ISL75054SLHMF

Low Dose Rate Total Ionizing Dose Testing of the ISL75054SLHMF Ultra Low Noise LDO

Introduction

This report summarizes the results of low dose rate (LDR) total ionizing dose (TID) testing of the ISL75054SLHMF radiation hardened ultra low noise low-dropout regulator (LDO). The testing provides an assessment of the total dose hardness of the part and provides an estimate of the bias sensitivity. Parts were irradiated either under bias or with all pins grounded at a LDR (0.01rad(Si)/s) to 100krad(Si) followed by a 168-hour biased anneal at 100°C. The ISL75054SLH is rated to 75krad(Si) at LDR and is acceptance tested on a wafer-by-wafer basis to the datasheet limits.

Product Description

The ISL75054SLH is a radiation hardened low dropout linear regulator with ultra-low noise, and high PSRR intended for ADC, RF, and other noise sensitive applications. The device has an operating supply voltage range of 2.7V to 30V and an output voltage range of 0.5V to VIN - VDO. The device supplies up to 1.0A of current at a typical 379mV dropout voltage. Built-in protection includes foldback, internal and externally programmable current limit, and over-temperature protection. The ISL75054SLH features excellent noise performance and PSRR for radiation hardened LDOs, with ultra-low RMS noise of 4µVRMS from 10Hz to 100kHz and ultrahigh PSRR of 101.5dB at 120Hz.

The ISL75054SLHMF is offered in a 10 lead ceramic flatpack package and operates across the full-range military temperature of -55°C to +125°C. The pin assignments for the ISL75054SLHMF are shown in Figure 1 and the pin descriptions are shown in Table 1.

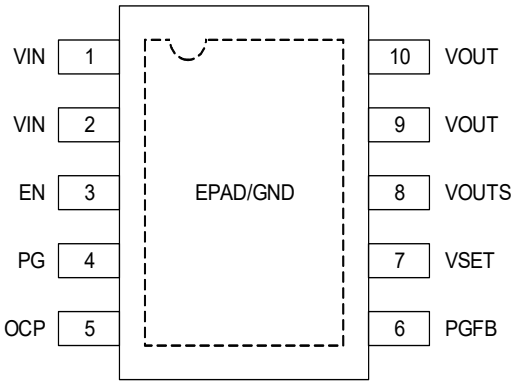

Figure 1. ISL75054SLHMF Pin Assignments

Table 1. ISL75054SLH Pin Descriptions

Pin Number	Pin Name	Description
1	VIN	Input supply pins. VIN range is from 2.7V to 30V. This pin requires sufficient input capacitance from VIN to GND. 30µF is recommended and should be placed close to the device pins.
2	VIN	
3	EN	Enable pin. When set above 1.14V nominally, the device is enabled.
4	PG	Power-Good output. The output is open-drain logic, connect a pull-up resistor to VIN. For SEE mitigation, connect a 150pF capacitor from PG to GND. PG stays low when PGFB is connected to VIN.
5	OCP	Overcurrent protection. OCP allows the current limit to be programmed with an external resistor, R_{OCP}, between a typical range of 0.2A to 1.4A. Connect OCP directly to GND to set the maximum current limit. *Note*: OCP sources a typical 530:1 ratio of IOUT on this pin.

Table 1. ISL75054SLH Pin Descriptions (Cont.)

Pin Number	Pin Name	Description
6	PGFB	Power-good feedback. To enable fast start-up functionality and power-good detection, connect an external resistor divider from VOUT so that 665mV is provided to PGFB at the nominal output voltage. For SEE mitigation, connect a 470pF capacitor from VOUT to PGFB. Connect PGFB to VIN to disable fast start-up and PG functions when not required.
7	VSET	Output voltage set. VSET sources a precision 100µA current that flows through the external R_{SET} resistor to GND. VSET sets the soft-start output voltage ramp rate through an external capacitor, C_{SET}, to GND. C_{SET} also provides filtering to internal device noise. Renesas recommends selecting C_{SET} between 0.47µF and 10µF.
8	VOUTS	Output voltage sense. VOUTS is the inverting input to the error amplifier. Connect VOUTS directly to the output capacitor.
9	VOUT	Output voltage pins. A capacitance is required from VOUT to GND, 30µF is recommended. VOUT is set through a resistor from the VSET pin to GND and can range from 0.5V to V_{IN} - V_{DO}.
10	VOUT	
EPAD	GND	Ground. The EPAD is electrically connected to GND and functions as a heatsink. Connect to PCB GND.

Contents

1. Test Description

1.1 Irradiation Facility

LDR testing was performed at 0.01rad(Si)/s using a Hopewell Designs N40 vault-type LDR irradiator located in the Palm Bay, Florida Renesas facility. A PbAl box was used to shield the test fixture and devices under test against low energy, secondary gamma radiation.

1.2 Test Fixturing

Figure 2 shows the configuration used for the biased LDR testing and the anneal.

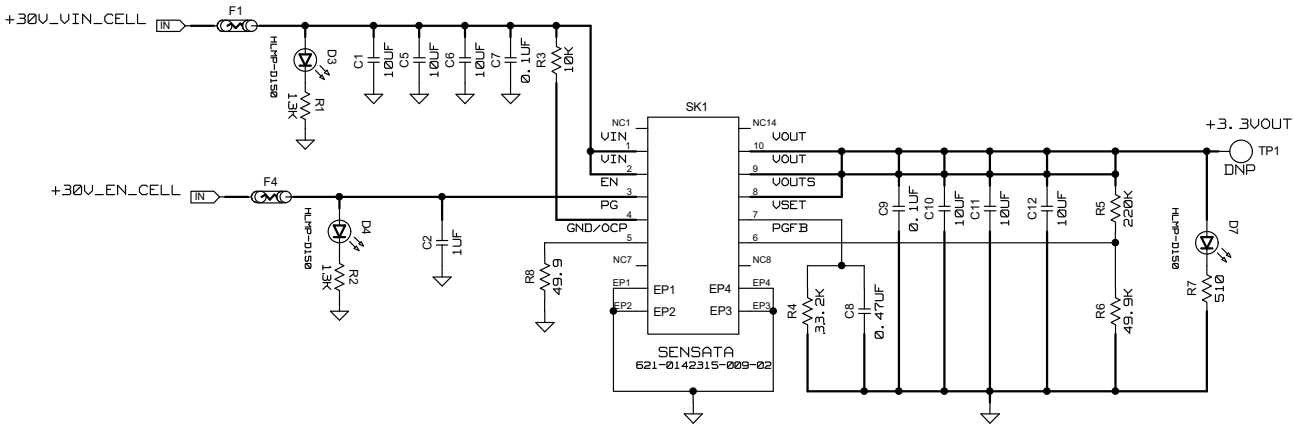

Figure 2. ISL75054SLH LDR Bias Configuration

1.3 Characterization Equipment and Procedures

All electrical testing was performed outside the irradiator using the production Automated Test Equipment (ATE) with data logging at each downpoint. Downpoint electrical testing was performed at room temperature.

1.4 Experimental Matrix

Irradiation was performed in accordance with the guidelines of MIL-STD-883 Test Method 1019. The experimental matrix consisted of twelve samples irradiated at LDR under bias and twelve samples irradiated at LDR with all pins grounded. Three control units were used.

The ISL75054SLH samples were drawn from wafer lots F6X200.1. All samples were package in the standard 10 Ld hermetically sealed ceramic flatpack package.

1.5 Downpoints

The planned irradiation downpoints for the LDR test were 0krad(Si), 10krad(Si), 30krad(Si), 50krad(Si), 75krad(Si), and 100krad(Si). The LDR irradiations were followed by a 168-hour high temperature anneal at 100°C under bias.

2. Results

LDR TID testing of the ISL75054SLHMF is complete. All tested parameters passed the datasheet limits. Table 2 summarizes the results.

Table 2. ISL75054SLHMF Attributes Data

Dose Rate (rad(Si)/s)	Condition	Sample Size	Downpoint	Pass[1]	Fail
0.01	Biased (Figure 2)	12	Pre-irradiation	12	0
			10krad(Si)	12	0
			30krad(Si)	12	0
			50krad(Si)	12	0
			75krad(Si)	12	0
			100krad(Si)	12	0
			Anneal	12	0
0.01	Grounded	12	Pre-irradiation	12	0
			10krad(Si)	12	0
			30krad(Si)	12	0
			50krad(Si)	12	0
			75krad(Si)	12	0
			100krad(Si)	12	0
			Anneal	12	0

1. A Pass indicates a sample that passes all datasheet limits.

2.1 Variables Data

The plots in Figure 3 through Figure 40 illustrate the LDR response of the selected parameters shown in Table 3 in the Appendix. The plots show the average tested values of the parameters as a function of total dose for each of the irradiation conditions, biased and grounded. The plots also include error bars at each down-point, representing the minimum and maximum measured values of the samples, although in some plots the error bars might not be visible due to their values compared to the scale of the graph.

All samples passed the datasheet limits after irradiation to each level up to 100krad(Si) and the subsequent anneal.

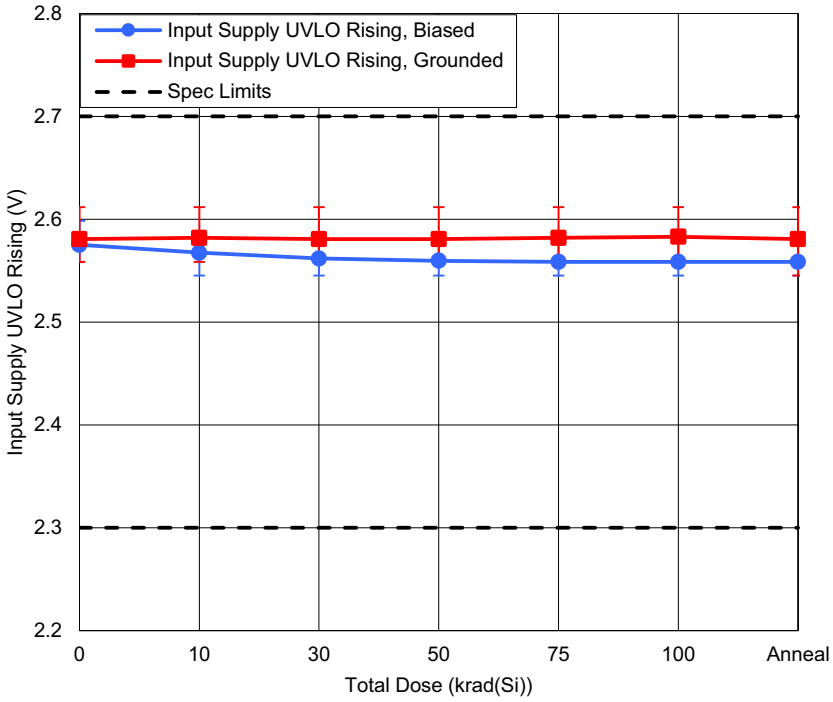

Figure 3. ISL75054SLHMF Input Supply UVLO Rising as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 2.3 and a maximum of 2.7V.

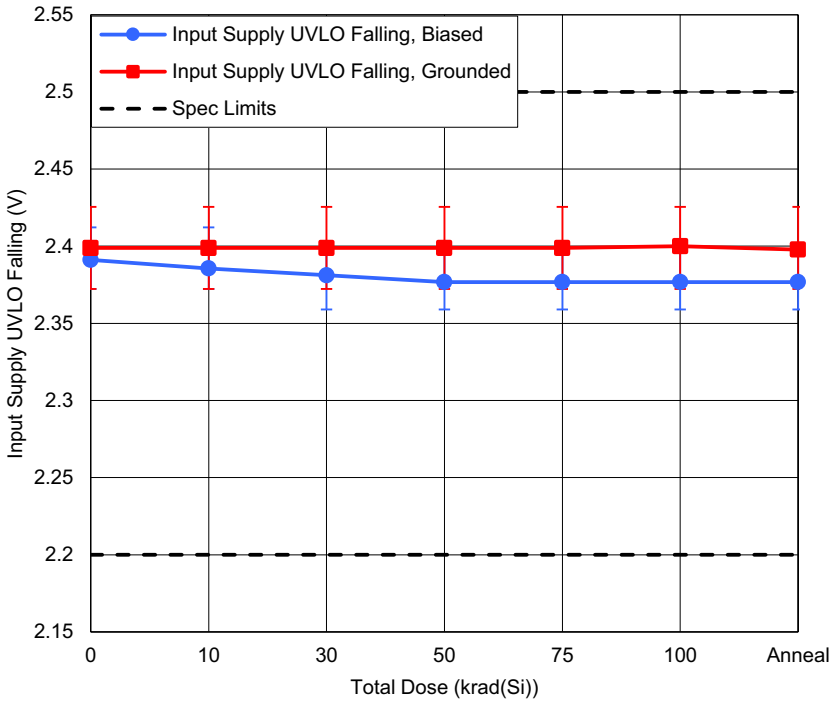

Figure 4. ISL75054SLHMF Input Supply UVLO Falling as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 2.2V and a maximum of 2.5V.

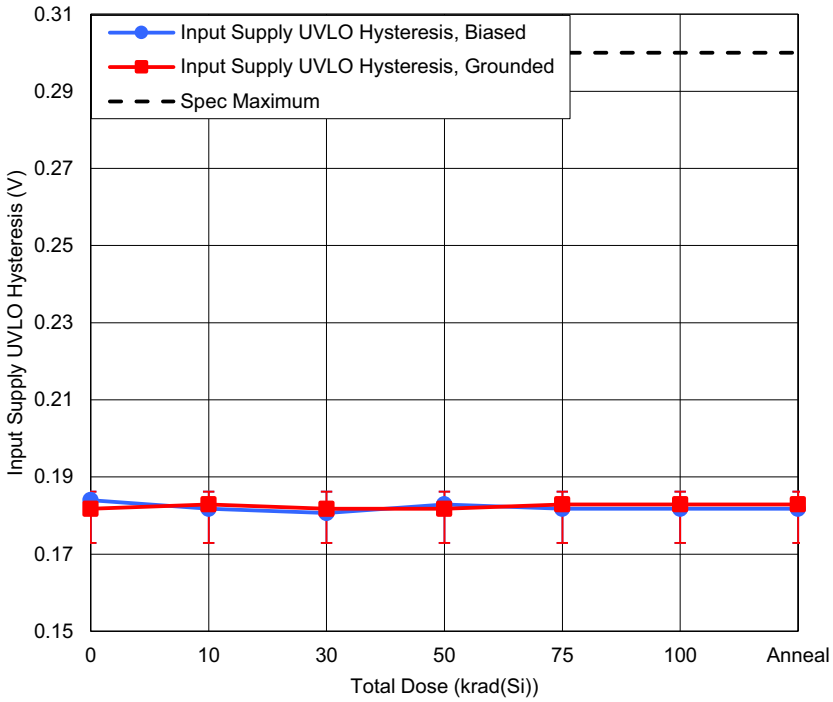

Figure 5. ISL75054SLHMF Input Supply UVLO Hysteresis as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 0.3V.

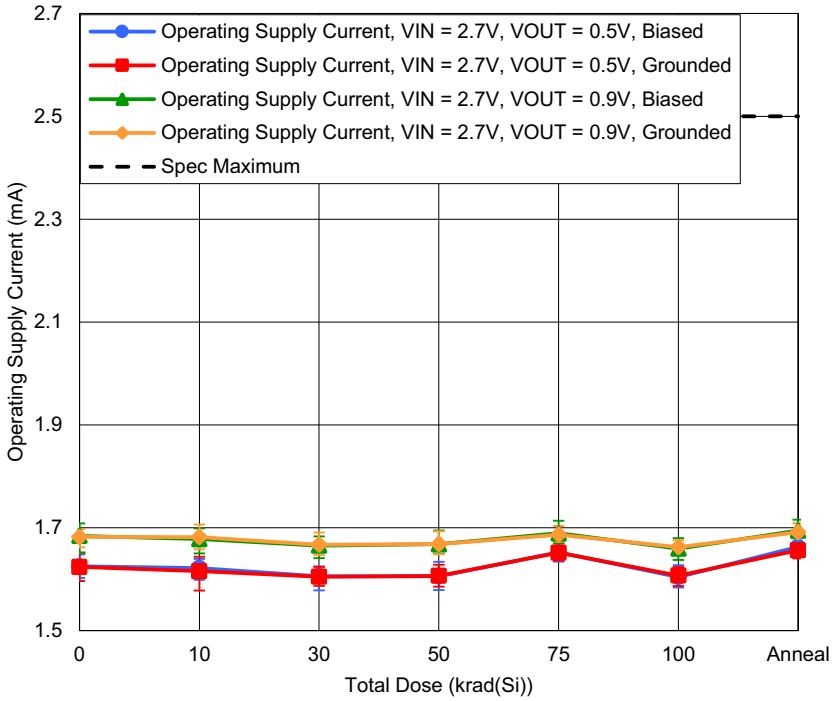

Figure 6. ISL75054SLHMF Operating Supply Current with V_{IN} = 2.7V, V_{OUT} = 0.5V or 0.9V, and I_{OUT} = 0A as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 2.5mA.

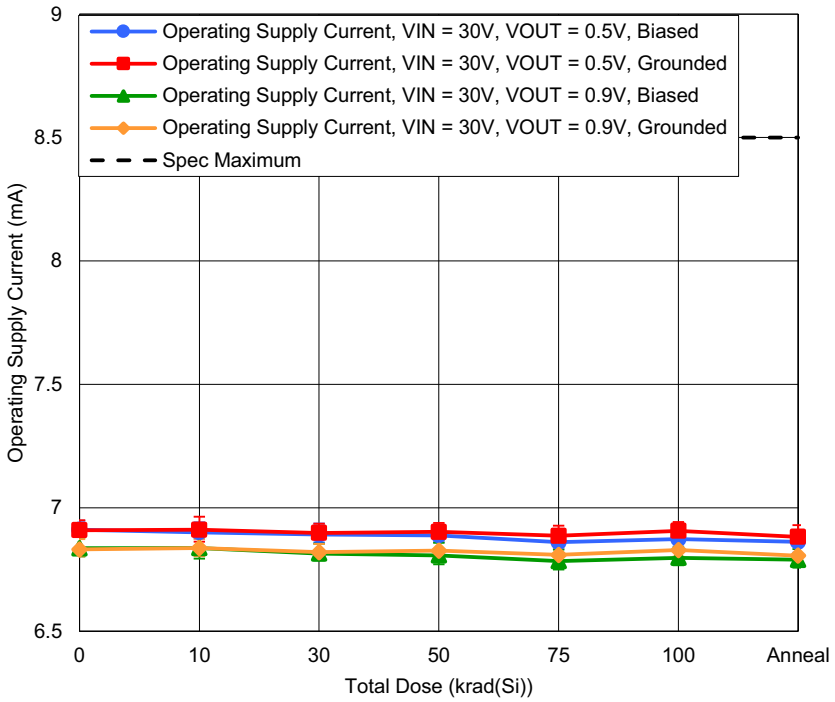

Figure 7. ISL75054SLHMF Operating Supply Current with V_{IN} = 30V, V_{OUT} = 0.5V or 0.9V, and I_{OUT} = 0A as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 8.5mA.

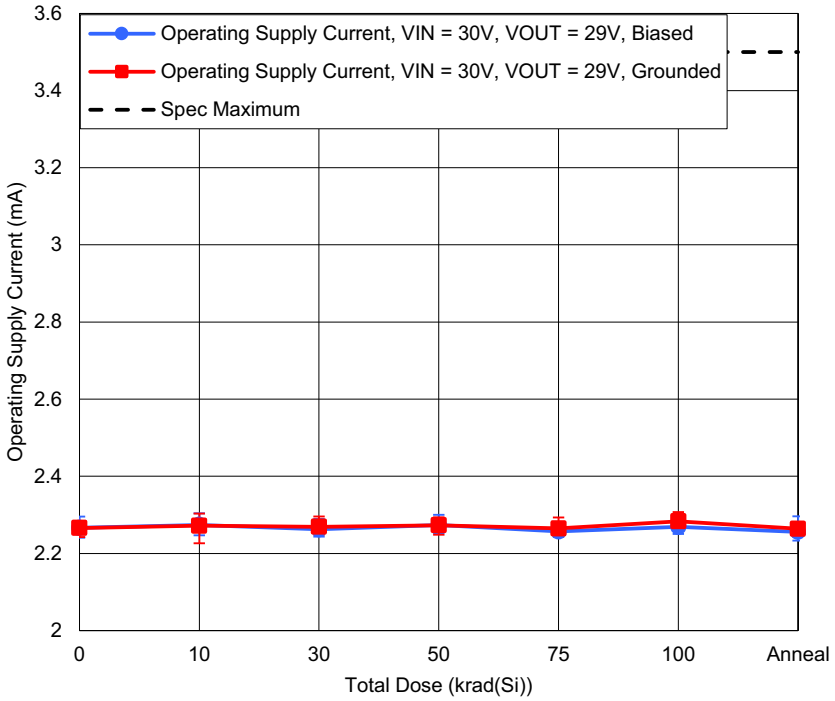

Figure 8. ISL75054SLHMF Operating Supply Current with V_{IN} = 30V, V_{OUT} = 29V, and I_{OUT} = 0A as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 3.5mA.

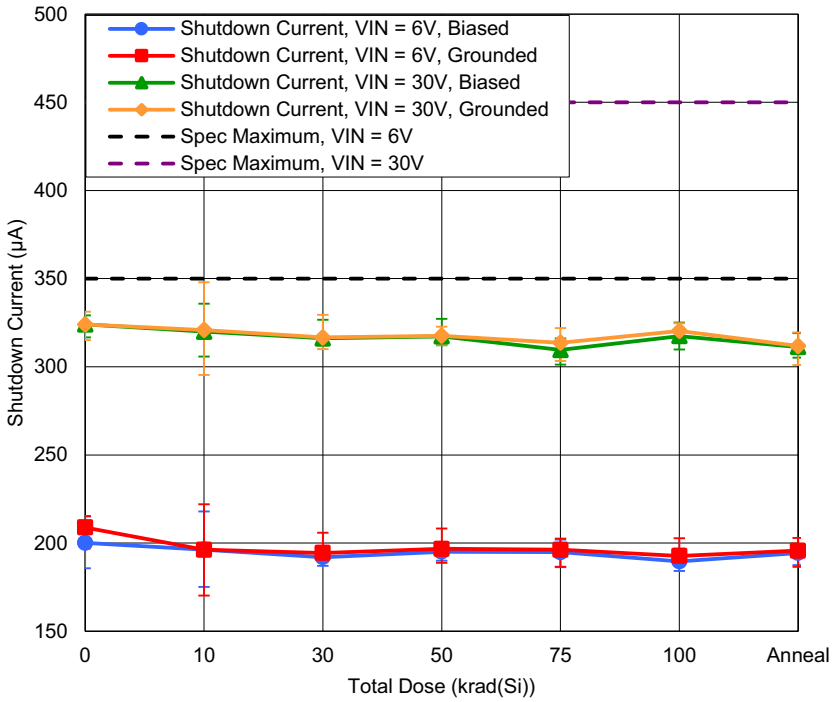

Figure 9. ISL75054SLHMF Shutdown Current with EN = 0V and V_{IN} = 6V or 30V as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a maximum of 350µA when V_{IN} = 6V and a maximum of 450µA when V_{IN} = 30V.

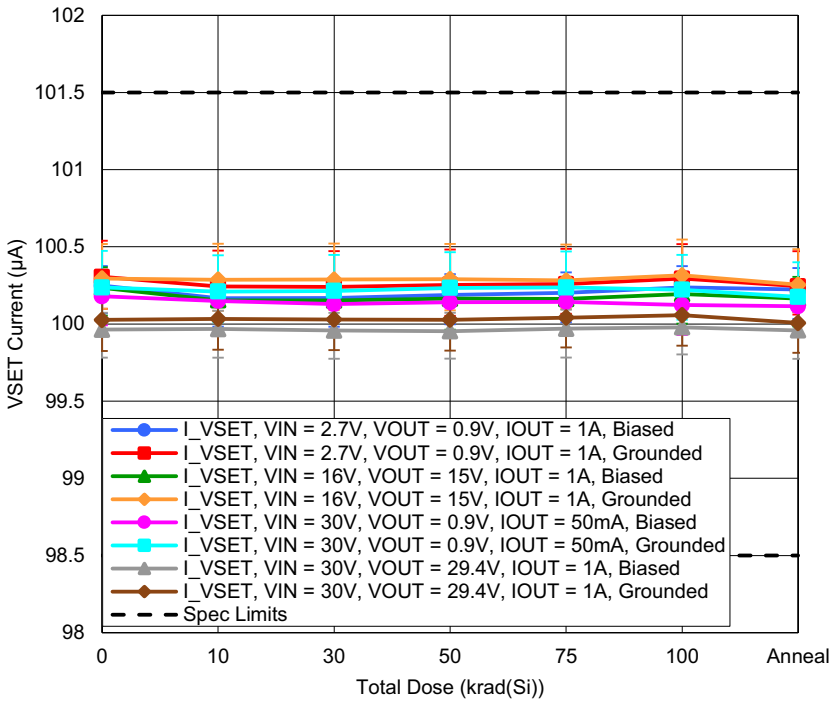

Figure 10. ISL75054SLHMF V_{SET} Current with V_{IN} = 2.7V, 16V, or 30V, V_{OUT} = 0.9V, 15V, or 29.4V, and I_{OUT} = 1A as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 98.5µA and a maximum of 101.5µA.

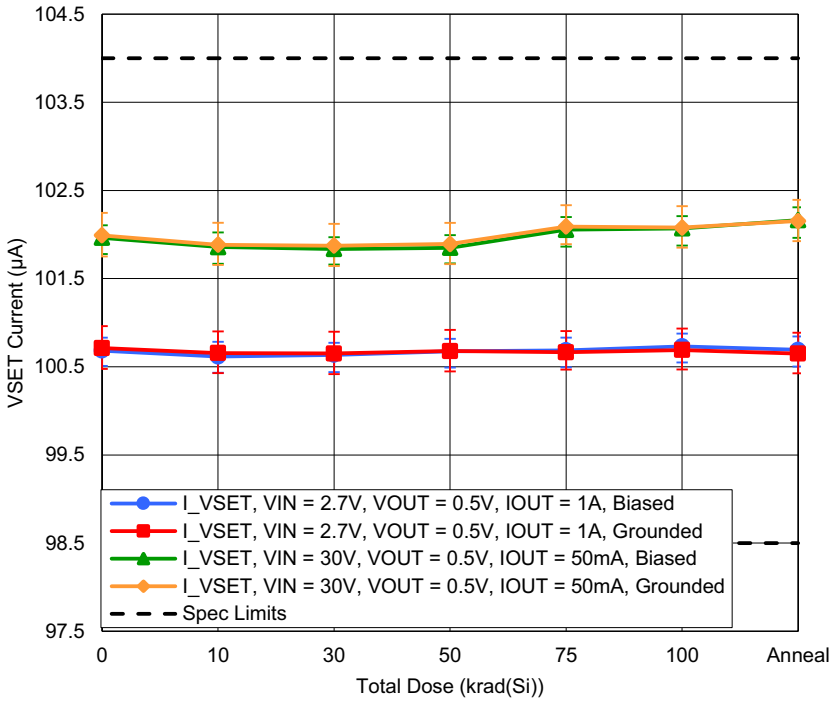

Figure 11. ISL75054SLHMF V_{SET} Current with V_{IN} = 2.7V or 30V, V_{OUT} = 0.5V, and I_{OUT} = 50mA or 1A as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 98.5µA and a maximum of 104µA.

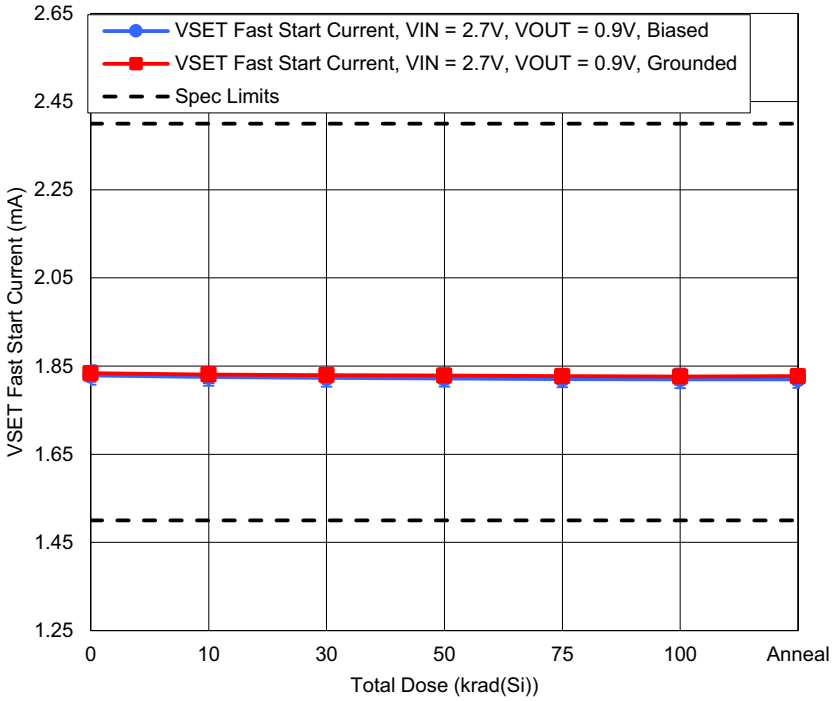

Figure 12. ISL75054SLHMF V_{SET} Fast Start Current as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 1.5mA and a maximum of 2.4mA.

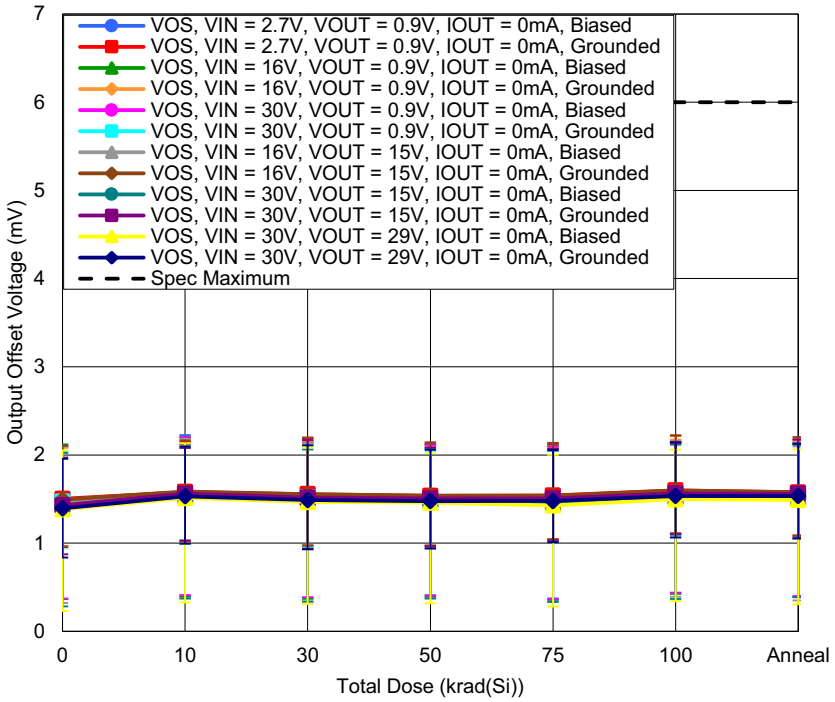

Figure 13. ISL75054SLHMF Output Offset Voltage with V_{IN} = 2.7V, 16V, or 30V, V_{OUT} = 0.9V, 15V, or 29V, and I_{OUT} = 0mA as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 6mV.

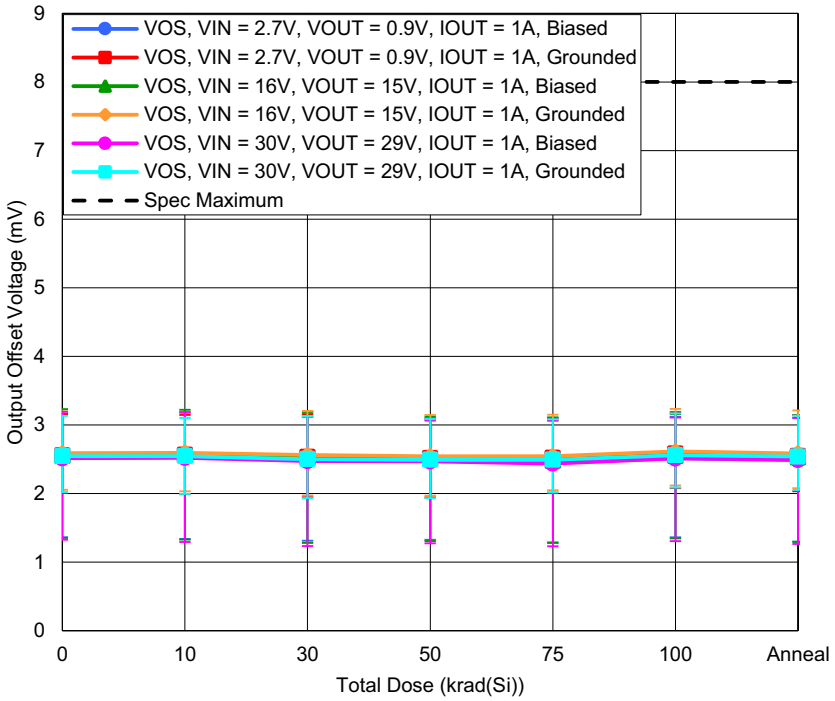

Figure 14. ISL75054SLHMF Output Offset Voltage with V_{IN} = 2.7V, 16V, or 30V, V_{OUT} = 0.9V, 15V, or 29V, and I_{OUT} = 1A as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 8mV.

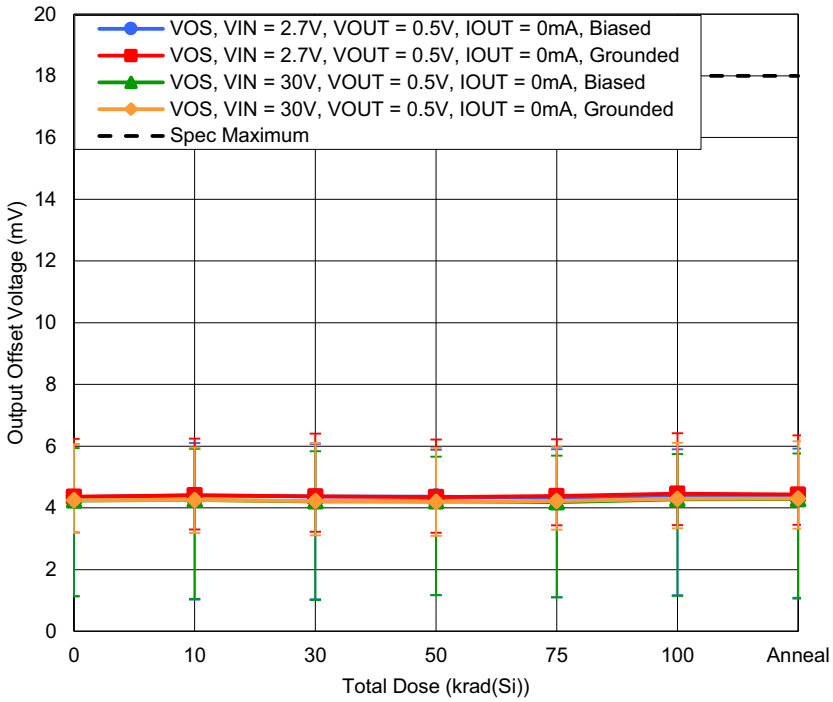

Figure 15. ISL75054SLHMF Output Offset Voltage with V_{IN} = 2.7V or 30V, V_{OUT} = 0.5V, and I_{OUT} = 0mA as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 18mV

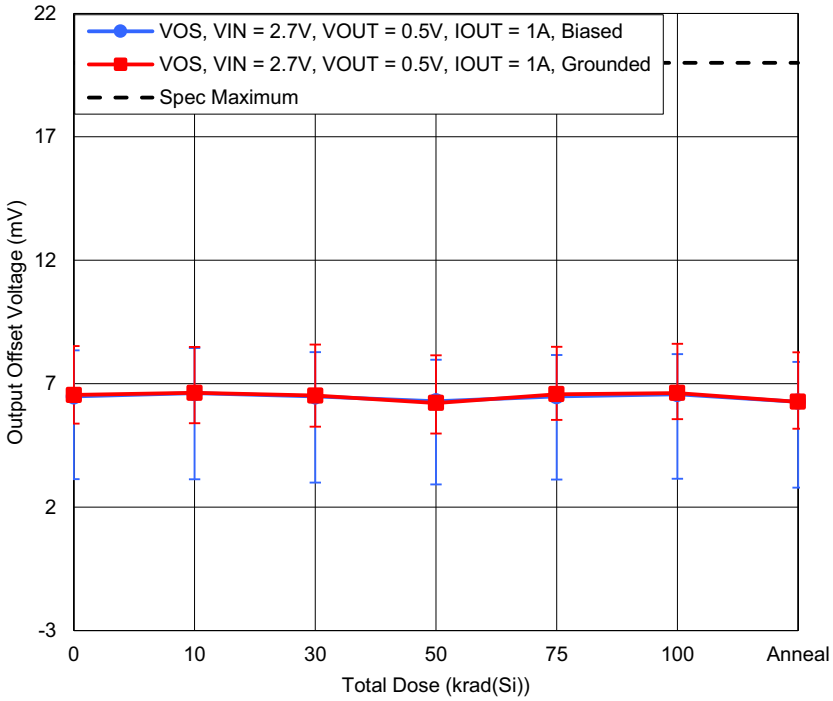

Figure 16. ISL75054SLHMF Output Offset Voltage with V_{IN} = 2.7V, V_{OUT} = 0.5V, and I_{OUT} = 1A as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 20mV.

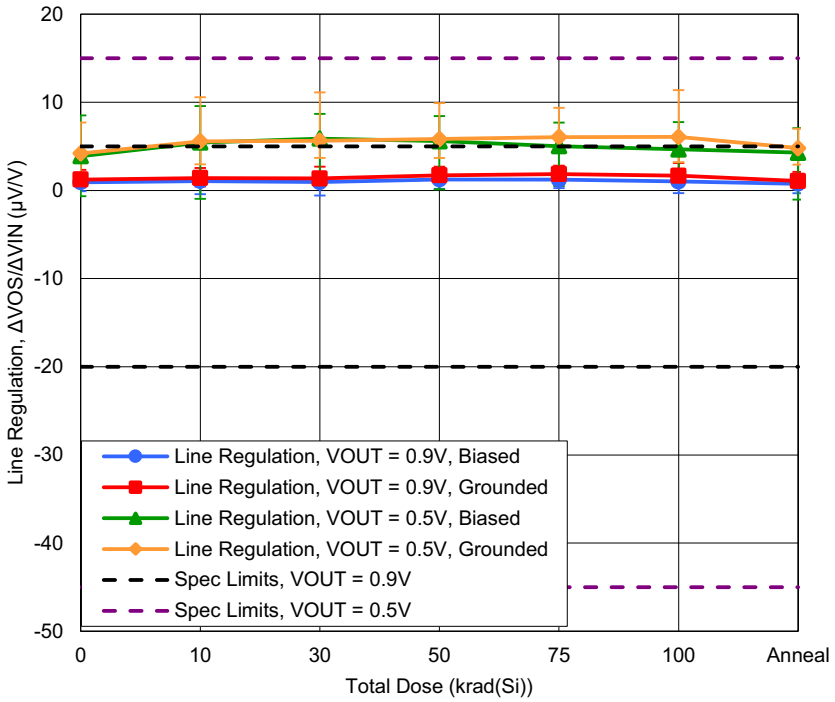

Figure 17. ISL75054SLHMF Line Regulation, $\Delta V_{OS}/\Delta V_{IN}$, with V_{OUT} = 0.5V or 0.9V, and I_{OUT} = 1mA as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of -20µV/V and a maximum of 5µV/V when V_{OUT} = 0.9V and a minimum of -45µV/V and a maximum of 15µV/V when V_{OUT} = 0.5V.

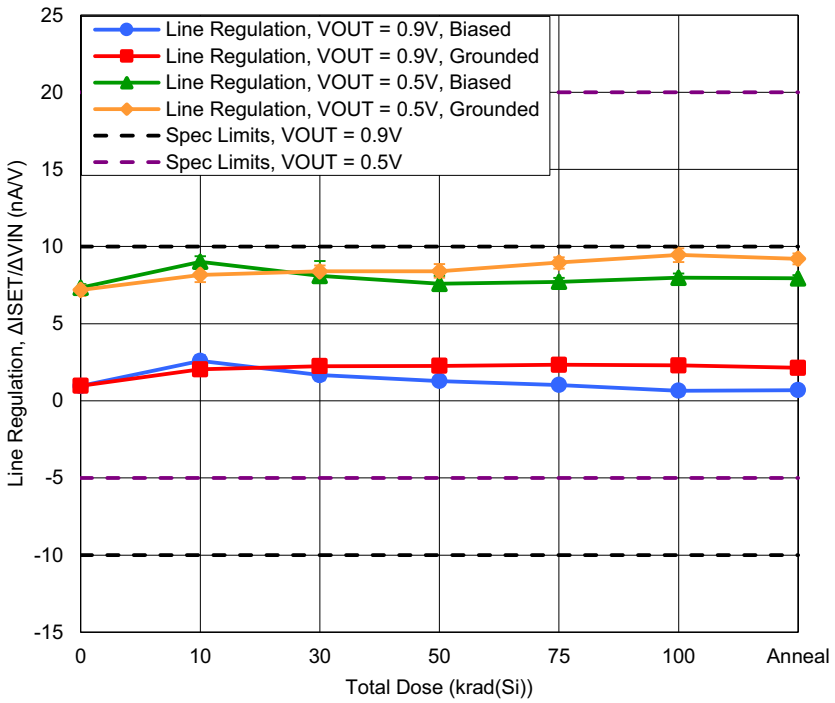

Figure 18. ISL75054SLHMF Line Regulation, $\Delta I_{SET}/\Delta V_{IN}$, with V_{OUT} = 0.5V or 0.9V, and I_{OUT} = 1mA as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of -10nA/V and a maximum of 10nA/V when V_{OUT} = 0.9V and a minimum of -5nA/V and a maximum of 20nA/V when V_{OUT} = 0.5V.

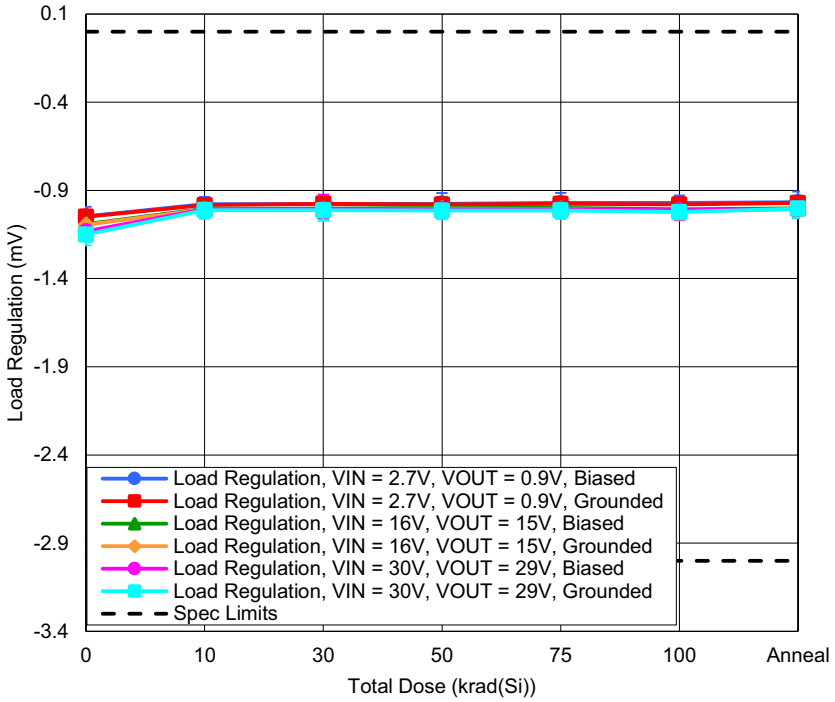

Figure 19. ISL75054SLHMF Load Regulation with V_{IN} = 2.7V, 16V or 30V, V_{OUT} = 0.9V, 15V or 29V, and I_{OUT} = 0mA to 1A as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of -3mV and a maximum of 0mV.

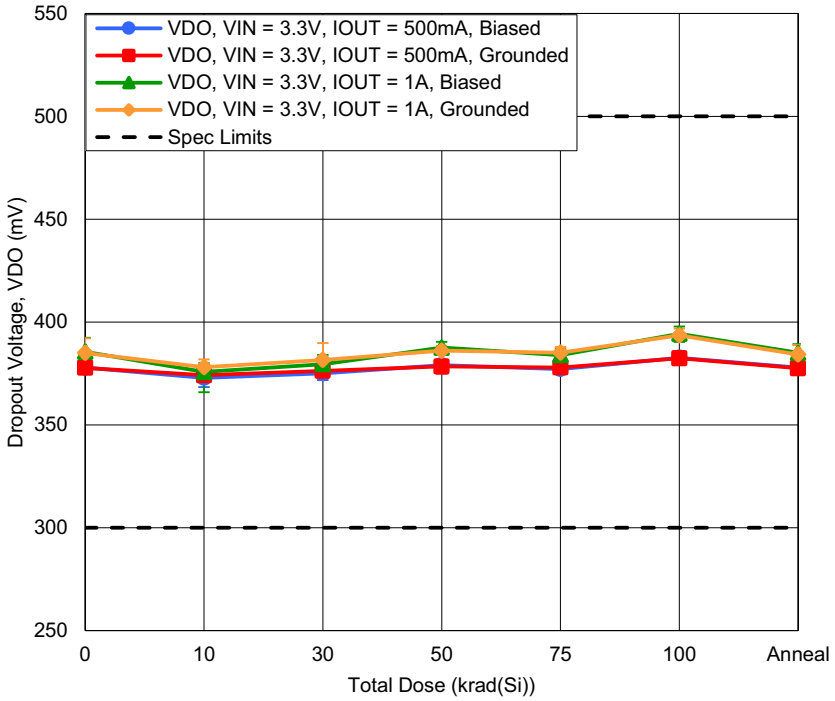

Figure 20. ISL75054SLHMF Dropout Voltage, V_{DO}, with V_{IN} = 3.3V and I_{OUT} = 500mA or 1A as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 300mV and a maximum of 500mV.

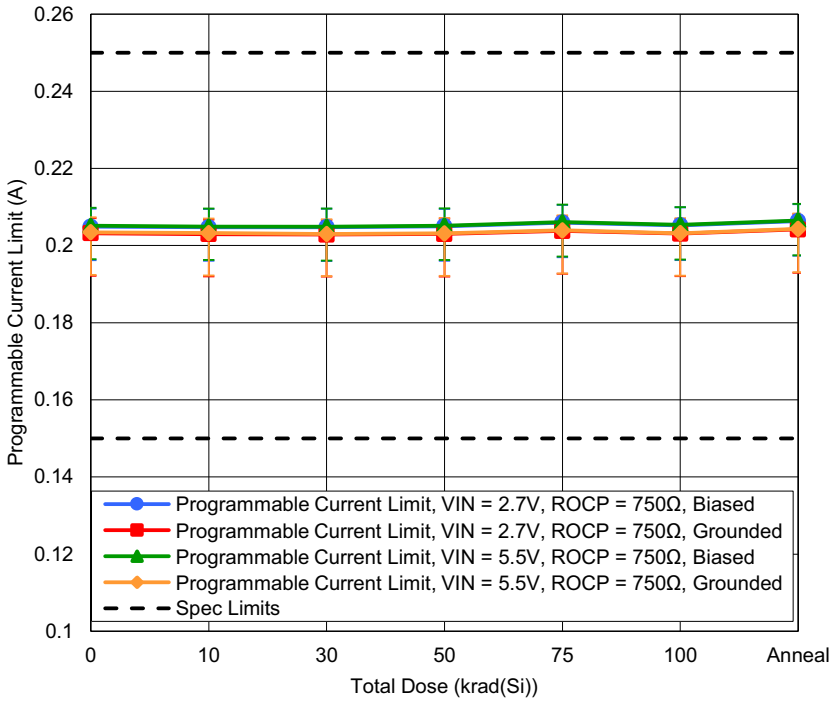

Figure 21. ISL75054SLHMF Programmable Current Limit with V_{IN} = 2.7V or 5.5V and R_{ILIM} = 750Ω as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 0.15A and a maximum of 0.25A.

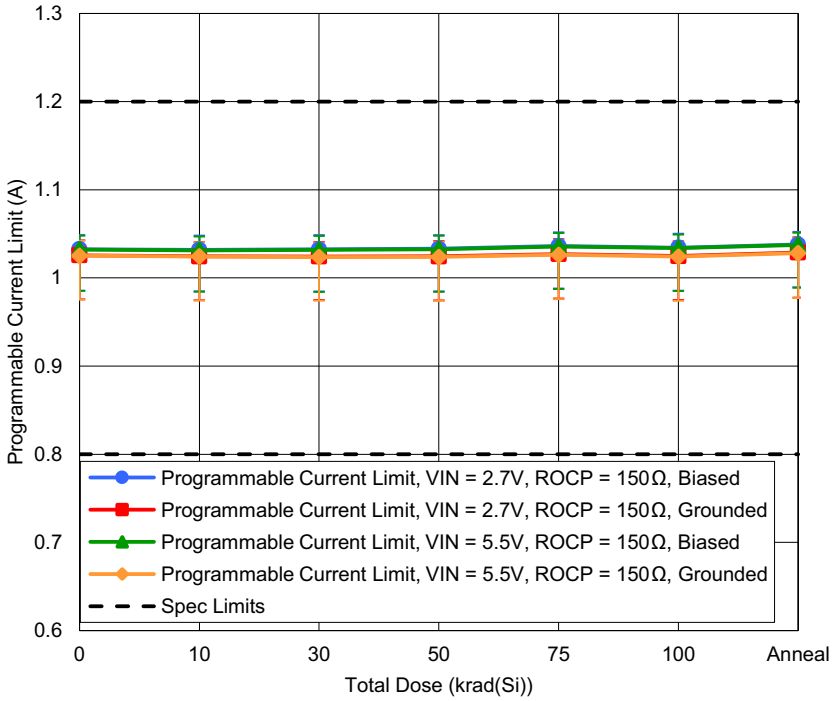

Figure 22. ISL75054SLHMF Programmable Current Limit with V_{IN} = 2.7V or 5.5V and R_{ILIM} = 150Ω as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 0.8A and a maximum of 1.2A.

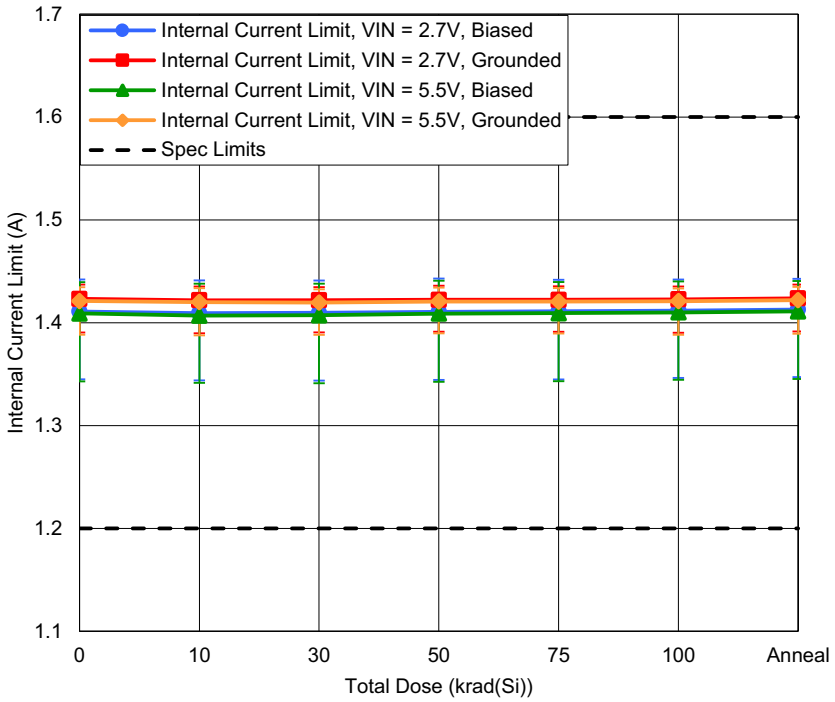

Figure 23. ISL75054SLHMF Internal Current Limit with V_{IN} = 2.7 or 5.5V and R_{OCP} = 0Ω as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 1.2A and a maximum of 1.6A.

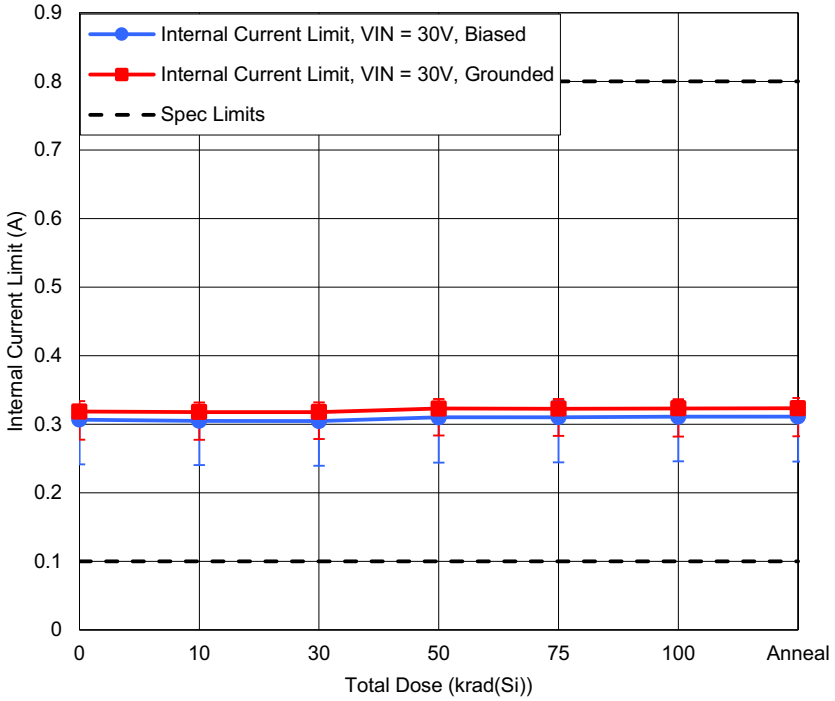

Figure 24. ISL75054SLHMF Internal Current Limit with V_{IN} = 30V and R_{OCP} = 0Ω as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 0.1A and a maximum of 0.8A.

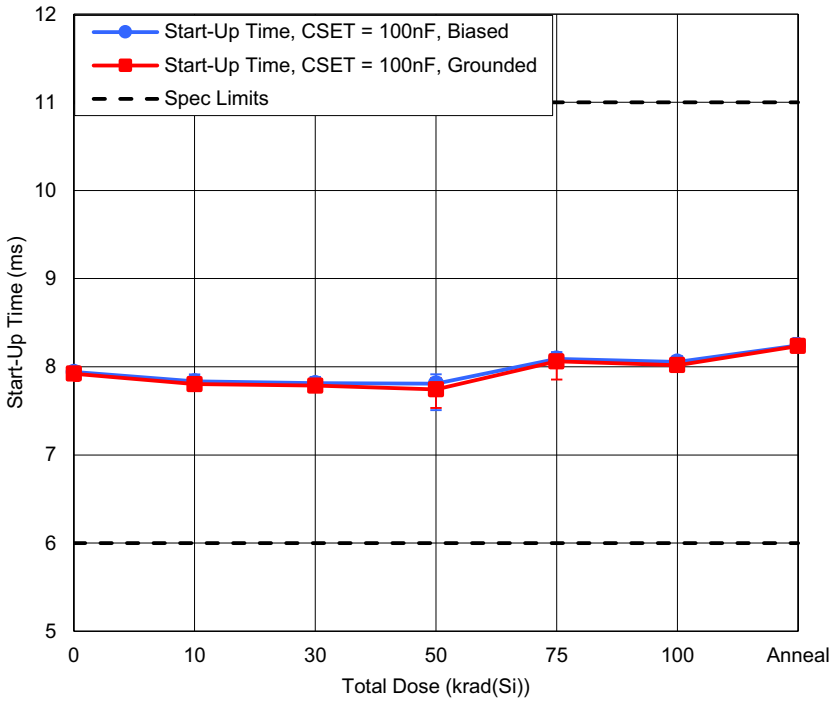

Figure 25. ISL75054SLHMF Start-Up Time with V_{IN} = 6V, V_{OUT} = 5V, C_{SET} = 100nF, I_{OUT} = 1A and Fast Start-Up disabled as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 6ms and a maximum of 11ms.

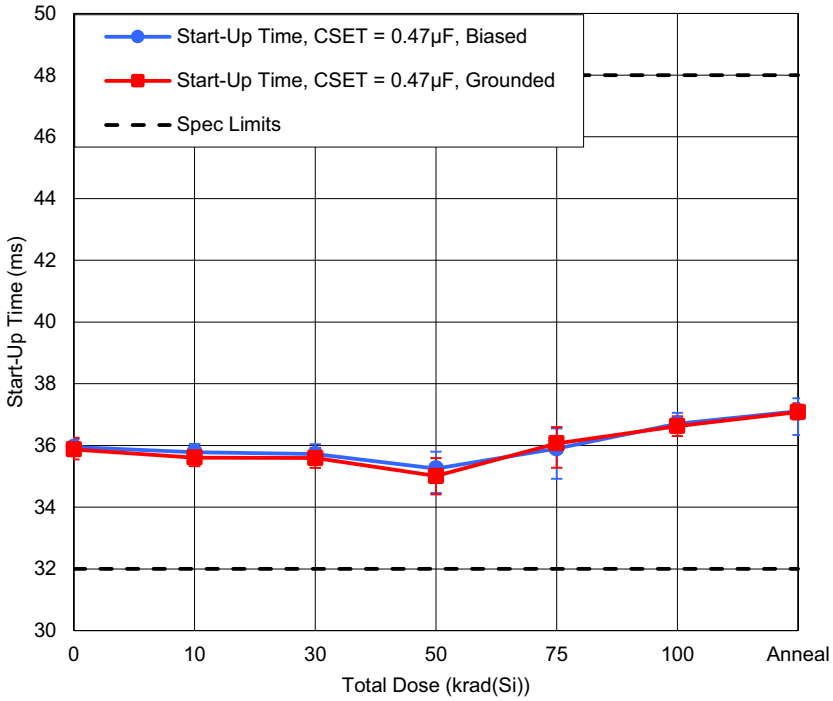

Figure 26. ISL75054SLHMF Start-Up Time with V_{IN} = 6V, V_{OUT} = 5V, C_{SET} = 0.47µF, I_{OUT} = 1A and Fast Start-Up disabled as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 32ms and a maximum of 48ms.

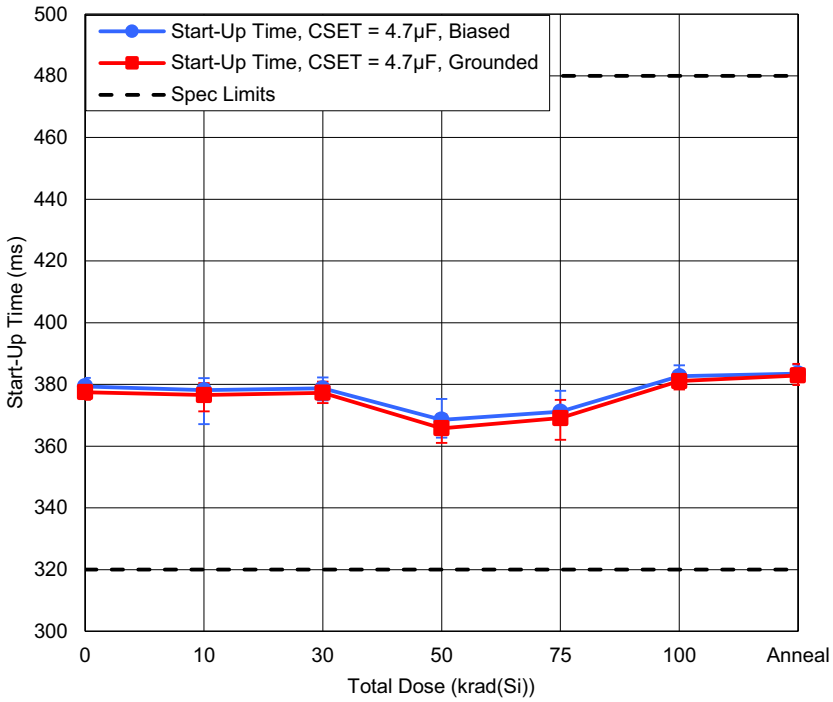

Figure 27. ISL75054SLHMF Start-Up Time with V_{IN} = 6V, V_{OUT} = 5V, C_{SET} = 4.7µF, I_{OUT} = 1A and Fast Start-Up disabled as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 320ms and a maximum of 480ms.

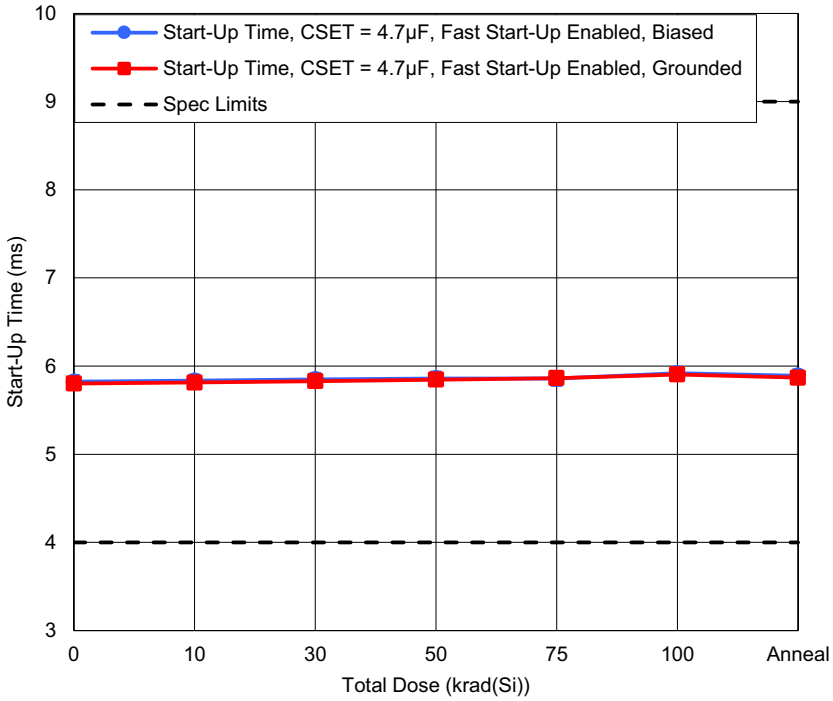

Figure 28. ISL75054SLHMF Start-Up Time with V_{IN} = 6V, V_{OUT} = 5V, C_{SET} = 4.7µF, I_{OUT} = 1A and Fast Start-Up enabled as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 4ms and a maximum of 9ms.

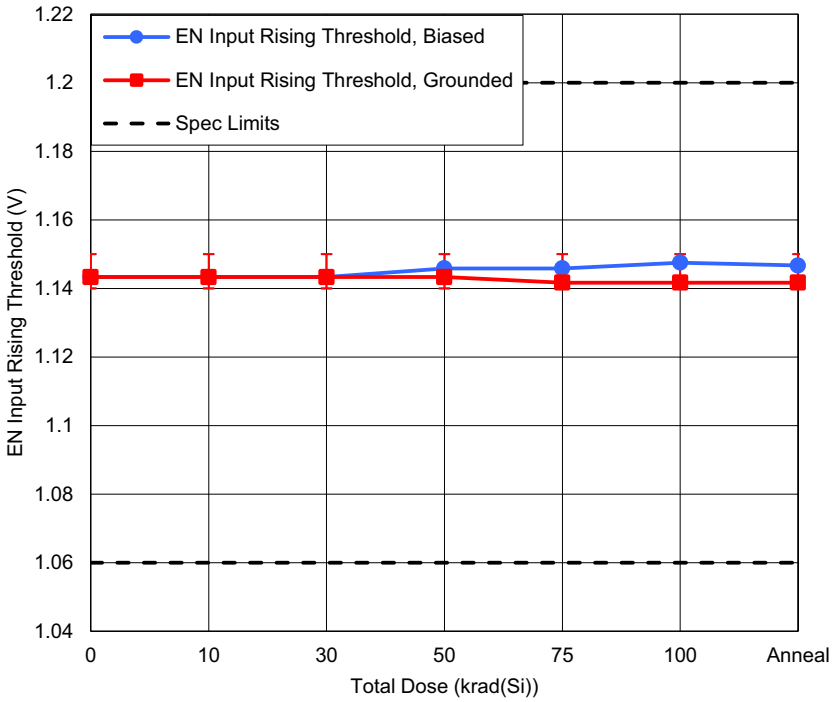

Figure 29. ISL75054SLHMF EN Input Rising Threshold as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a minimum of 1.06V and a maximum of 1.2V.

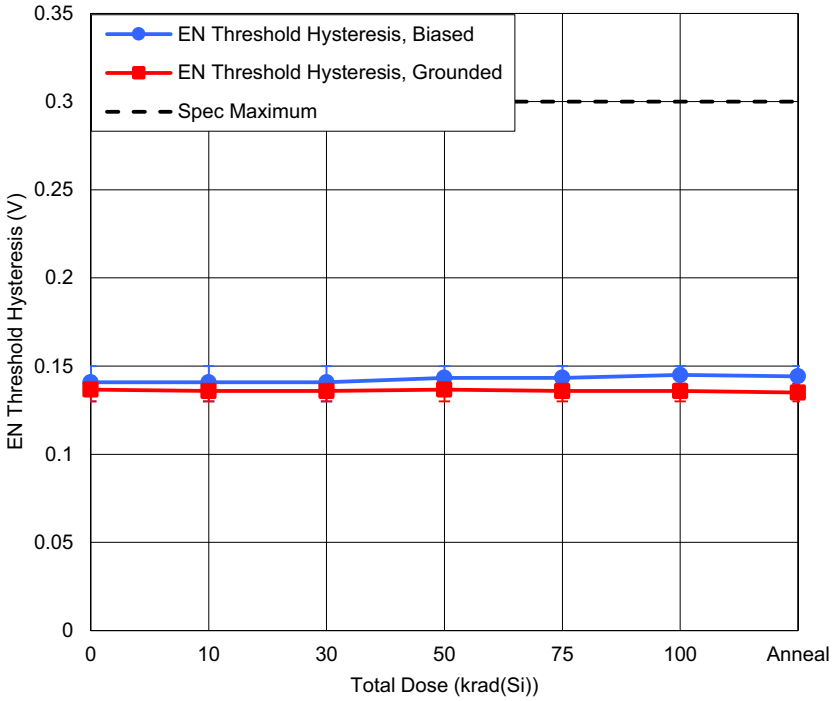

Figure 30. ISL75054SLHMF EN Threshold Hysteresis as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 0.3V.

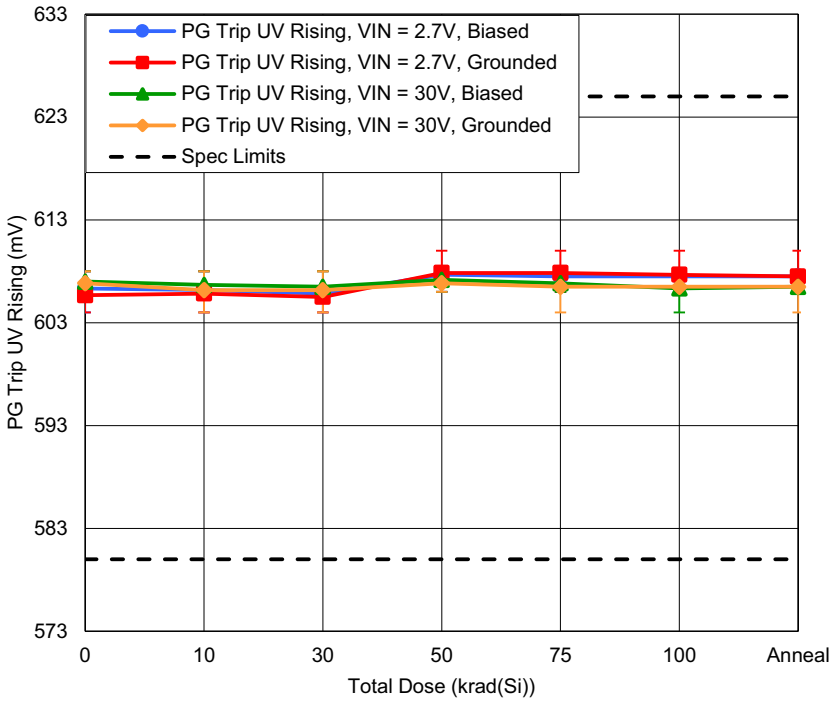

Figure 31. ISL75054SLHMF PG Trip UV Rising with V_{IN} = 2.7V or 30V as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 580mV and a maximum of 625mV.

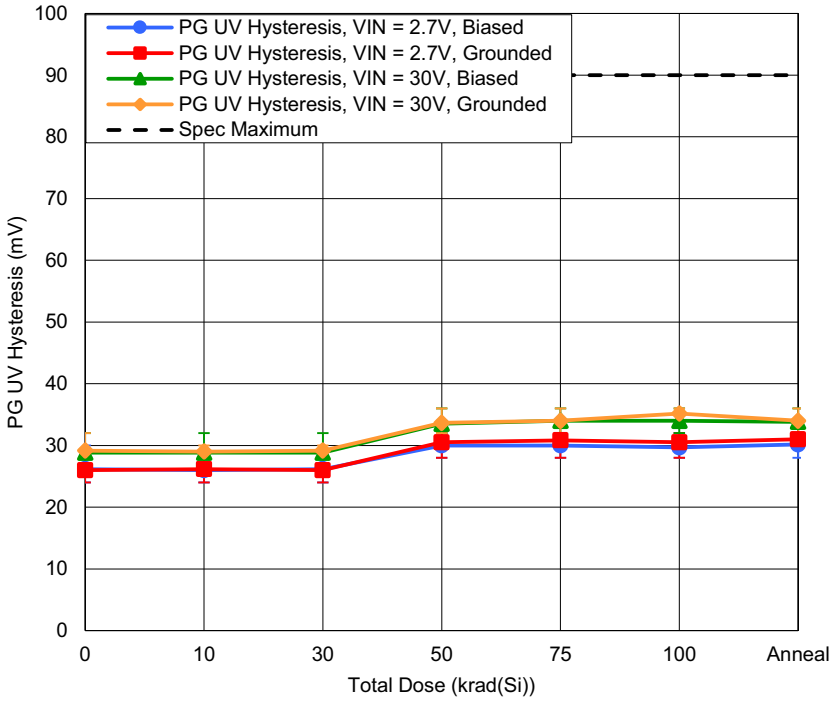

Figure 32. ISL75054SLHMF PG UV Hysteresis with V_{IN} = 2.7V or 30V as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 90mV.

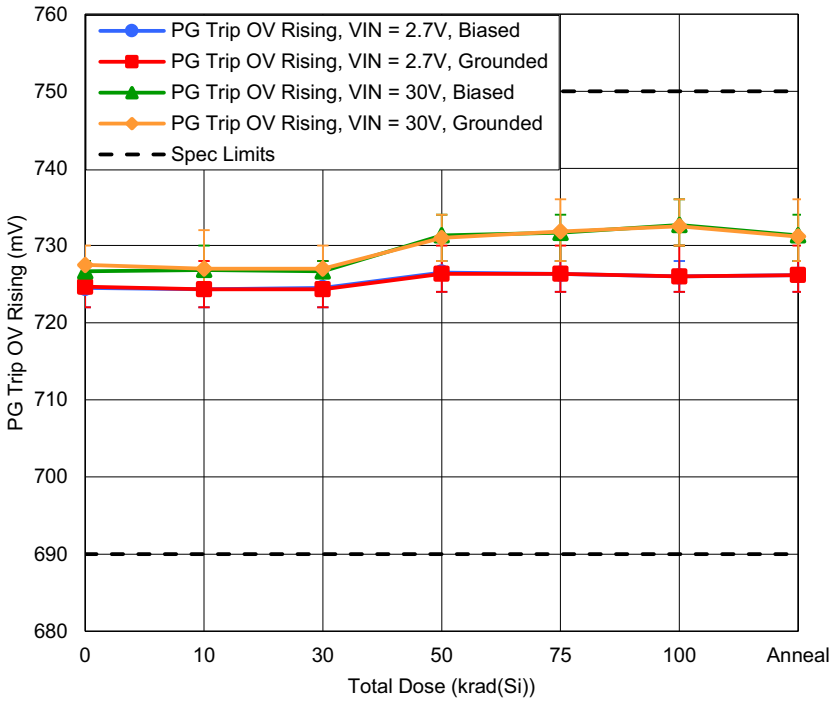

Figure 33. ISL75054SLHMF PG Trip OV Rising with V_{IN} = 2.7V or 30V as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 690mV and a maximum of 750mV.

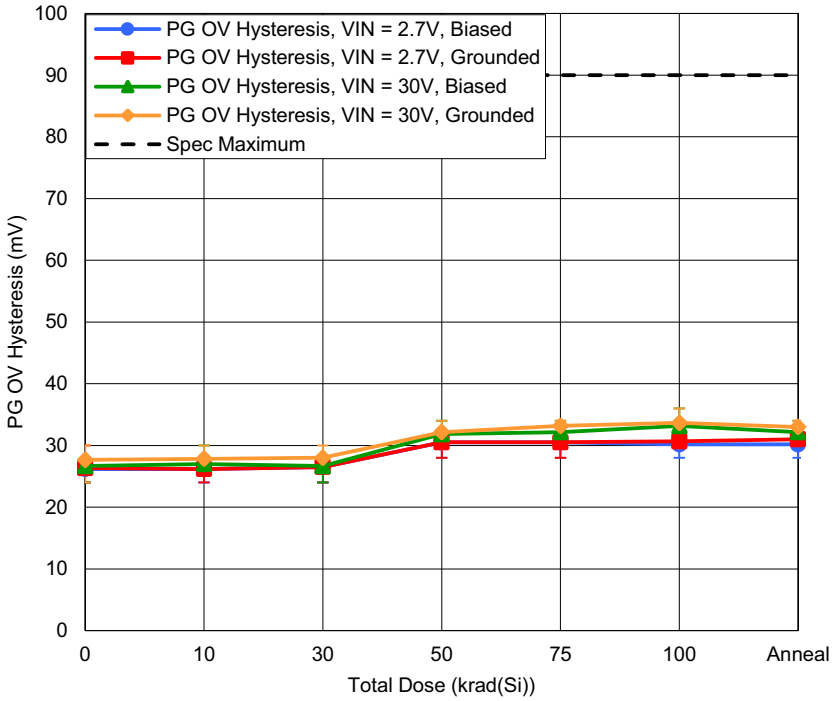

Figure 34. ISL75054SLHMF PG OV Hysteresis with V_{IN} = 2.7V or 30V as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 90mV.

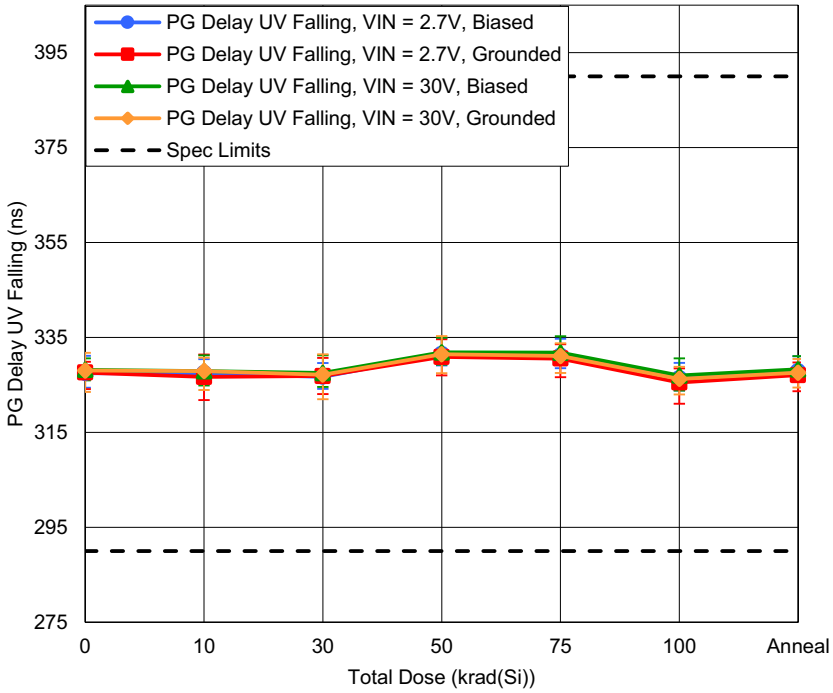

Figure 35. ISL75054SLHMF PG Delay UV Falling with V_{IN} = 2.7V or 30V and R_{PULLUP} = 100kΩ as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 290ns and a maximum of 390ns.

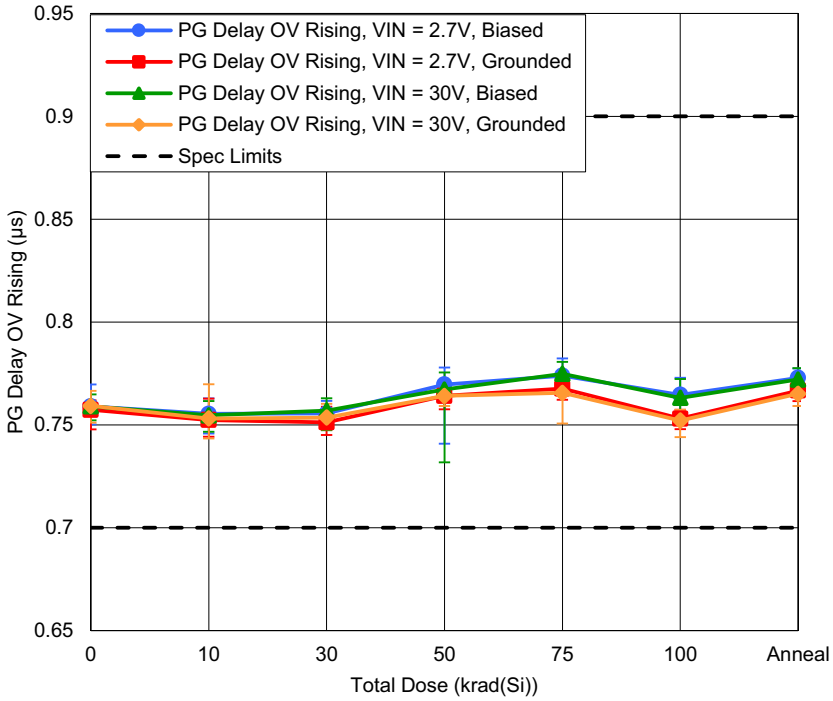

Figure 36. ISL75054SLHMF PG Delay OV Rising with V_{IN} = 2.7V or 30V and R_{PULLUP} = 100kΩ as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 0.7µs and a maximum of 0.9µs.

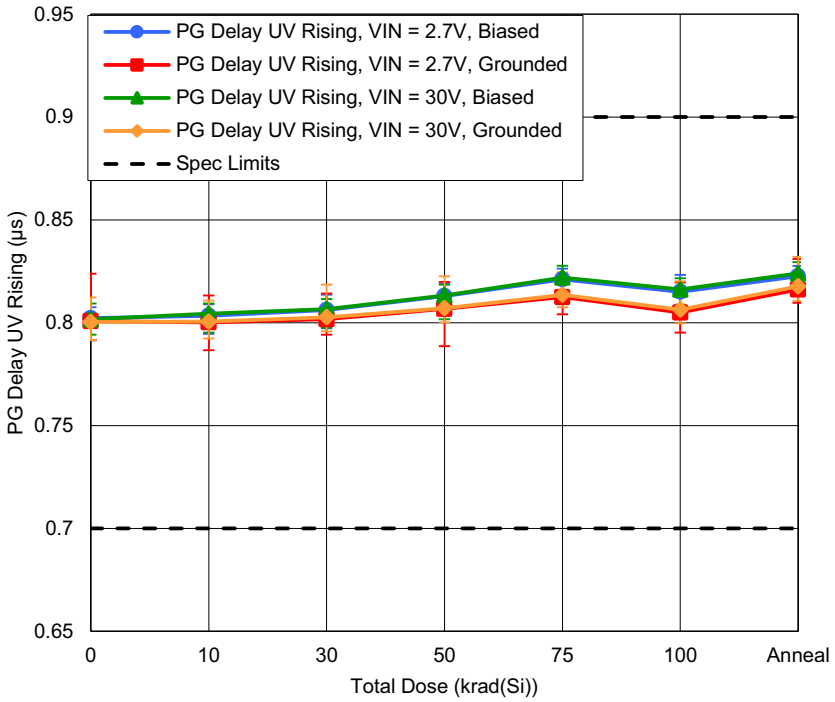

Figure 37. ISL75054SLHMF PG Delay UV Rising with V_{IN} = 2.7V or 30V and R_{PULLUP} = 100kΩ as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 0.7µs and a maximum of 0.9µs.

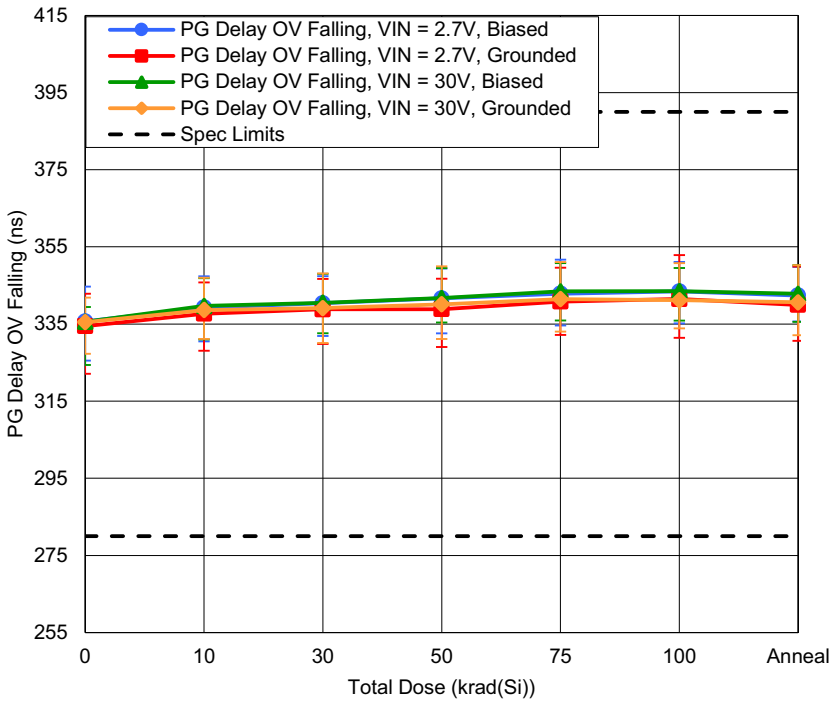

Figure 38. ISL75054SLHMF PG Delay OV Falling with V_{IN} = 2.7V or 30V and R_{PULLUP} = 100kΩ as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limits are a minimum of 280ns and a maximum of 390ns.

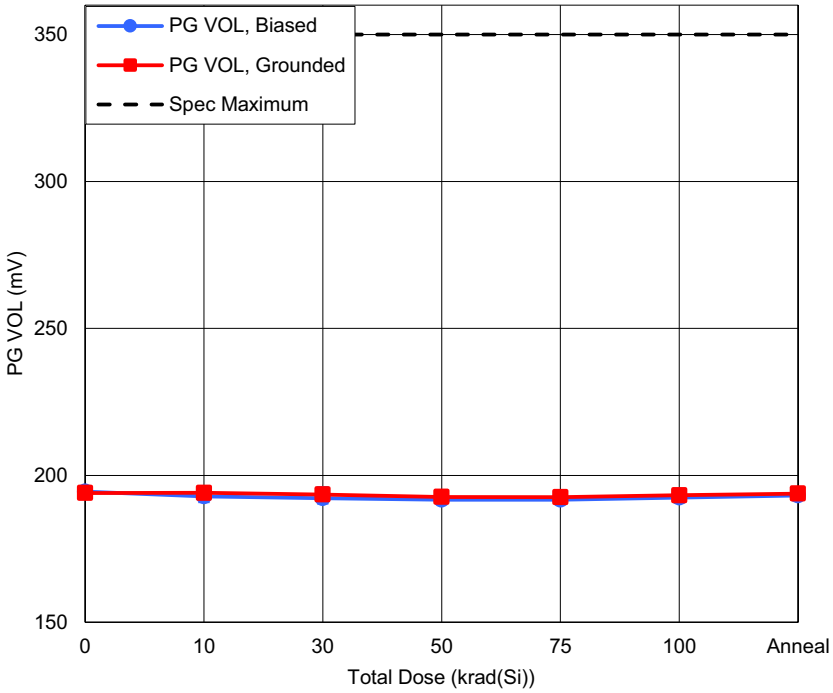

Figure 39. ISL75054SLHMF PG VOL as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 350mV.

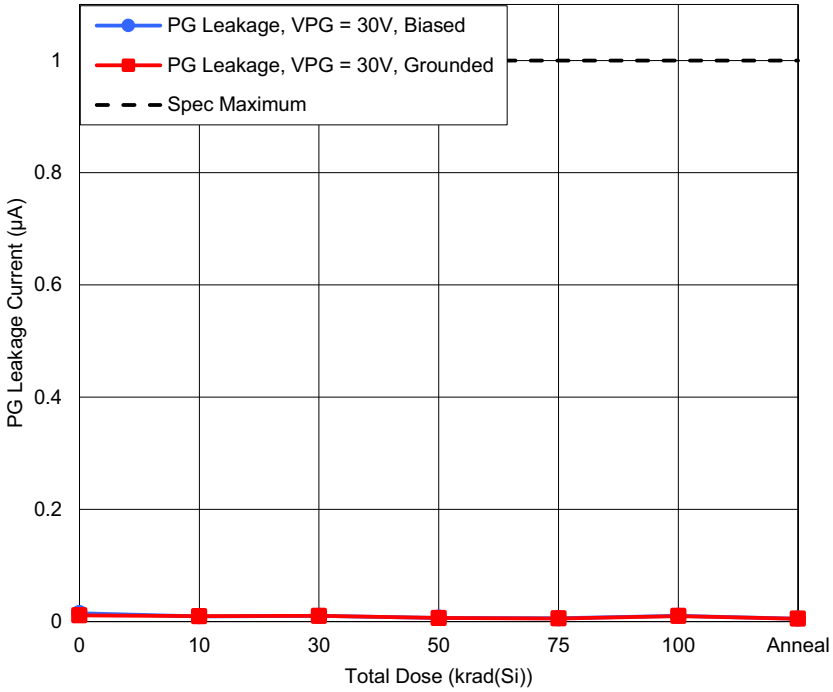

Figure 40. ISL75054SLHMF PG Leakage as a function of LDR irradiation for biased and grounded configurations. The error bars (if visible) represent the minimum and maximum measured values. The datasheet limit is a maximum of 1µA.

3. Discussion and Conclusion

This document reports the results of the LDR TID test of the ISL75054SLHMF radiation hardened ultra low noise LDO. The irradiation of biased and grounded samples to 100krad(Si) at a LDR of 0.01rad(Si)/s was followed by a 168-hour anneal at 100°C under bias. All datasheet parameters passed at all downpoints. No evidence of bias dependence was observed.

4. Revision History

Revision	Date	Description
1.00	Aug 6, 2025	Initial release.

A. Datasheet Parameters

Table 3 lists the datasheet parameters that are considered indicative of part performance. These parameters are plotted in Figure 3 through Figure 40. All limits are taken from the ISL75054SLH datasheet, which may also have more details on test conditions.

Table 3. ISL75054SLH Datasheet Total Dose Parameters (T_A = 25°C)

Fig.	Parameter	Test Conditions	Min	Max	Unit
3	Input Supply UVLO Rising	V_{IN} UVLO Rising	2.3	2.7	V
4	Input Supply UVLO Falling	V_{IN} UVLO Falling	2.2	2.5	V
5	Input Supply UVLO Hysteresis	V_{IN} UVLO Hysteresis	-	0.3	V
6	Operating Supply Current	V_{IN} = 2.7V, V_{OUT} = 0.5V, I_{OUT} = 0A	-	2.5	mA
		V_{IN} = 2.7V, V_{OUT} = 0.9V, I_{OUT} = 0A			
7		V_{IN} = 30V, V_{OUT} = 0.5V, I_{OUT} = 0A	-	8.5	
		V_{IN} = 30V, V_{OUT} = 0.9V, I_{OUT} = 0A			
8		V_{IN} = 30V, V_{OUT} = 29V, I_{OUT} = 0A	-	3.5	
9	Shutdown Current	EN = 0V; V_{IN} = 6V	-	350	µA
		EN = 0V; V_{IN} = 30V	-	450	
10	V_{SET} Current	V_{IN} = 2.7V, 16V, 30V; V_{OUT} = 0.9V, 15V, 29.4V; I_{OUT} =1A	98.5	101.5	µA
11		V_{IN} = 2.7V, 30V; V_{OUT} = 0.5; I_{OUT} = 50mA, 1A	98.5	104	µA
12	V_{SET} Fast Start Current	V_{IN} = 2.7V; V_{SET} = 0.9V; V_{PGFB} = 600mV	1.5	2.4	mA
13	Output Offset Voltage	V_{IN} = 2.7V, 16V, 30V; V_{OUT} = 0.9V, 15V, 29V; I_{OUT} = 0mA	-	6	mV
14		V_{IN} = 2.7V, 16V, 30V; V_{OUT} = 0.9V, 15V, 29V; I_{OUT} = 1A	-	8	mV
15		V_{IN} = 2.7V, 30V; V_{OUT} = 0.5; I_{OUT} = 0mA	-	18	mV
16		V_{IN} = 2.7V; V_{OUT} = 0.5; I_{OUT} = 1A	-	20	mV
17	Line Regulation, $\Delta V_{OS}/\Delta V_{IN}$	V_{OUT} = 0.9V; I_{OUT} = 1mA	-20	5	µV/V
		V_{OUT} = 0.5V; I_{OUT} = 1mA	-45	15	µV/V
18	Line Regulation, $\Delta I_{SET}/\Delta V_{IN}$	V_{OUT} = 0.9V; I_{OUT} = 1mA	-10	10	nA/V
		V_{OUT} = 0.5V; I_{OUT} = 1mA	-5	20	nA/V
19	Load Regulation ΔV_{OUT}	V_{IN} = 2.7V, 16V, 30V; V_{OUT} = 0.9V, 15V, 29V; I_{OUT} = 0mA to 1A	-3	0	mV
20	Dropout Voltage, V_{DO}	V_{IN} = 3.3V; I_{OUT} = 500mA, 1A	300	500	mV
21	Programmable Current Limit	V_{IN} = 2.7V, 5.5V; R_{OCP} = 750Ω	0.15	0.25	A
22		V_{IN} = 2.7V, 5.5V; R_{OCP} = 150Ω	0.8	1.2	A
23	Internal Current Limit	V_{IN} = 2.7V, 5.5V; R_{OCP} = 0Ω	1.2	1.6	A
24		V_{IN} = 30V; R_{OCP} = 0Ω	0.1	0.8	A
25	Startup Time	V_{IN} = 6V; V_{OUT} = 5V; C_{SET} = 100nF; I_{OUT} = 1A; Fast Startup Disabled	6	11	ms
26		V_{IN} = 6V; V_{OUT} = 5V; C_{SET} = 0.47µF; I_{OUT} = 1A; Fast Startup Disabled	32	48	ms
27		V_{IN} = 6V; V_{OUT} = 5V; C_{SET} = 4.7µF; I_{OUT} = 1A; Fast Startup Disabled	320	480	ms
28		V_{IN} = 6V; V_{OUT} = 5V; C_{SET} = 4.7µF; I_{OUT} = 1A; Fast Startup Enabled	4	9	ms
29	EN Input Rising Threshold	-	1.06	1.2	V
30	EN Threshold Hysteresis	-	-	0.3	V
31	PG Trip UV Rising	V_{IN} = 2.7V, 30V	580	625	mV
32	PG UV Hysteresis	V_{IN} = 2.7V, 30V	-	90	mV
33	PG Trip OV Rising	V_{IN} = 2.7V, 30V	690	750	mV

Table 3. ISL75054SLH Datasheet Total Dose Parameters (T_A = 25°C)

Fig.	Parameter	Test Conditions	Min	Max	Unit
34	PG OV Hysteresis	V_{IN} = 2.7V, 30V	-	90	mV
35	PG Delay UV Falling	V_{IN} = 2.7V, 30V; R_{PULLUP} = 100kΩ	290	390	ns
36	PG Delay OV Rising	V_{IN} = 2.7V, 30V; R_{PULLUP} = 100kΩ	0.7	0.9	µs
37	PG Delay UV Rising	V_{IN} = 2.7V, 30V; R_{PULLUP} = 100kΩ	0.7	0.9	µs
38	PG Delay OV Falling	V_{IN} = 2.7V, 30V; R_{PULLUP} = 100kΩ	280	390	ns
39	PG VOL	V_{IN} = 2.7V; I_{PG} = 1mA	-	350	mV
40	PG Leakage	VPG = 30V	-	1	µA

Related Literature

For a full list of related documents, visit our website:

- ISL75054SLH device page
- MIL-STD-883 test method 1019

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