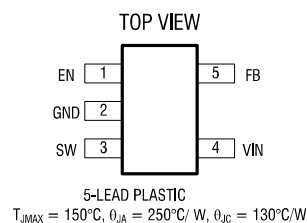
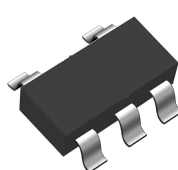


Features

- High Efficiency: Up to 96%
- 1.5MHz Constant Frequency Operation
- 1.3A Output Current
- No Schotky Diode Required
- 2.3V to 7V Input Voltage Range
- Output Voltage as Low as 0.6V
- PFM Mode for High Efficiency in Light Load
- 100% Duty Cycle in Dropout Operation
- Low Quiescent Current: 35 μ A
- Slope Compensated Current Mode Control for Excellent Line and Load Transient Response
- Short Circuit Protection
- Thermal Fault Protection
- Inrush Current Limit and Soft Start
- <1 μ A Shutdown Current
- SOT23-5 package

Applications

- Cellular and Smart Phones
- Wireless and DSL Modems
- PDAs
- Portable Instruments
- Digital Still and Video Cameras
- Set Top Box



Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Input Supply Voltage.....	-0.3V to 7.5V	Junction Temperature(Note2).....	150°C
EN, FB Voltages.....	-0.3V to (V _{IN} +0.3V)	Operating Temperature Range.....	-40°C to 85°C
SW Voltage.....	-0.3V to (V _{IN} +0.3V)	Lead Temperature(Soldering, 10s).....	300°C
Power Dissipation.....	0.4W	Storage Temperature Range.....	-60°C to 150°C
Thermal Resistance θ_{JC}	130°C/W	ESD HBM(Human Body Mode).....	2kV
Thermal Resistance θ_{JA}	250°C/W	ESD MM(Machine Mode).....	200V

Electrical Characteristics (TA=25°C unless otherwise specified)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Input Voltage Range		2.3		7	V
UVLO Threshold		1.7	1.9	2.1	V
Input DC Supply Current	(Note 4)				μA
PWM Mode	$V_{\text{OUT}} = 90\%, I_{\text{LOAD}} = 0\text{mA}$		140	300	μA
PFM Mode	$V_{\text{OUT}} = 105\%, I_{\text{LOAD}} = 0\text{mA}$		35	70	μA
Shutdown Mode	$V_{\text{EN}} = 0\text{V}, V_{\text{IN}} = 4.2\text{V}$		0.1	1.0	μA
Regulated Feedback Voltage V_{FB}	$T_{\text{A}} = 25^{\circ}\text{C}$	0.588	0.600	0.612	V
	$T_{\text{A}} = 0^{\circ}\text{C} \leq T_{\text{A}} \leq 85^{\circ}\text{C}$	0.586	0.600	0.613	V
	$T_{\text{A}} = -40^{\circ}\text{C} \leq T_{\text{A}} \leq 85^{\circ}\text{C}$	0.585	0.600	0.615	V
Reference Voltage Line Regulation	$V_{\text{IN}} = 2.5\text{V to } 5.5\text{V}$		0.04	0.40	%/V
Output Voltage Line Regulation	$V_{\text{IN}} = 2.5\text{V to } 5.5\text{V}$		0.04	0.40	%
Output Voltage Load Regulation			0.5		%
Oscillation Frequency	$V_{\text{OUT}} = 100\%$		1.5		MHz
	$V_{\text{OUT}} = 0\text{V}$		300		kHz
On Resistance of PMOS	$I_{\text{SW}} = 100\text{mA}$		300	450	m Ω
On Resistance of NMOS	$I_{\text{SW}} = -100\text{mA}$		300	450	m Ω
Peak Current Limit	$V_{\text{IN}} = 3\text{V}, V_{\text{OUT}} = 90\%$		2		A
Turn on delay time	RT8059		1		mS
OVP	RT8059		7.3		V
EN Threshold		0.30	1.0	1.50	V
EN Leakage Current			± 0.01	± 1.0	μA
SW Leakage Current	$V_{\text{EN}} = 0\text{V}, V_{\text{IN}} = V_{\text{SW}} = 5\text{V}$		± 0.01	± 1.0	μA

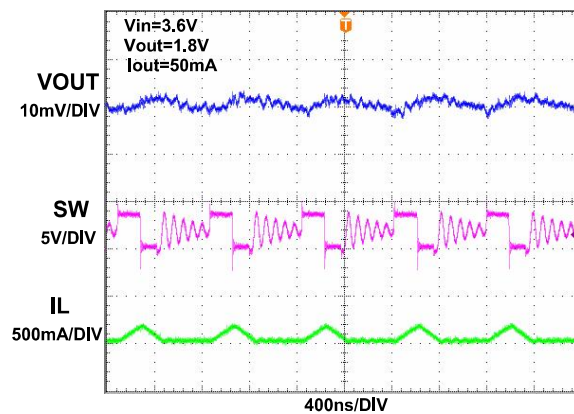
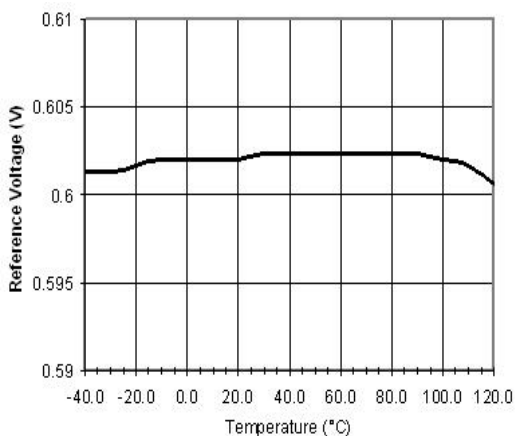
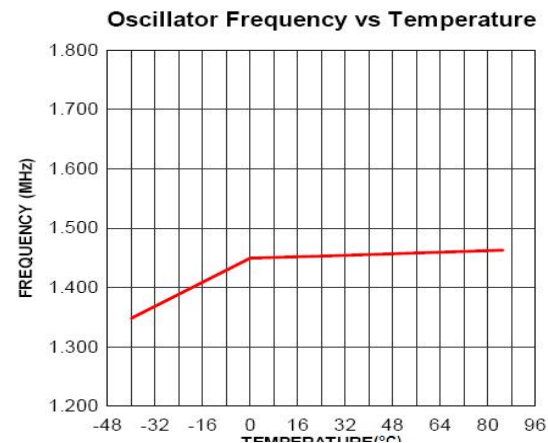
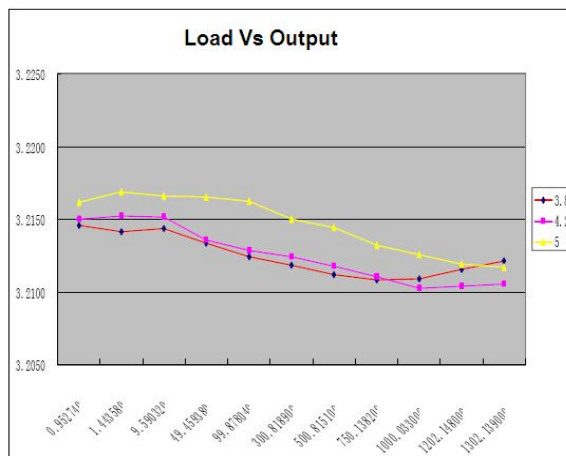
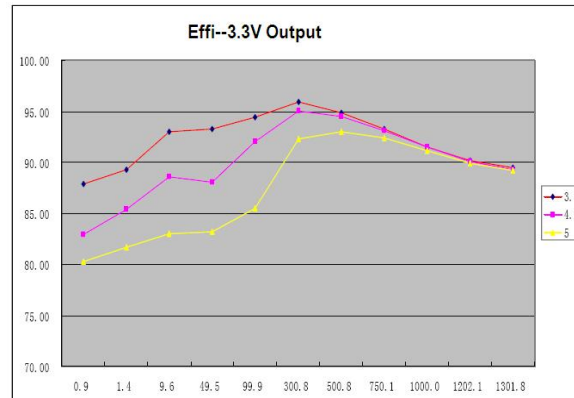
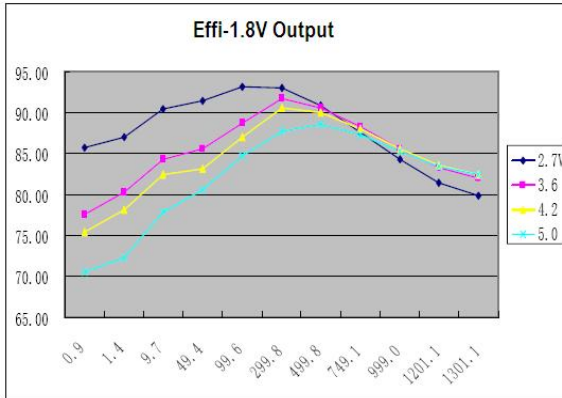
Note 1: Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

Note 2: T_{J} is calculated from the ambient temperature T_{A} and power dissipation P_{D} according to the following formula: $T_{\text{J}} = T_{\text{A}} + (P_{\text{D}}) \times (250^{\circ}\text{C/W})$.

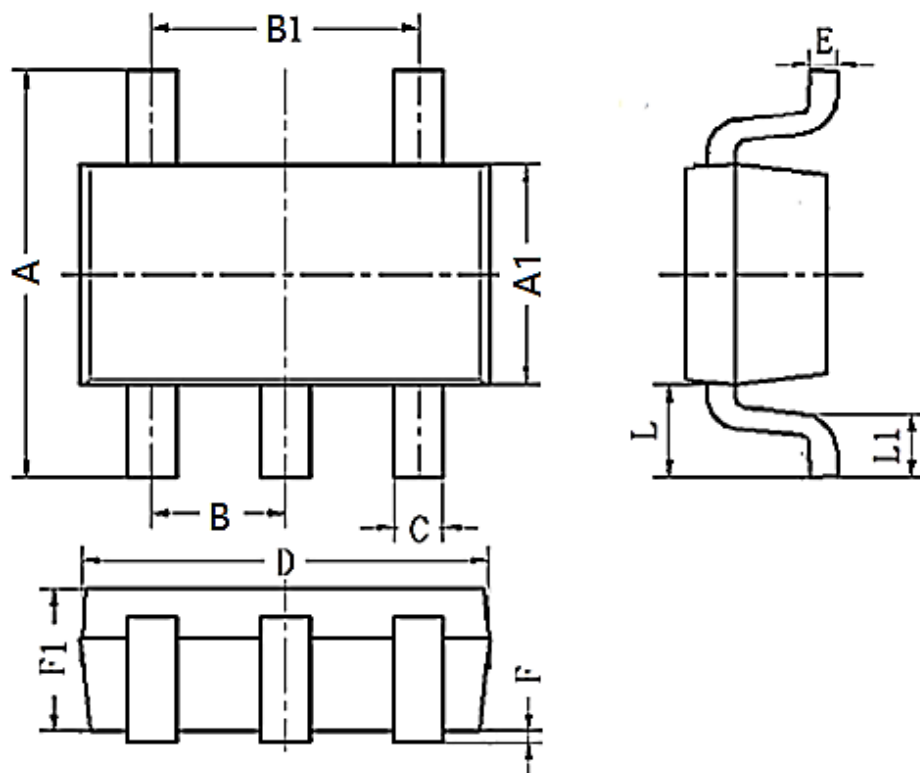
Note 3: 100% production test at +25°C. Specifications over the temperature range are guaranteed by design and characterization.

Note 4: Dynamic supply current is higher due to the gate charge being delivered at the switching frequency.

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



Outline Drawing – SOT23-5



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