High Speed LDO Regulators, Low output voltage, High PSRR, ME6218 Series

General Description

The ME6218 series are low output voltage, CMOS LDO Voltage Regulators. Offering high ripple rejection ratio, low dropout and very fast turn-on times, the ME6218 series is ideal for today's cutting edge mobile phone. Internally the ME6218 includes a reference voltage source, error amplifiers, driver transistors, current limiters and phase compensators. The ME6218's current limiters' foldback circuit also operates as a short protect for the output current limiter and. the output pin. This high level of output stability is maintained even during frequent load fluctuations, due to the excellent transient response performance and high PSRR achieved across a broad range of frequencies. The CE function allows the output of regulator to be turned off, resulting in greatly reduced power consumption.

Features

- Maximum Output Current: 250mA
  （V_{IN}＝1.75V,V_{OUT}＝0.75V）
- Operating Voltage Range: 1.5V ~ 6.0V
- Output voltage: 0.4V~0.8V
- Highly Accuracy: ±2％
- Low Power Consumption: 45uA（TYP.）
- Standby Current: 0.1uA（TYP.）
- High Ripple Rejection: 68dB@1KHz
  （V_{IN}＝3V,V_{OUT}＝0.75V）

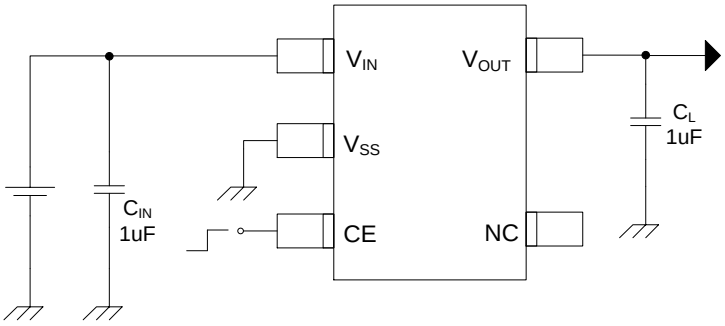
Typical Application

- Mobile phones
- Cordless phones, radio communication equipment
- Portable games
- Cameras, Video cameras
- Reference voltage sources
- Battery powered equipment

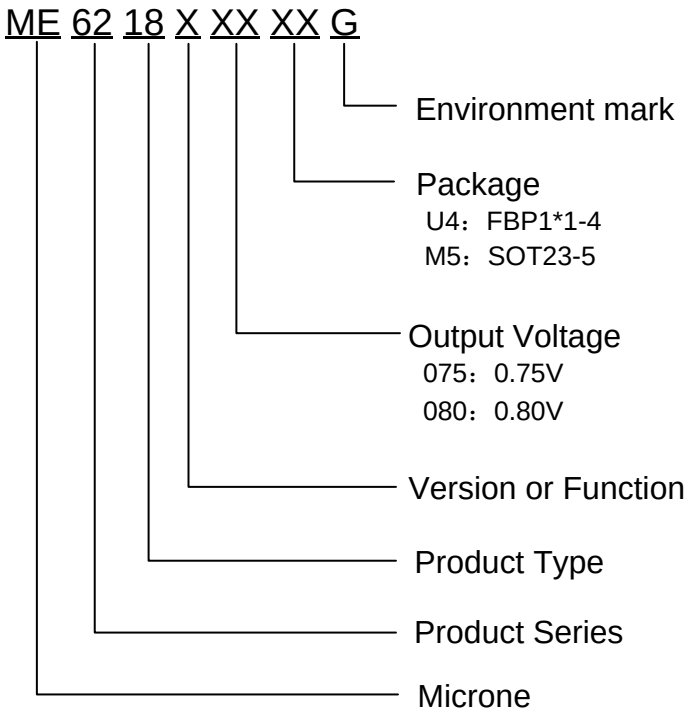
Package

- 4-pin FBP1*1-4
- 5-pin SOT23-5

Typical Application Circuit



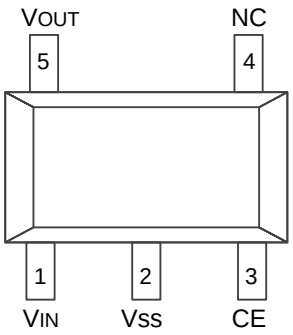
Selection Guide



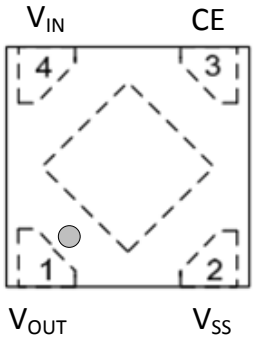
product series	product function	Output voltage	Package
ME6218C075M5G	Enable can be set	0.75V	SOT23-5
ME6218C080M5G	Enable can be set	0.80V	SOT23-5
ME6218C080U4AG	Enable can be set	0.80V	FBP1*1-4

NOTE: At present ,there are two kinds of voltage value： 0.75V、0.80V。
If you need other voltage values or other package products, please contact our sales staff。

Pin Configuration(Top View)



SOT23-5

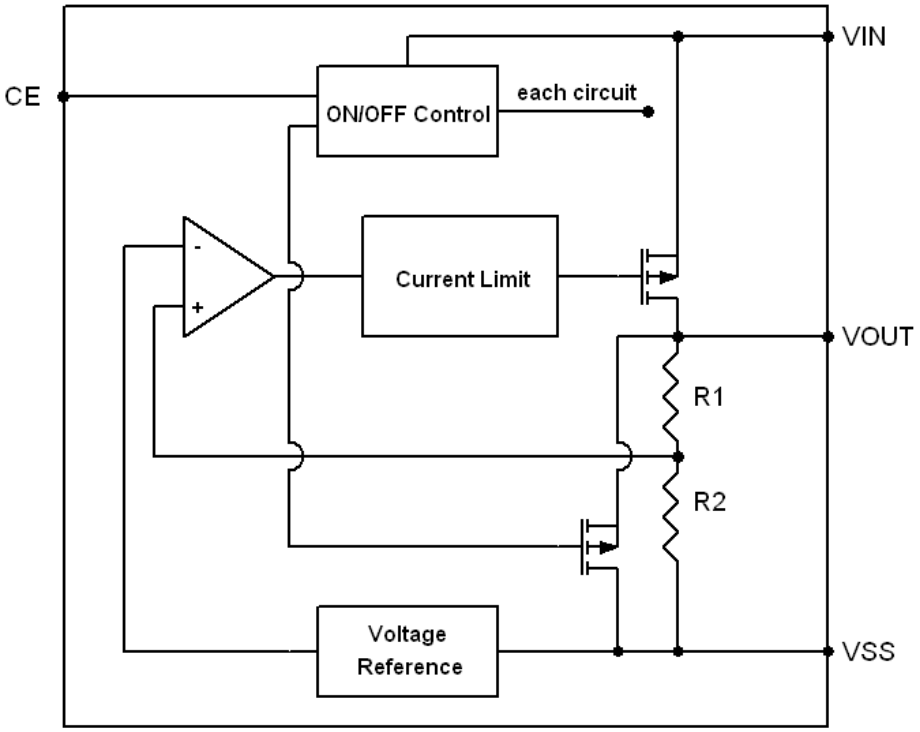


FBP1*1-4

Pin Assignment

Pin Number		Pin Name	Functions
SOT23-5	FBP1*1-4		
1	4	V_{IN}	Power Input
2	2	V_{SS}	Ground
3	3	CE	ON / OFF Control
4	-	NC	No Connect
5	1	V_{OUT}	Output

Block Diagram



Absolute Maximum Ratings

Parameter		Symbol	Ratings	Units
Input Voltage		V_{IN}	6.5	V
Output Current		I_{OUT}	600	mA
Output Voltage		V_{OUT}	Vss-0.3 ~ V_{IN} +0.3	V
CE Pin Voltage		V_{CE}	Vss-0.3 ~ V_{IN} +0.3	V
Power Dissipation	SOT23-5	P_D	600	mW
	FBP1*1-4		500	
Thermal resistance (Junction to air)	SOT23-5	θ_{JA}	210	℃/W
	FBP1*1-4		250	
Operating Ambient Temperature Range		T_{OPR}	-40 ~ +85	℃
Storage Temperature Range		T_{STG}	-55 ~ +150	℃
Maximum junction temperature		T_J	-40 ~ +150	℃

Electrical Characteristics

(V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25^{O}C , unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=10mA, V_{IN}= V_{OUT}+1V		X 0.98	V_{OUT} (T) (Note 1)	X 1.02	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V		-	250	-	mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA		-	8	-	mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA		-	700	-	mV
	V_{DIF2}	I_{OUT} =200mA		-	850	-	mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V		-	45	60	μA
Stand-by Current	I_{CEL}	V_{CE}＝0V		-	0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =10mA V_{OUT}+1V ≤V_{IN}≤6.0V		-	0.11	-	%/V
CE “High” Voltage	VCEH	Start up		1.0	-	-	V
CE “Low” Voltage	VCEL	Shut down		-	-	0.5	V
Ripple Rejection Rate	PSRR	V_{IN} = 1.75V +1Vp-pAC, I_{OUT}=10mA	f=1kHz	-	60	-	dB
			f=10KHz	-	50	-	
		V_{IN} = 3V +1Vp-pAC, I_{OUT}=100mA	f=1kHz	-	68	-	
			f=10KHz	-	51	-	

Note ：

1. V_{OUT} (T) ： Specified Output Voltage

2.V_{OUT} (E) ： Effective Output Voltage (Ie. The output voltage when “V_{OUT} (T)+1.0V”is provided at the Vin pin while maintaining a certain Iout value.)

3.V_{DIF}： V_{IN1} –V_{OUT} (E)’

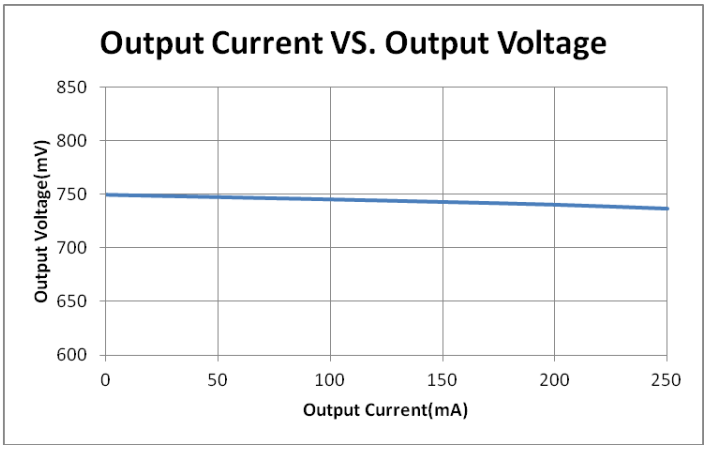
V_{IN1} ： The input voltage when V_{OUT}(E)’ appears as input voltage is gradually decreased.

V_{OUT} (E)’=A voltage equal to 98% of the output voltage whenever an amply stabilized Iout {V_{OUT} (T)+1.0V} is input.

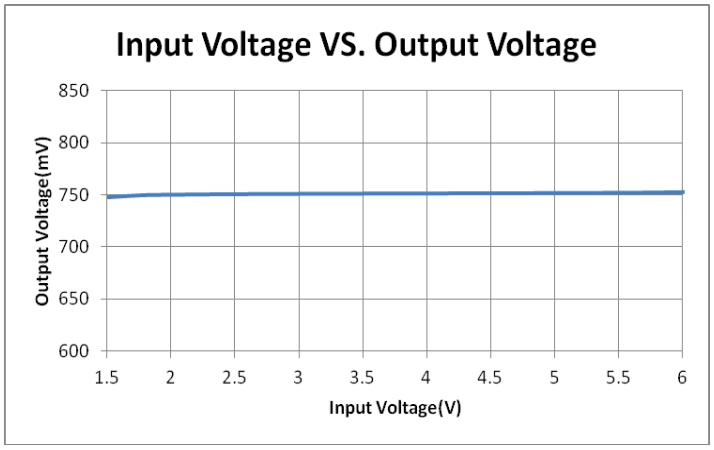
Type Characteristics

ME6218C075M5G

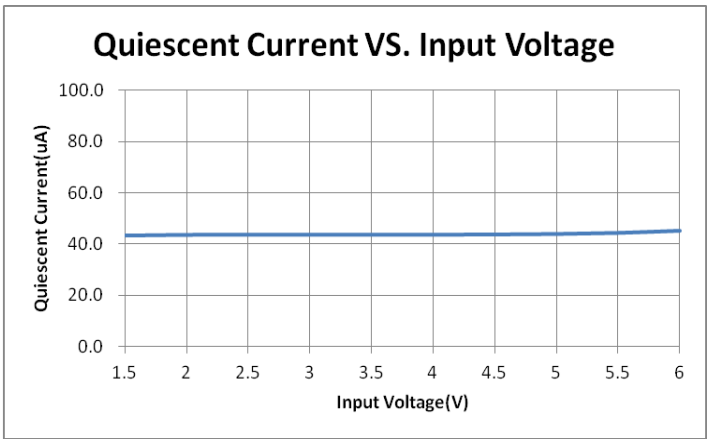
（1） Output Current VS. Output Voltage
（V_{IN} = V_{OUT} +1, Ta = 25 °C）



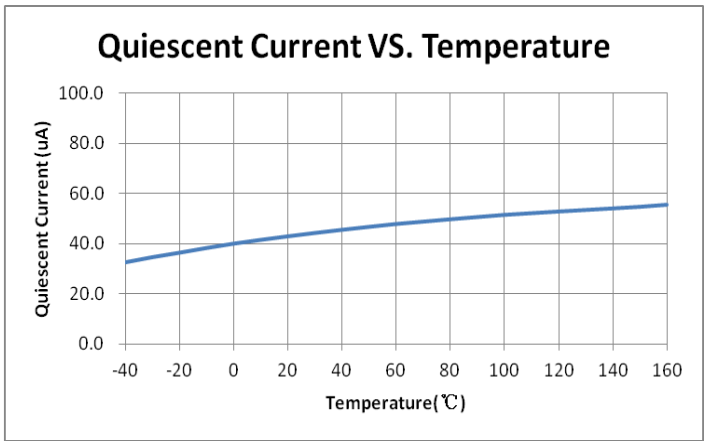
（2）Input Voltage VS. Output Voltage
（I_O＝10mA, Ta = 25 °C）



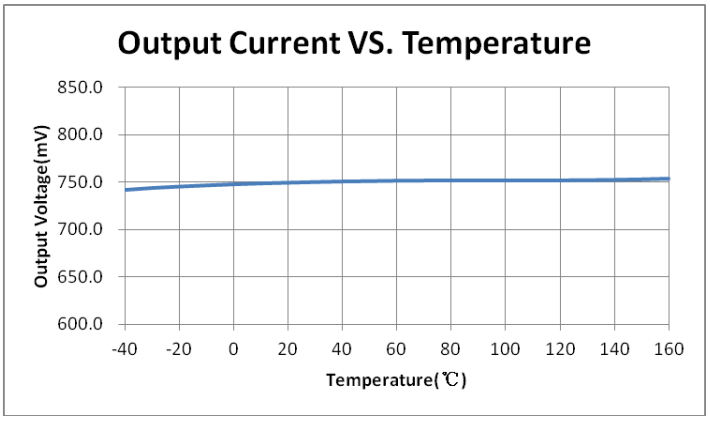
（3）Quiescent VS. Input Voltage（Ta = 25 °C）



（4）Quiescent VS. Temperature

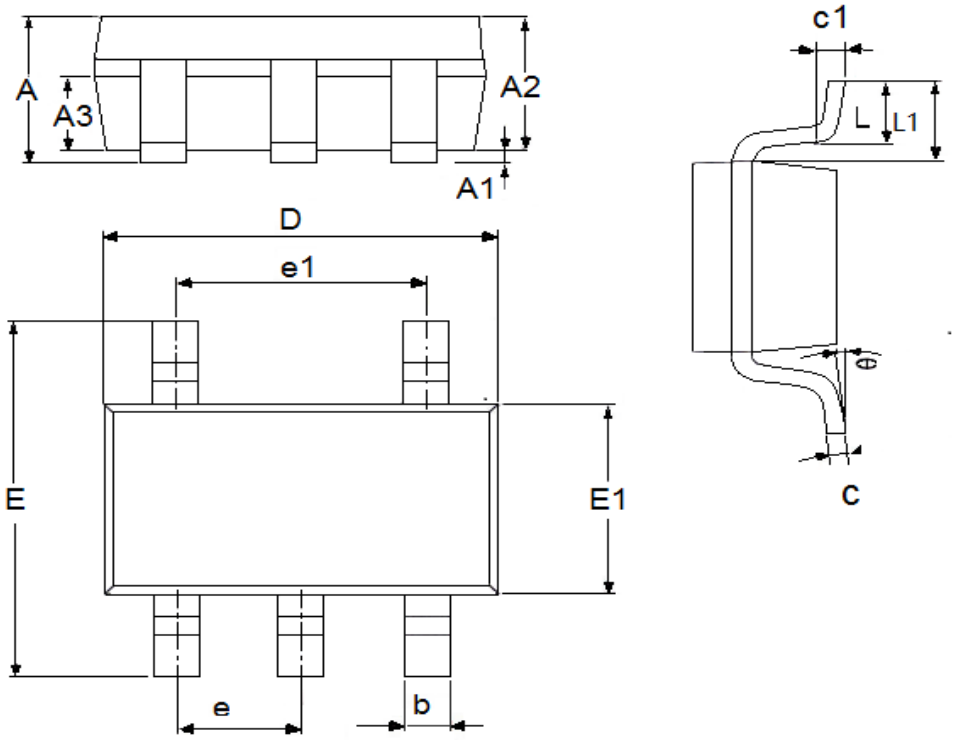


（5）Output Voltage VS. Temperature



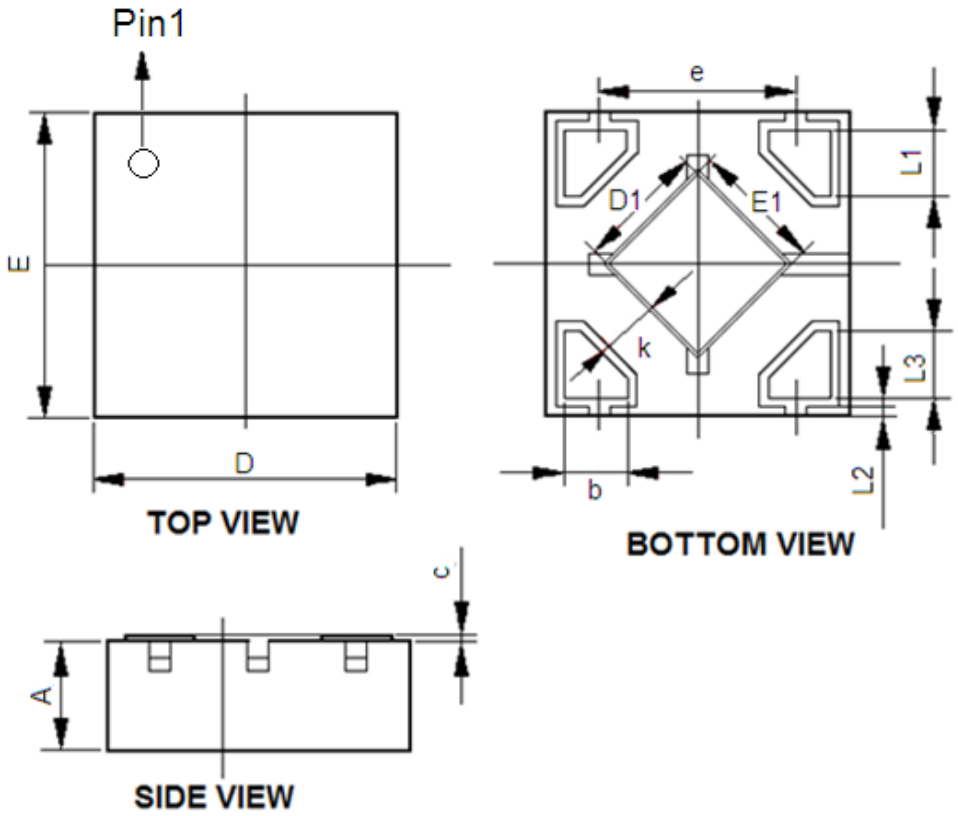
Packaging Information

- **Package Type:SOT23-5**



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.05	1.45	0.0413	0.0571
A1	0	0.15	0.0000	0.0059
A2	0.9	1.3	0.0354	0.0512
A3	0.6	0.7	0.0236	0.0276
b	0.25	0.5	0.0098	0.0197
c	0.1	0.23	0.0039	0.0091
D	2.82	3.05	0.1110	0.1201
e1	1.9(TYP)		0.0748(TYP)	
E	2.6	3.05	0.1024	0.1201
E1	1.5	1.75	0.0512	0.0689
e	0.95(TYP)		0.0374(TYP)	
L	0.25	0.6	0.0098	0.0236
L1	0.59(TYP)		0.0232(TYP)	
θ	0	8°	0.0000	8°
c1	0.2(TYP)		0.0079(TYP)	

- **Package Type: FBP1*1-4**



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.335	0.410	0.013	0.016
D	0.950	1.100	0.037	0.043
E	0.950	1.100	0.037	0.043
D1	0.370	0.470	0.015	0.019
E1	0.370	0.470	0.015	0.019
k	0.170MIN		0.007MIN	
b	0.160	0.260	0.060	0.010
C	0.010	0.090	0.000	0.004
e	0.600	0.700	0.024	0.028
L1	0.185	0.255	0.007	0.010
L2	0.03REF		0.001REF	
L3	0.185	0.255	0.007	0.010

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