

Product Return: CPR261140926

Contact

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TI orderable part number :	SN74HC4851PWR
Customer part number :	
Customer Requesting :	Failure analysis
Purchased from :	TI Authorized Distributor
Sales contact name :	
Was the board containing suspect TI part manufactured by 3rd party?	No
Board manufacturer name :	
Board manufacturer site/location :	
Board manufacturer contact email address :	
Order number :	
Distributor name :	DIGI-KEY
Distributor site/location :	Americas
Distributor contact email address :	sarah.whalen@digikey.com
Distributor tracking# / SCAR# :	inv117839830
Customer reference/tracking # :	DMR 9254-9267-9271

Sales order number (SO#) : 95581182
Purchase order number (PO#) : TJ815196
Delivery document number (DN#) : Packlist1
End customer name :
End customer's company name : Not shipped to end customer
End customer's email address :
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Return details

Priority of this return : Critical : Severely impacts production

Application : COMMERCIAL

Customer failure location : In-Circuit Test (ICT)

Type of issue : Electrical : Parametric Issue

Issue related to specific TI data sheet spec parameter : No

TI data sheet spec parameter result :

Provide the data sheet spec parameters names and their measured values :

The impedance (open/short/leakage) measured on each pin of the suspect unit : Yes

Impedance measurement result : Fail

Provide the pin numbers that failed and their measure values : Failed pins and measured values: Output pins Y0–Y7 and COM showed abnormal diode-mode measurements. Expected (good lot): ~0.70–0.72 V (this is versus VCC or GND) Suspect units: ~0.50–

Provide TI component level failure description based on customer verification results. :

0.53 V vs GND ~1.26–1.31 V vs VCC Values are outside standard ICT limits (0.4–0.9 V), resulting in test failure.

The SN74HC4851PWR devices from suspect lots show abnormal electrical behavior compared to known good units. Diode-mode measurements on output pins Y0–Y7 and COM show deviations from expected values (~0.70–0.72 V), measuring ~0.50–0.53 V vs GND and ~1.26–1.31 V vs VCC, resulting in ICT failures. Comparative testing on the same PCBA confirmed units pass with good lot devices and fail when replaced with suspect lot devices, isolating the issue to the TI component and indicating a parametric electrical deviation. Complete verification data and test results are provided in the attached report.

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Part Details:

Total failed quantity :	186
Desired return quantity :	3
Total units run :	480
Failure rate (ppm) :	387500
Is the suspect TI part used in more than one location on the circuit board? :	Yes
How many locations? :	4
Which locations are causing the issue? :	U5, U6, U7, U8
Is this a new application? :	No
When did production of this application start? :	02/2018
Was the application/design changed or modified recently (within the last year)? :	No
Did the same issue occur in the past? :	No

Which firmware version is used? :

**MSP430/MSP432
Microcontrollers :**

Is the JTAG access disabled? :

Please provide the customer code :

Failure conditions :

Temperature (°C) :	25	25	25
Mileage (km) :	0	0	0
Frequency (Hz) :	1	1	1
Vcc/Vdd (V) :	3.3 DC	3.3 DC	3.3 DC
Vout (V) :	3.3 DC	3.3 DC	3.3 DC

Failure conditions to a specific usage :

What is the condition of the suspected failing TI part(s)? :	Repeatable	Repeatable	Repeatable
Was the observed issue verified on suspect TI part level outside the application? :	Yes	Yes	Yes
Was the suspect TI part installed onto another passing board causing that board to fail (A-B-A swap)? :	Yes	Yes	Yes
Did replacing the suspect TI part resolve the issue? :	Yes	Yes	Yes

Additional comments:

Declined : other: please see details in comments section below-Hi Alexis, After reviewing the failure report, it seems you are reporting failures on 3 specific lots. Upon data review for this device, there was a PCN change from our Sherman fab to RFAB. The good passing unit is from our Sherman fab and the 3 failing lots are from RFAB post PCN change. I will send you an email with further details and next actions. Best Regards, Jimmy Zheng

Files:

File 1 : SCAR 26-01 Electrical Failure 2-19-2026.pdf
Customer Analysis Report
