- [redacted]
- [redacted]
- [redacted]

1 Pin

2 Product Specification

2.1 Absolute Maximum Ratings (1)

Parameter	Rating	Units
Maximum Input Voltage: VIN	- 0.3 to +40	V
Enable Input Voltage	- 0.3 to V_{IN}	V
Storage Temperature Range	-55 to 150	°C
Operating Junction Temperature Range	-40 to 125	°C
ESD Susceptibility, HBM	2000	V

(1) Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only.

2.2 Thermal Data

Parameter	Rating	Unit
Package Thermal Resistance, $R_{\theta JC}$ (Juntion-to-case)	2 (TO-220) 2 (TO-263) 1.5 (TO-247) 3 (TO-252)	°C/W

2.3 Recommended Operating Conditions

Parameter	Rating	Unit
Input Supply Voltage	+4.5 ~ +26	V
Operating ambient temperature	-40 to +85	°C

Ground Pin Current at Dropout (V_{IN} is 0.5V less than specified V_{OUT})	I_{GRNDDO}	COS2915x, I_{OUT}=10mA	-	1.9	-	mA
		COS2930x, I_{OUT}=10mA	-	1.9	-	
		COS2950x, I_{OUT}=10mA	-	1.9	-	
		COS2975x, I_{OUT}=10mA	-	1.9	-	
Current Limit	I_{LIM}	COS2915x, V_{OUT}=0V	-	2.0	2.5	A
		COS2930x, V_{OUT}=0V	-	4.0	4.8	
		COS2950x, V_{OUT}=0V	-	6.3	7.8	
		COS2975x, V_{OUT}=0V	-	9.5	11.7	
Ground Current in Shutdown			-	5	75	nA
Output Noise Voltage	e_n	C_L=10µF, I_L=100mA, 10Hz to 100kHz	-	390	-	µVrms
		C_L=33µF, I_L=100mA, 10Hz to 100kHz	-	211	-	µVrms
Reference						
Reference Voltage			1.22	1.24	1.252	V
Reference Voltage Temperature Coefficient			-	20	-	ppm/°C
Adjust Pin Bias Current			-	-	100	pA
Flag Output						
Output Low Voltage	V_{OL}		-	-	400	mV
Hysteresis			-	15	-	mV
ENABLE Input						
Input Logic Voltage Low (OFF)			-	-	0.8	V
Input Logic Voltage High (ON)			2.4	-	-	V
Enable Pin Input Current		V_{EN}=0.8V	-	-	24	pA
		V_{EN}=26V	-	-	3	nA
Regulator Output Current in Shutdown		– 40 ° C ≤ T_J ≤ +125 ° C	-	-	18	µA

3 Application Notes

The COS2915x, COS2930x, COS2950x, and COS2975x are high-performance low-dropout voltage regulators suitable for all moderate to high-current voltage regulator applications. Their 350 mV to 425 mV typical dropout voltage at full load make them especially valuable in battery powered systems and as high efficiency noise filters in post-regulator applications.

The COS2915x/2930x/2950x/2975x family of regulators are fully protected from damage due to fault conditions. Current limiting is provided. This limiting is linear; output current under overload conditions is constant. Thermal shutdown disables the device when the die temperature exceeds the +125°C maximum safe operating temperature. Line transient protection allows device and load survival even when the input voltage spikes between –0.3V] Ŏ

3.2 Capacitor Requirements

For stability and minimum output noise, a capacitor on the regulator output is necessary. The value of this capacitor is dependent upon the output current; lower currents allow smaller capacitors. The COS2915x/2930x/2950x/2975x regulators are stable with the following minimum capacitor values at full load, as noted in Table 3-1. This capacitor need not be an expensive low ESR type: aluminum electrolytics are adequate. In fact, extremely low ESR capacitors may contribute to instability. Tantalum capacitors are recommended for systems where fast load transient response is important where the regulator is powered from a sour]s1

3.4 Adjustable Regulator Design

COS29xx2 and COS29xx3, allow prm !

5 Package Information

5.1 TO-263-5 (Package Outline Dimensions)



Dimensions In Inches			Symbol	Dimensions In Millimeters			
IN	NOM	MAX		MIN	NOM	MAX	M
0.150	0.000	0.002	0.006	A1	0.000		0.60
0.389	0.395	0.401		D	9.880	10.00	10.180
0.323	0.331	0.339		E	8.200	8.400	8.600
	5.600 REF				0.220 REF		

5.2 TO-252-5 (Package Outline Dimensions)

