Type: X2; Test Voltage: DC1600V(r.m.s.)	No failure
	Dielectric Strength (Voltage Proof) - Body Insulation	First, the terminals of the capacitor should be connected together. Then, as shown in figure below, a metal foil should be closely wrapped around the body of the capacitor to the distance of about 3 to 4mm from each terminal. Then, the capacitor should be inserted into a container filled with metal balls of about 1mm diameter. Finally, ac voltage of table below is applied for 60 sec. between the capacitor lead wires and metal balls. Type: X2; Test Voltage: AC2100V(r.m.s.)	No failure
			
8	Robustness of Termination	The capacitor body shall be held in such a manner so that the axis of the lead is vertical. The tensile force of 10N(for lead of $\varnothing 0.6 \sim \varnothing 0.8\text{mm}$) shall be applied to the lead in a direction of its axis and acting in a direction away from the body of the capacitor for 10 ± 1 seconds.	The capacitor shall be no broken and the lead shall be no loose or cut off.
9	Solderability Of leads	The lead wire of a capacitor should be dipped Into molten solder for $2 \pm 0.5\text{sec}$. The depth of immersion is up to about 1.5 to 2.0mm from the root of lead wires. Temperature. of solder: Lead Free solder(Sn-3Ag-0.5Cu): $245 \pm 5^\circ\text{C}$ H63 Eutectic Solder: $235 \pm 5^\circ\text{C}$	A new uniform coating of solder shall cover a minimum of 95% of the surface being immersed

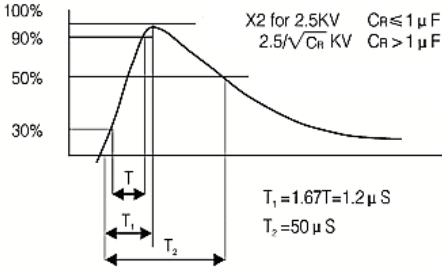
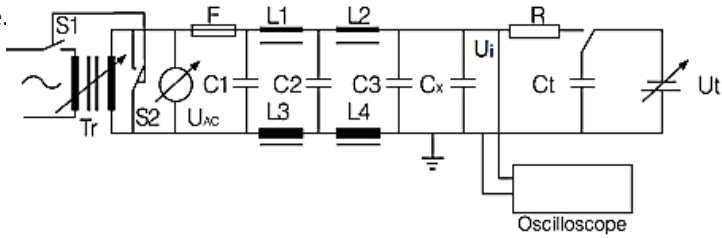
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Specification And Test Methods- Part 3

No.	Item	Test method		Specification
10	Resistance to Soldering heat	<p>Temperature of solder bath 260±5°C. The immersing depth of lead shall be a position 2-0.5mm from the seating plane, using a thermal screen. The thickness of the screen is 1.5±0.5mm. The immersion time shall be 10±1 seconds.</p> <p>Post-processing: The capacitor shall be preserved at the standard atmospheric condition for 1 to 2 hours.</p>	Appearance	No visible damage
			Dissipation Factor	<i>As specification Table 1</i>
			Capacitance Change	Within ±5%
			Voltage proof (between leads)	<i>Refer to Item No.7 Dielectric Strength (Voltage Proof)</i>
11	Solvent Resistance	The capacitor shall be immersed into isopropyl alcohol for 30±5nds.sec.	Appearance	No visible damage Legible marking
12	Damp heat steady State	<p>The capacitor shall be stored for 56 days (1350±8hours) at a temperature of 40°C±2°C and a relative humidity of (93±3) %.</p> <p>Post-processing: the capacitor shall be stored at a temperature of 85°C±2°C for 1 hour, and then the capacitor shall be recovered for 24±2 hours. Post-processing: the capacitor shall be stored for 1 to 2 hours at the standard atmospheric condition.(Temperature:15 to 35°C,Relative umidity:45 to 75%,Atmospheric pressure:86 to 106kPa)</p>	Capacitance Change ($\Delta C/C_0$)	Capacitance Change, Within ±5%
			Dissipation Factor	<i>As specification</i> $\Delta tg\delta \leq 0.005 (CR > 1\mu F)$; $\Delta tg\delta \leq 0.008 (CR \leq 1\mu F)$
			Insulation resistance	Test A: 1) $CR > 0.33\mu F$ RFS: 3000 2) $CR \leq 0.33\mu F$ RMΩ: 8000 Test B/Test C: RMΩ: 15000
			Dielectric Strength	<i>Refer to Item No.7 Dielectric Strength (Voltage Proof)</i>

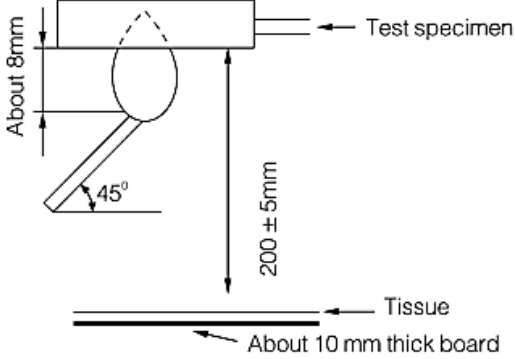
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Specification And Test Methods- Part 4

No.	Item	Test method	Specification	
13	Endurance test(life)	<p>The capacitor shall be subjected to three impulses as shown below.</p>  <p>Then the capacitors are placed at a temperature of 110°C for 1000 hours. Throughout the test, the capacitors are subjected 50Hz/60Hz. 1.25UR voltage, except that once each hour the voltage is increased to 1000Vrms for 0.1sec. Post-processing: the capacitor shall be preserved for 24±2 hours at standard atmospheric condition.</p>	Appearance	No visible damage
			Dissipation Factor	As specification $\Delta tg\delta \leq 0.005 (CR > 1\mu F)$; $\Delta tg\delta \leq 0.008 (CR \leq 1\mu F)$
			Capacitance Change	Within ±10%
			Insulation resistance	Test A: 1) CR>0.33μFRCS: 3000 2) CR≤0.33μFRMΩ:8000 Test B/Test C: RMΩ: 15000
			Voltage proof (between leads)	Refer to Item No.7 Dielectric Strength (Voltage Proof)
14	Active Flammability	<p>The capacitor should be individually wrapped in at least one but not more than two complete layers of cheese-cloth. The capacitor should be subjected to 20 discharges. The interval between successive discharges should be 5 sec. The UAC should be maintained for 2 min. after the last discharge.</p>  <p>C1,2:1uf±10% C3:0.033uf±5% 10kV; L1to 4:1.5mH±20% 16A Rod core choke; Ct:3uf±5% 10kV R:100Ω±2%; Cx: Capacitor under test UAC:UR±5%; F:Fuse, Rated 10A ; UR: Rated Voltage ; Ut: Voltage applied to Ct.</p>	The cheese-cloth should not be on fire	

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Specification And Test Methods- Part 5

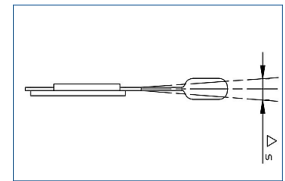
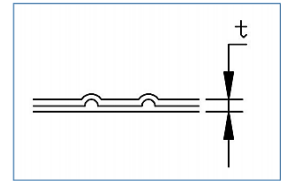
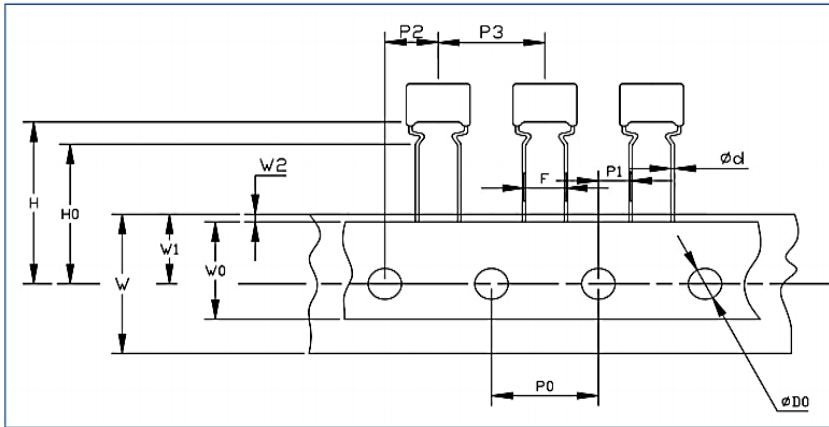
No.	Item	Test method	Specification
15	Passive Flammability	<p>Length of flame:12mm ; Gas burner: Length 35mm min. Inside diameter:0.5±0.1mm; Outside diameter: 0.9mm min. Gas: Butane gas purity 95% min.</p> 	<p>Severity and Requirements See following Table 2</p>

Severity and Requirements- Table 2

Flaming Ratings	Severity Level			Specification
	Flame is applied for a time (S) against the capacitor volumes range (mm).			
	250 < Volumes ≤500	500 < Volumes ≤1750	Volumes > 1750	
B	20	30	60	10
C	10	20	30	30

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PACKAGE INFORMATION - Taping specification (Unit: mm)



Symbol	Item	S Taping		T Taping		
F	Lead spacing	7.5±1.0	10.0±1.0	5.0±0.8	7.5±1.0	10.0±1.0 15.0±1.0
d	Lead diameter	Refer to spec				
W	Carrier tape width	18.0±0.5				
W0	Hold down tape width	13.0±0.5				
W1	Position of sprocket hole	9.0±0.5				
W2	Hold down tape position	1.5±0.5				
t	Total tape thickness	0.6±0.2				
P0	Pitch of sprocket hole	15.0±1.0		12.7±1.0		25.4±1.0
D0	Diameter of sprocket hole	4.0±0.3				
P1	Length from hole center to lead wire center	3.75±0.7	5.0±0.7	3.85±0.7		5.0±0.7
P2	Length from hole center to component center	7.5±1.3	15.0±1.3	6.35±1.3	12.7±1.3	12.7±1.3
P3	Pitch of component	15.0±1.0		12.7±1.0		25.4±1.0
H	Height from hole center to the bottom of body	18.5±1.0				
H0	Distance between reference	16.0±1.0				
ΔS	Deviation across tape	0±2.0				

DIP METALLIZED POLYPROPYLENE FILM CAPACITOR MKP SERIES

ROHS COMPLIANCE

- The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained from Download Center at www.nextgencomponent.com.

REACH COMPLIANCE

- REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained from Download Center at www.nextgencomponent.com.

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