PRELIMINARY
Notice:This is not a final specification.
Some parametric limits are subject to change.

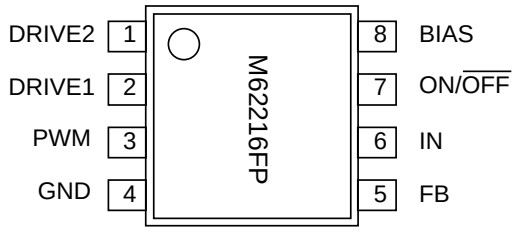
M62216FP

Low Voltage Operation STEP-UP DC-DC Converter

GENERAL DESCRIPTION

The M62216FP is designed as a low voltage operation STEP-UP DC-DC converter.
This IC can be operated at very low input voltage (min. 0.9V) and low power dissipation (a circuit current is less than 900uA). So, this IC is suitable for the power supply of portable systems that use low voltage batteries (DRY battery, rechargeable battery).

PIN CONFIGURATION(TOP VIEW)



OUTLINE: 8P2S-A

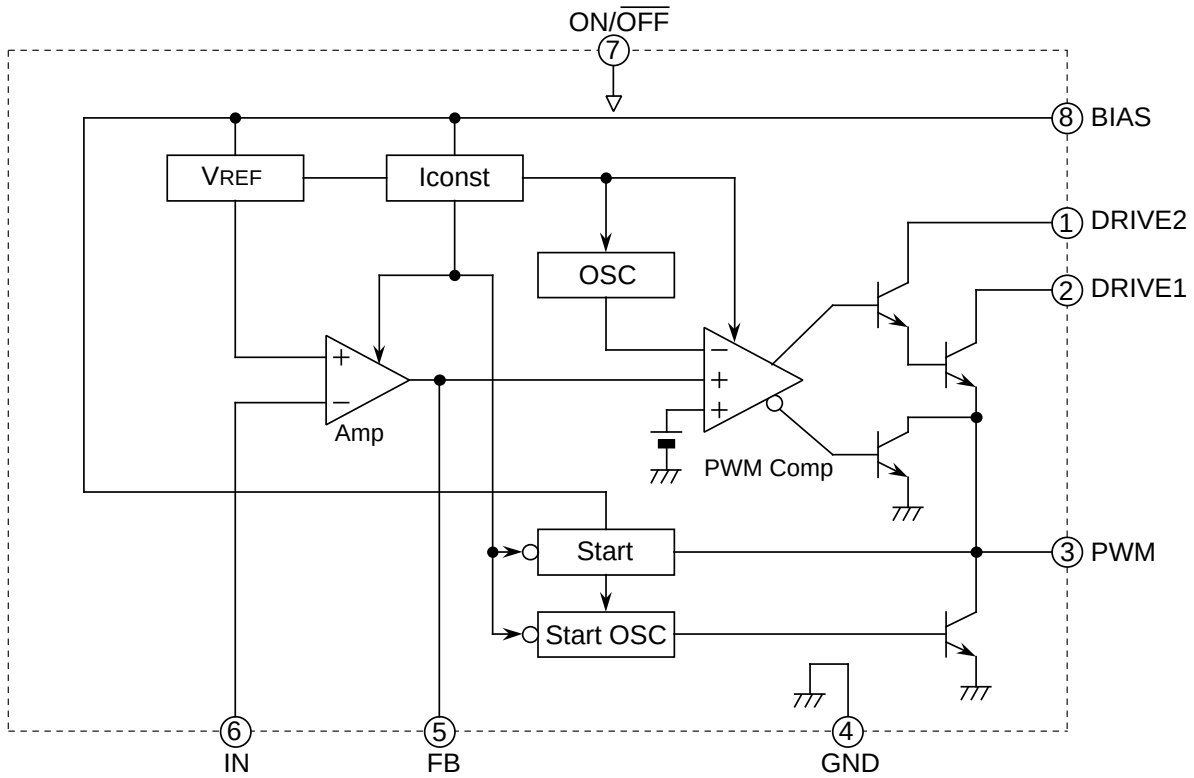
FEATURES

- Pre-drive type PWM output (for pre-drive only)
- Low voltage operation • • • • • • • • • • • • • VIN = 0.9V min
- Low power dissipation • • • • • • • • • • • • • IB = 900µA typ
- Adjustable Pre-drive output current
- Built-in ON/OFF function • • • • • • • • • • IB(OFF) = 25µA typ
- Applicable for STEP-DOWN converter

APPLICATION

DC-DC Converter for battery-powered portable systems

BLOCK DIAGRAM



PRELIMINARY
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ABSOLUTE MAXIMUM RATINGS (Ta=25°C , unless otherwise noted)

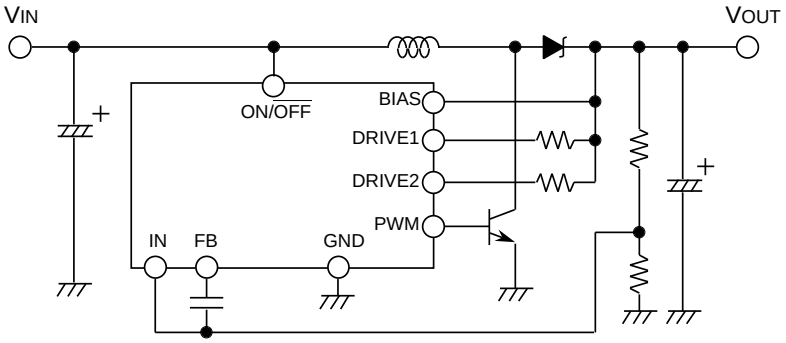
Symbol	Parameter	Condition	Ratings	Unit
VIN	Input Voltage		15.5	V
VBIAS	Bias Terminal Supply Voltage		15.5	V
VDRIVE1	Drive1 Terminal Supply Voltage		15.5	V
VDRIVE2	Drive2 Terminal Supply Voltage		15.5	V
IDRIVE1	Drive1 Terminal Input Voltage		100	mA
IDRIVE2	Drive2 Terminal Input Voltage		10	mA
Pd	Power Dissipation	Ta = 25°C	440	mW
Topr	Operating Temperature		-20 to +85	°C
Tstg	Storage Temperature		-40 to +150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C, VIN=1.7V, VOUT = VBIAS= 3.0V, unless otherwise noted)

Block	Symbol	Parameter	Test Condition	Limits			Unit
				Min.	Typ.	Max.	
All Device	VIN	Input Voltage Range		0.9		15	V
	VBIAS	BIAS Voltage Setting Range		(1.7)		15	V
	IB	BIAS Current			900		µA
	IB(OFF)	BIAS Current at OFF Mode			25		µA
Voltage Reference	VREF	Reference Voltage		1.19	1.25	1.31	V
	ΔVREF-I	Input Regulation of VREF			5		mV
	ΔVREF-B	BIAS Voltage Regulation of VREF	VBIAS=1.7~15V		5		mV
Error Amp.	IIN	Input Current			20		nA
	AV	Open Loop Voltage Gain			80		dB
	IFB+	FB Terminal Sink Current			900		µA
	IFB-	FB Terminal Source Current			50		µA
Osc.	fosc	Oscillation Frequency			100		kHz
OUTPUT	Vsat1	Saturation Voltage between PWM Term. and DRIVE1 Term.	IDRIVE1=50mA, IDRIVE2=5mA		0.3		V
	Vsat2	Saturation Voltage between PWM Term. and DRIVE2 Term.			1.0		V
	IL1	Leak Current of DRIVE1 Terminal				1	µA
	IL2	Leak Current of DRIVE2 Terminal				1	µA
	VPWM(L)	Output Low Voltage of PWM Terminal	IPWM=1mA		0.3		V
ON/OFF	ION	Input Current of ON/OFF Terminal At ON Status			2		µA
	VTH(0N)	Threshold Voltage of ON/OFF Terminal			0.7		V

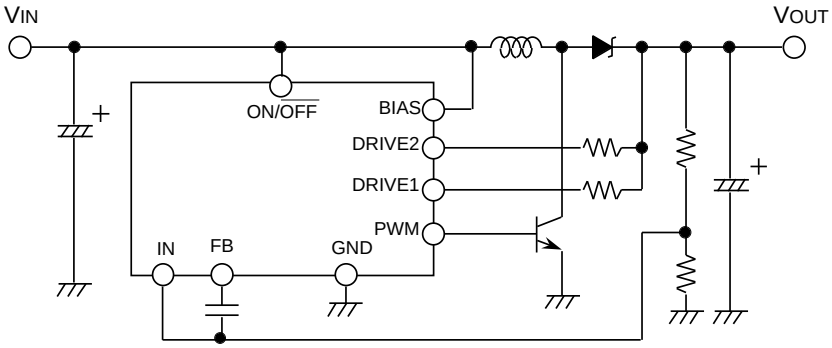
Application Example

(1). Standard Application circuit

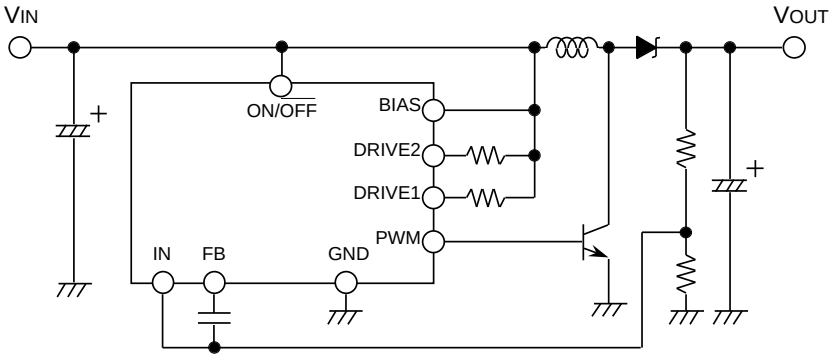


VIN : 0.9 to 14V
VOUT : 1.7 to 15V
where VOUT > VIN

(2). Application circuit 1 (VIN ≥ 1.7V)

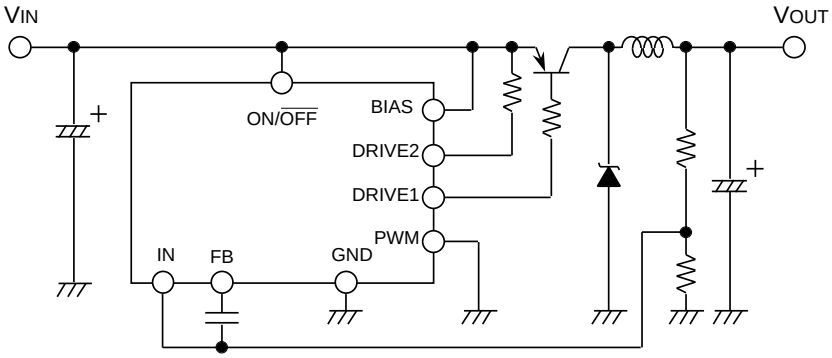


(3). Application circuit 2 (VOUT > 15V)



VIN : 1.7 to 15V
VOUT : more than 2V
where VOUT > VIN

(4). Application circuit for STEP-DOWN Circuit



VIN : 2.0 to 15V
VOUT : 1.7 to14V
where VOUT < VIN