NEC

Customer Notification

µPD780948 Subseries

8-Bit Single-Chip Microcontroller

Injected Current Specification

µPD780948(A)
µPD78F0948

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(A) General description

This document is an addendum to the standard electrical specification and documentation with respect to the injected current. This injected current specification is not valid for the µPD780948(A1) devices with the operating temperature range of T_a = -40°C ~ +110°C.

(B) Definition of the Injected Current Specification

No. 1	Injected Current Specification

Details

This injected current specification is valid for the µPD780948 Subseries and the injected currents are defined as follows:

Absolute maximum ratings (T_a = 25°C)

Parameter	Test condition		Rating	Unit
$V_{in} > V_{dd}$	Per pin	Input port pins	5.00	mA
		Port 1n/ANIn (n = 0 to 7) Note1	3.00	mA
	Total	Input port pins	40.00	mA
		Port 1n/ANIn (n = 0 to 7) Note2	5.00	mA
$V_{in} < V_{ss}$	Per pin	Input port pins	-0.50	mA
		Port 1n/ANIn (n = 0 to 7) Note1	-0.05	mA
	Total	Input port pins	-4.00	mA
		Port 1n/ANIn (n = 0 - 7) Note2	-0.05	mA

DC Characteristics (T_a = -40°C ~ +85°C, V_{dd} = 4.0V ~ 5.5V)

Parameter	Test condition		Rating	Unit
$V_{in} > V_{dd}$	Per pin	Input port pins	0.50	mA
		Port 1n/ANIn (n = 0 to 7) Note1	0.30	mA
	Total	Input port pins	4.00	mA
		Port 1n/ANIn (n = 0 to 7) Note2	0.50	mA
$V_{in} < V_{ss}$	Per pin	Input port pins	-0.05	mA
		Port 1n/ANIn (n = 0 to 7) Note1	-0.02	mA
	Total	Input port pins	-0.40	mA
		Port 1n/ANIn (n = 0 to 7) Note2	-0.02	mA

Notes:

1. Injected currents generated due to over-voltage applied to an analog input pin would affect the A/D conversion result. The affected A/D conversion result is the sum of the A/D conversion result without injected current and +/- 2 LSB.

2. The total injected current generated due to over-voltage applied to all analog input pins would affect the A/D conversion result. The affected A/D conversion result is the sum of the A/D conversion result without injected current and +/- 4 LSB.

(C) Valid Specification

Item	Date published	Document No.	Document Title
1	April 2003	U12670EE3V0UD00	User's Manual, μPD780948 Subseries

(D) Revision History

Item	Date published	Document No.	Comment
1	Nov. 06, 2003	TPS-LE-IC-F0948-1	Initial release