

CUSTOMER NOTICE OF PRODUCT/PROCESS CHANGE

Customer Name:		CTS Distribution		
Customer Part Number:		N/A		
CTS Part Number:		292 all P/Ns (292V1X24A、292V1X24B、292V1X00A、292V1X00B)		
 Additional manufactur Supplier Change/ 2nd S Process Change. This change is notificat Customer authorization 	ing site established Source ion only. n is required. Pleas	l. e confirm acceptance by email or other written communication.		
	Due to a worldwide shortage of IC components, including Schmitt Trigger, CTS phases in the			
	2 source suppl	e supplier to secure supply and maintain production activities without breaks in		
	supply chain. In	e alternative Schmitt Trigger will be the same type and grade as the current		
Description of Change:	ones such that C	TS is confident that the fit, form, and function of the products will remain the		
	same.			

-Current Source: Nexperia	
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	-New added Source: TI		
CTS Product Series:	292		
Reason for Change:	Worldwide Supply chain shortage of IC		
Implementation Date:	On Jun 15, 2022 shipment for 24PPR encoders.		
	1. There is no change to fit, form or function.		
Notes:	2. Products that have RoHS and REACH certifications will remain in compliance.		
	3. CTS conducts reliability tests to ensure specification conformity and product performance.		

CTS thanks you in advance for your business and support in this matter, and we look forward to the continued service of our customers. Should there be any questions or concerns, please reach out to your sales or customer service representatives.

Best regards,

Electro Components SBU



291 Series New IC type Test number: 220274

Prepared by: Robert Hsiao Approved by: Solomon Wang May 5, 2022



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Program Description:	Verify new IC			220274		
Part Number:	291S0075					
AQE/Quality Engineer:	Robert Hsiao	Qualification Site:	CTS Taiwan			
Project/Product Engineer:	Wight Huang	Qualification Department:	QA			
Test Item	Condition	Criterion	Sample Size	Completion	Test Result	Remark
			Requested	Date		
Life	3,000,000 LIFE CYCLES @ 30 RPM MAX.		9	2022/4/29	Pass	
Humidity	96 HOURS FOR 90 ~95%RH@40°C		10	2022/4/28	Pass	
Vibration	THE PRECISION POTENTIOMETER AT 25 ± 3°C AMBIENT TEMPERATURE. X,Y,Z THREE ORTHOGONAL PLANES FOR 10 SWEEP CYCLES EACH @ 1 OCTAVE/MINUTE SWEEP RATE FOR VIBRATION AT 15 G'S(RMS) WITH FREQUENCY CONTINUALLY SWEEPING FROM 10 TO 2000 HZ.	Meet electrical specs - phase angle by $90^{\circ} \pm 70^{\circ}$	5	2022/4/28	Pass	
Swithc Life	1,000,000 LIFE CYCLES @ 30 RPM MAX.		10	2022/4/28	Pass	
Total			34			











2nd IC comparison & Verification

Prepared by : Owen Lin Date : 2022-02-22

Specification Comparison

ightarrowRecommended Operating Conditions

Operating Condition	Original material	Alternative material	Specification Comparison
Supply Voltage	4.5V~5.5V	1.65V~5.5V	Better
Ambient Temperature	-40°C~125°C	-40°C~125°C	Match
Output Voltage	Vcc	Vcc	Match

→Absolute Maximum Rating

Maximum Rating	Original material	Alternative material	Specification Comparison
Supply Voltage	-0.5V~7V	-0.5V~6.5V	Match Specification: 5V +/-0.25 V dc
Storage Temperature	-65°C~150°C	-65°C~150°C	Match
Output Current	25mA	50mA	Better

\rightarrow ESD Rating

ESD Rating	Original material	Alternative material	Specification Comparison
HBM	±2000V	±2000V	Match

Pin Function and Package

ightarrowPin Configuration and Functions : pin to pin



 \rightarrow Package: the both of key dimensions are the same



Verification Result

Specification: 5V +/-0.25 V dc

We use a wider voltage than the specification to test to make sure the product has no problems.

Electrical function is normal by voltage 4.5 and 5.5, as shown below.





292 Series New IC type Test number: 220357

Prepared by: Robert Hsiao Approved by: Solomon Wang May 20, 2022



Program Description:	Verify new IC			Test No.: 220357			
Part Number:	292S0002						
AQE/Quality Engineer:	Robert Hsiao	Qualification Site: CTS Taiwan					
Project/Product Engineer:	Wight Huang	Qualification Department: QA					
Test Item	Condition	Criterion	Sample Tested	Completion Date	Test Result	Remark	
Detetional life	500,000 life cycles @ 30 rpm max. @room temperature.		5	2022/4/19	Pass		
Rotational life	250,000 cycles w/side load 300 ~ 350 gf @ 30 rpm max. @room temperature		5	2022/4/19	Pass		
Dry Heat	96 HOURS AT +85 ± 2°C , AIR DRY FOR 2 HOURS	After test Phase angle by 90°± 45	5	2022/4/12	Pass		
Cold	96 HOURS AT -10 ± 2°C, AIR DRY FOR 2 HOURS		5	2022/4/12	Pass		
Temperature Cycling	-40 \pm 3°c for 30 minutes followed by +85 \pm 3°c for 30 minutes per cycle, for 30 cycles. Air-dry for 2 hours		5	2022/4/15	Pass		
Humidity	96 HOURS FOR 90 ~95%R.H. @40°C.		5	2022/4/12	Pass		
Total			30				











