Ultra Low Quiescent, 300mA, CMOS LDO（Preliminary）

General Description

WR0343 adopts CMOS technology and has the characteristics of ultra-low power consumption and low dropout, which can not only make the input and output voltage difference smaller, but also provide larger output current. It can output 300mA output current and input voltage up to 8V. This series of products is suitable for battery powered equipment.

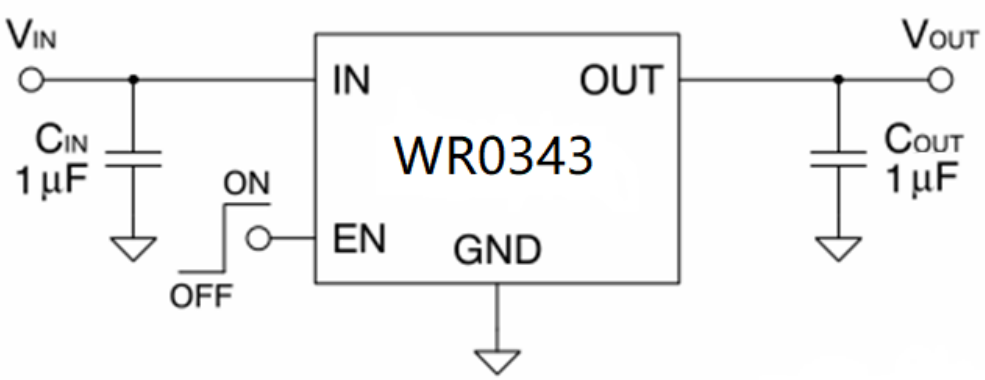
Features

- Wide Input Voltage Range: 1.8V to 8.0V
- Output Current: 300mA
- Output Voltage Range: 1.2V to 5.0V
- Stable with Small 1μF Ceramic Capacitors
- High Output voltage Accuracy: ±1%
- Over-current Protection
- Dropout Voltage: 110mV Typ. at 100mA，V_{OUT_NOM} = 3.3V
- Power Supply Rejection Ration：50dB@1kHz
- Excellent Load/Line Transient Response
- Quiescent Current typ: 0.60μA

Typical Application

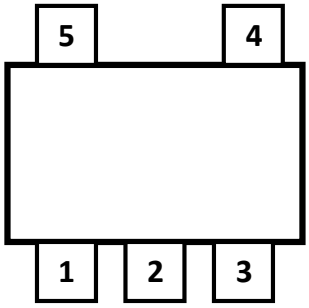
- Laptop，Palmtops and PDAs
- Portable Consumer Equipments
- Radio control systems

Typical Application

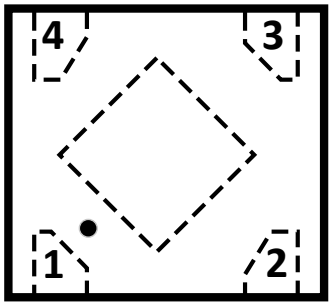


Pin Configurations

(Top View)



SOT23-5



DFN-4

Pin Description

Pin Number		Pin Name	Description
SOT23-5	DFN-4		
1	4	VIN	Power supply input voltage pin
2	2	GND	Power supply ground pin
3	3	EN	Enable pin (active “H”)
4	-	NC	No Connection
5	1	VOUT	Regulated output voltage pin
-	-	EPAD	Exposed pad should be connected directly to the GND pin. Soldered to a large ground copper plane allows for effective heat removal.

Absolute Maximum Ratings

Parameter	Rating	Unit
Input Voltage (V_{IN} Pin)	-0.3~9	V
Output Voltage	−0.3 to V_{IN}+0.3	V
Output Current	650	mA
Maximum Junction Temperature	-40~125	ºC
Storage Temperature	-40~125	ºC
ESD Capability, Human Body Model	2000	V
ESD Capability, Machine Model	200	V

RECOMMENDED OPERATING CONDITIONS

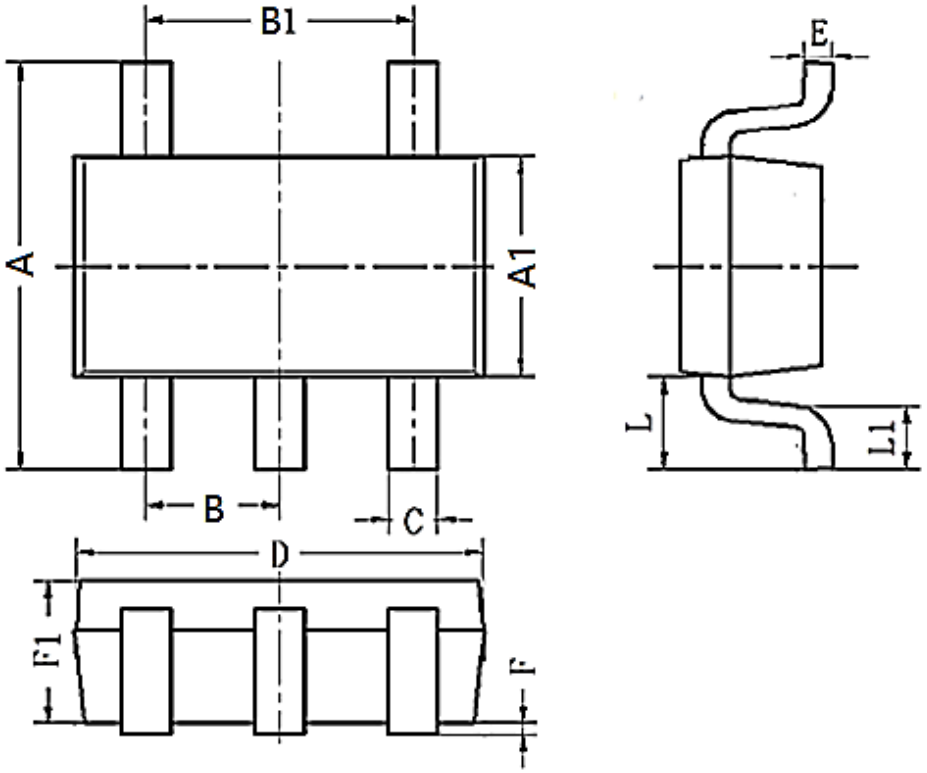
Parameter	MIN	NOM	MAX	Unit
Supply Voltage at V_{IN}	1.8		8	V
Operating junction temperature range, T_J	-40		125	V
Operating junction temperature range, T_A	-40		85	ºC

Electrical Characteristics

V_{IN}= V_{OUT}+ 1V, C_{IN}= C_{OUT}=1.0 μF, T_J= 25℃ ， unless otherwise specified

Symbol	Parameter	Test Conditions		Min	Typ.	Max	Unit
V_{IN}	Input Voltage			1.8	–	8	V
V_{OUT}	Output Voltage			1.2	–	5	%
		I_{OUT}=1mA		-1	-	1	
LDR	Load Regulation	V_{IN}= V_{OUT} +1 V 1mA≤I_{OUT}≤300 mA		-	20	-	mV
LNR	Line Regulation	I_{OUT}=10mA V_{OUT}+1V≤V_{IN}≤8 V		-	0.05	0.3	%/V
V_{DO}	Dropout Voltage	I_{OUT}=100mA V_{OUT}=3.0 V		-	110	-	mV
I_Q	Quiescent Current	I_{OUT}=0mA		-	0.6	-	μA
I_{STBY}	Standby Current	V_{EN}=0V		-	-	0.1	μA
I_{LIM}	Output Current Limit	V_{OUT}=0.5$V_{OUT-NOM}$, V_{IN}=5 V		-	650	-	mA
I_{SHORT}	Short Circuit Current	V_{OUT}=0V		-	20	-	mA
V_{ENH}	EN Pin Threshold Voltage	EN Input Voltage “H”		1.5	-	V_{IN}	V
V_{ENL}		EN Input Voltage “L”		-	-	0.3	
I_{EN}	Enable Input Current	V_{IN}=V_{OUT}+1V, V_{EN}=V_{IN}, measure EN current		-	0.01	-	μA
PSRR	Power Supply Rejection Ratio	I_{OUT}=50mA	f=100Hz	-	70	-	dB
			f=1kHz	-	50	-	
			f=10kHz	-	40	-	
R_{DIS}	Output Discharge Resistance	V_{IN}=4.0V, V_{EN}=0V, V_{OUT}=$V_{OUT-NOM}$		-	180	-	Ω

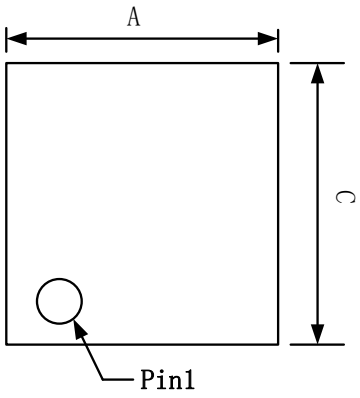
Package Information



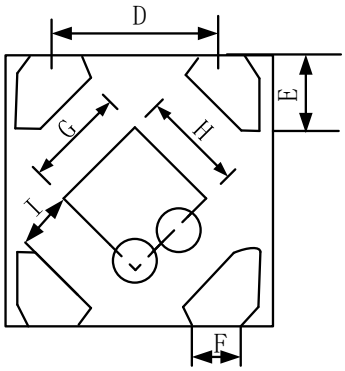
SOT 23-5

SYMBOL	DIMENSIONS IN MILLIMETERS		
	MIN	NOM	MAX
A	2.60	2.80	3.00
A1	1.50	1.60	1.70
B	0.95BSC		
B1	1.90BSC		
C	0.25	0.40	0.50
D	2.82	2.92	3.02
E	0.10	0.15	0.20
F	0.00	0.08	0.15
L	0.59REF		
F1	0.90	1.10	1.30
L1	0.30	0.45	0.60

DFN1.2*1.6-8



Top View

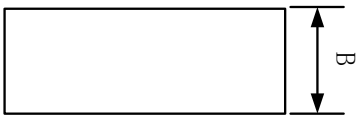


Bottom View

DETAIL A

Pin 1 ID and Tie Bar Mark Options

Note: The configuration of the Pin 1 identifier is optional, but must be located within the zone indicated.



Side View

DFN-4

SYMBOL	DIMENSIONS IN MILLIMETERS		
	MIN	NOM	MAX
A	0.950	1.000	1.050
B	0.320	0.370	0.420
C	0.950	1.000	1.050
D	0.650BSC		
E	0.170	0.270	0.370
F	0.130	0.235	0.300
G	0.430	0.485	0.540
H	0.430	0.485	0.540
I	0.200REF		

Contact Information

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For additional information, please contact your local Sales Representative.

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time

Users should verify actual device performance in their specific applications.