

Electrical Characteristics (Note 1)

Electrical Characteristics at $I_{LOAD} = 0 \text{ mA}$ and $T_J = +25^\circ\text{C}$ unless otherwise specified.

PARAMETER	Device	Test Conditions	Min	Typ	Max	Units	
Reference Voltage	CS52015	$V_{CONTROL} = 2.75\text{V}, V_{POWER} = 2\text{V}, I_{LOAD} = 10\text{mA}$		1.238	1.250	1.262	V
		$V_{CONTROL} = 2.7\text{V to } 12\text{V},$ $V_{POWER} = 3.3\text{V to } 5.5\text{V}, I_{LOAD} = 10\text{mA to } 1.5\text{A}$	*	1.230	1.250	1.270	
Output Voltage	All fixed Versions	$V_{CONTROL} = V_{OUT} + 1.5\text{V}, V_{POWER} = V_{OUT} + 0.5\text{V},$ Variation from nominal V_{OUT}		-1		+1	%
		$V_{CONTROL} = V_{OUT} + 1.5\text{V}, V_{POWER} = V_{OUT} + 0.8\text{V},$ $I_{LOAD} = 0 \text{ mA to } 1.5\text{A},$ Variation from nominal V_{OUT}	*	-1.6		+1.6	%
Line Regulation	All	$I_{LOAD} = 10 \text{ mA}, (1.5\text{V} + V_{OUT}) \leq V_{CONTROL} \leq 12\text{V},$ $0.8\text{V} \leq (V_{POWER} - V_{OUT}) \leq 5.5\text{V}$	*		0.04	0.20	%
Load Regulation	All	$V_{CONTROL} = V_{OUT} + 2.5\text{V}, V_{POWER} = V_{OUT} + 0.8\text{V},$ $I_{LOAD} = 10 \text{ mA to } 1.5\text{A},$	*		0.08	0.40	
Minimum Load Current (Note 2)	CS52015	$V_{CONTROL} = 5\text{V}, V_{POWER} = 3.3\text{V}, V_{ADJ} = 0\text{V}$	*		1.7	5	mA
Control Pin Current (Note3)	All	$V_{CONTROL} = V_{OUT} + 2.5\text{V}, V_{POWER} = V_{OUT} + 0.8\text{V},$ $I_{LOAD} = 10 \text{ mA to } 1.5\text{A},$	*			30	mA
Ground Pin Current	All fixed Versions	$V_{CONTROL} = V_{OUT} + 2.5\text{V}, V_{POWER} = V_{OUT} + 0.8\text{V},$ $I_{LOAD} = 10 \text{ mA to } 1.5\text{A},$	*		6	10	mA
Adjust Pin Current	CS52015	$V_{CONTROL} = V_{OUT} + 2.75\text{V}, V_{POWER} = 2.05\text{V},$ $I_{LOAD} = 10 \text{ mA}$	*		50	120	mA
Current Limit	All	$(V_{IN} - V_{OUT}) = 3\text{V}$	*	1.5	2.3		A
Ripple Rejection	All	$V_{CONTROL} = V_{POWER} = V_{OUT} + 2.5\text{V}, V_{RIPPLE} = 1\text{V}_{P-P}$ $I_{LOAD} = 750 \text{ mA}$		60	80		dB
Thermal Regulation	CS52015	$T_A = 25^\circ\text{C}, 30 \text{ ms pulse}$			0.003		%/W
Dropout Voltage							
Control Input ($V_{CONTROL} - V_{OUT}$)	All	$V_{POWER} = V_{OUT} + 0.8\text{V}, I_{LOAD} = 10\text{mA}$			1.00	1.15	V
		$V_{POWER} = V_{OUT} + 0.8\text{V}, I_{LOAD} = 1.5\text{mA}$	*		1.15	1.30	
Power Input ($V_{POWER} - V_{OUT}$)	All	$V_{CONTROL} = V_{OUT} + 2.5\text{V}, I_{LOAD} = 1.5\text{A}$	*		0.55	0.70	

The * denotes the specifications which apply over the full temperature range.

Note 1: Unless otherwise specified $V_{out} = V_{sense}$. For CS52015 (adj) $V_{adj} = 0\text{V}$

Note 2: For the adjustable device the minimum load current is the minimum current required to maintain regulation. Normally the current in the resistor divider used to set the output voltage is selected to meet the minimum load current requirement.

Note 3: The control pin current is the drive current required for the output transistor. This current will track output current with a ratio of about 1:100

Note 4: The dropout voltage for the CS52015 is caused by either minimum control voltage or minimum power voltage. The specifications represent the minimum input /output voltage required to maintain 1% regulation.

