HM6218

High Speed LDO Regulators, High PSRR, Low noise, HM6218 Series

General Description

The HM6218 series are highly accurate, low noise, CMOS LDO Voltage Regulators. Offering low output noise, high ripple rejection ratio, low dropout and very fast turn-on times, the HM6218 series is ideal for today's cutting edge mobile phone. Internally the HM6218 includes a reference voltage source, error amplifiers, driver transistors, current limiters and phase compensators. The HM6218's current limiters' foldback circuit also operates as a short protect for the output current limiter and. the output pin. The HM6218 series is also fully compatible with low ESR ceramic capacitors, reducing cost and improving output stability. 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: 500mA
  （V_{IN}＝4.3V,V_{OUT}＝3.3V）
- Dropout Voltage: 100mV@ I_{OUT} =100mA
- Operating Voltage Range: 1.2V～6.0V
- Highly Accuracy: ±1％
- Low Power Consumption: 30uA（TYP.）
- Standby Current: 0.1uA（TYP.）
- High Ripple Rejection: 70dB@1KHz（HM6218B33）
- Low output noise: 50uVrms
- Line Regulation: 0.05％（TYP.）

Typical Application

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

Package

- 3-pin SOT89-3，SOT23-3
- 4-pin SOT343R，DFN1*1-4
- 5-pin SOT23-5，SOT353
- 6-pin DFN2*2-6

Typical Application Circuit

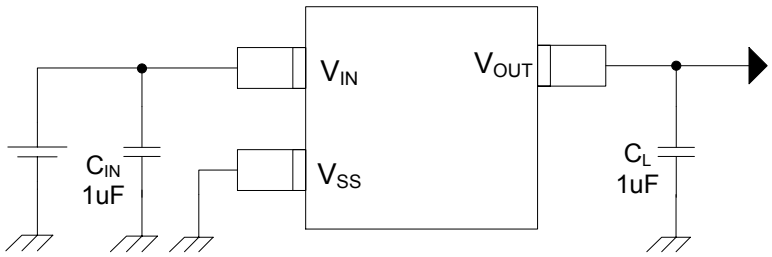


Fig1. HM6218A series

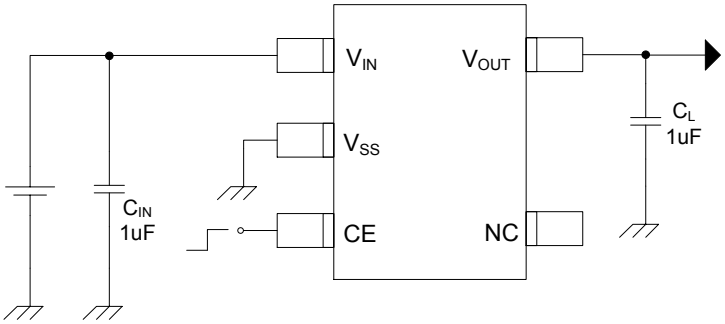


Fig2. HM6218B series

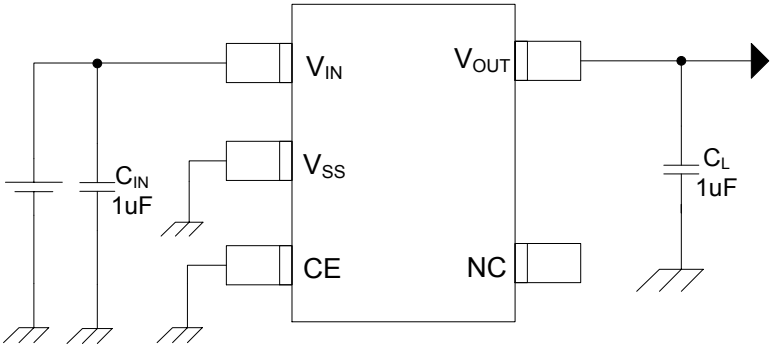
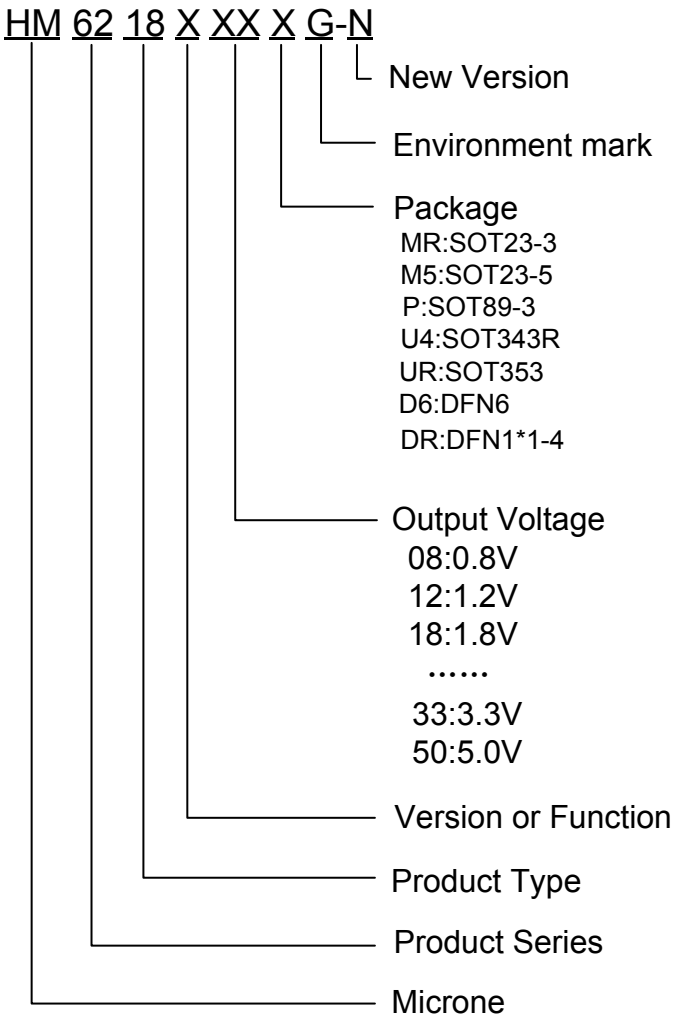


Fig3. HM6218H series

Selection Guide



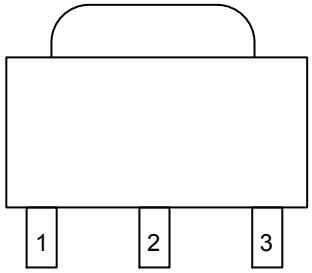
product series	product function	Output voltage	Package
HM6218A12PG-N	Enable the internal connection of high	1.2V	SOT89-3
HM6218B33M5G-N	Enable can be set	3.3V	SOT23-5
HM6218B33U4G-N	Enable can be set	3.3V	SOT343R
HM6218B33DRG-N	Enable can be set	3.3V	DFN1*1-4 (0.37)
HM6218B36DRG-N	Enable can be set	3.6V	DFN1*1-4 (0.37)
HM6218B25D6G-N	Enable can be set	2.5V	DFN2*2-6(0.75)
HM6218H15M5G-N	Enable connected to a low	1.5V	SOT23-5

NOTE: At present ,there are fourteen kinds of voltage value：

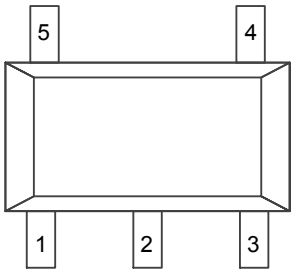
0.8V、1.0、1.2V、1.5V、1.8V、2.1V、2.5V、2.7V、2.8V、2.9V、3.0V、3.3V、3.6V、5.0V。

If you need other voltage and package, please contact our sales staff。

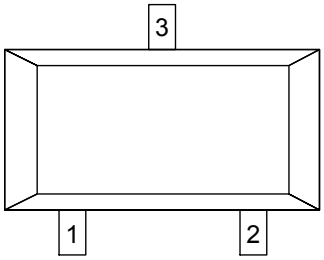
Pin Configuration



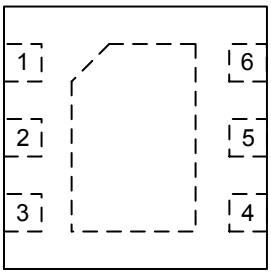
SOT89-3



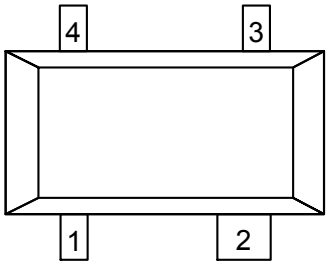
SOT23-5/SOT353



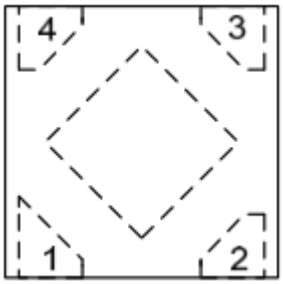
SOT23-3



DFN2*2-6



SOT343R



DFN1*1-4

Pin Assignment

HM6218AXXG

Pin Number			Pin Name	Functions
MR	P	P1		
SOT23-3	SOT89-3	SOT89-3		
1	1	2	V_{SS}	Ground
2	3	1	V_{OUT}	Output
3	2	3	V_{IN}	Power Input

The difference of printing on the chip between P and P1 is : P：6211A , P1：6211A1

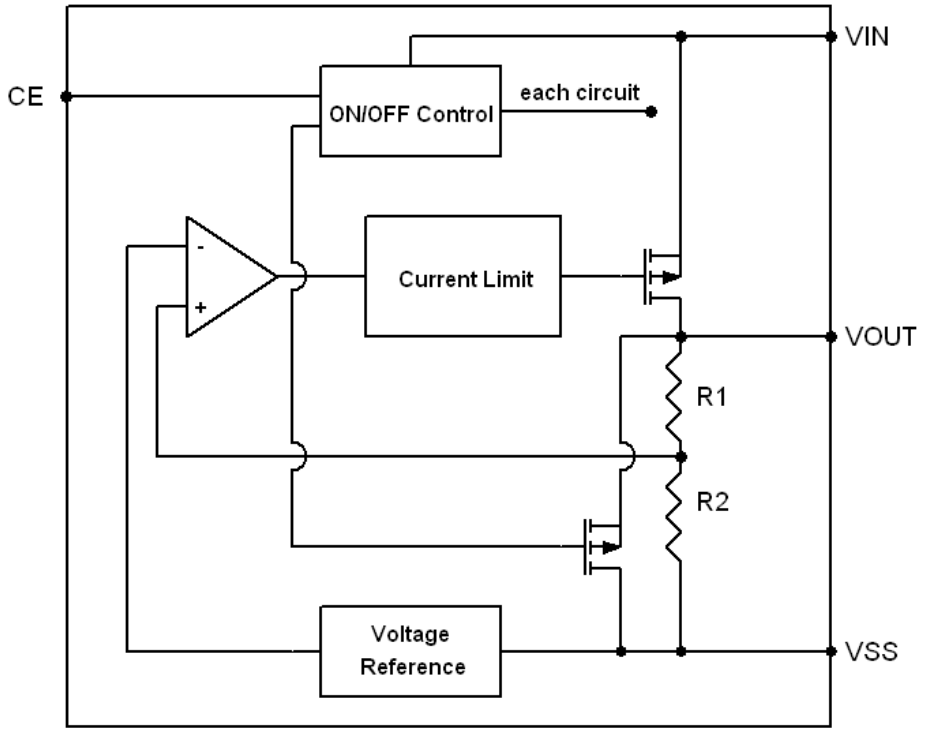
HM6218AXXG-DS

Pin Number	Pin Name	Functions
SOT23-3		
1	V_{IN}	Power Input
2	V_{OUT}	Output
3	V_{SS}	Ground

HM6218BXXG/ HM6218HXXG

Pin Number				Pin Name	Functions
SOT23-5/SOT353	DFN2*2-6	SOT343R	DFN1*1-4		
1	3	4	4	V_{IN}	Power Input
2	2	2	2	V_{SS}	Ground
3	1	1	3	CE	ON / OFF Control
4	5,6	-	-	NC	No Connect
5	4	3	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	SOT23-3	P_D	0.54	W
	SOT23-5		0.60	
	SOT353		0.45	
	DFN2*2-6		1.32	
	SOT89-3		1.25	
	SOT343R		0.45	
	DFN1*1-4		0.5	
Thermal resistance (Junction to air)	SOT23-3	θ_{JA}	230	℃/W
	SOT23-5		210	
	SOT353		270	
	DFN2*2-6		95	
	SOT89-3		100	
	SOT343R		270	
	DFN1*1-4		250	
Operating Ambient Temperature Range		T_{OPR}	-40 ~ +85	℃
Storage Temperature Range		T_{STG}	-55 ~ +150	℃
Junction temperature		T_J	-40 ~ +150	℃

Electrical Characteristics

HM6218B08 (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}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	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			7		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			600		mV
	V_{DIF2}	I_{OUT} =200mA			850		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V+1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		

HM6218B10 (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}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			5		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			400		mV
	V_{DIF2}	I_{OUT} =200mA			650		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.035		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V+1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		

HM6218B12 (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}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			300		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			280		mV
	V_{DIF2}	I_{OUT} =200mA			500		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.03		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		

HM6218B15 (V_{IN}= V_{OUT}+1V, VCE = V_{IN}, C_{IN}=C_L=1uF, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			200		mV
	V_{DIF2}	I_{OUT} =200mA			400		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Shut up		1.0			V
CE “Low” Voltage	VCEL	Start down				0.5	V
Output noise	EN	I_{OUT} =40mA， 300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V+1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA, 10kHZ		62		dB

HM6218B18 (V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			200		mV
	V_{DIF2}	I_{OUT} =200mA			400		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V+1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		

HM6218B25 (V_{IN}= V_{OUT}+1V，V_{CE} = V_{IN}，C_{IN}=C_L=1uF，Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			400		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			110		mV
	V_{DIF2}	I_{OUT} =200mA			220		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.04		%/V
CE“High”Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN}=[V_{OUT}+1]V+1Vp-pAC	I_{OUT}=10mA, 1kHZ		70		dB
			I_{OUT}=100mA, 10kHZ		62		
			I_{OUT}=200mA, 10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}＝V_{IN}, V_{OUT}＝0V			60		mA

HM6218B28 (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}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			450		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			7		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			110		mV
	V_{DIF2}	I_{OUT} =200mA			220		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.04		%/V
CE“High”Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN}=[V_{OUT}+1]V+ 1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}＝V_{IN}, V_{OUT}＝0V			65		mA

HM6218B30 (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}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			500		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			100		mV
	V_{DIF2}	I_{OUT} =200mA			210		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}＝V_{IN}, V_{OU}＝0V			65		mA

HM6218B33 (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}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			500		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			120		mV
	V_{DIF2}	I_{OUT} =200mA			260		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-byCurrent	I_{CEL}	V_{CE}＝0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}＝V_{IN}, V_{OUT}＝0V			70		mA

HM6218B33 （SOT343R.DFN1*1-4.SOT353）

(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}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			400		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			120		mV
	V_{DIF2}	I_{OUT} =200mA			260		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-byCurrent	I_{CEL}	V_{CE}＝0V			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Start up		1.0			V
CE “Low” Voltage	VCEL	Shut down				0.5	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}＝V_{IN}, V_{OUT}＝0V			70		mA

HM6218B36 (V_{IN}= V_{OUT}+1V,V_{CE} = V_{IN},C_{IN}=C_L=1uF,Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V	X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V		400		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		100		mV
	V_{DIF2}	I_{OUT} =200mA		200		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V		40	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Start up	1.0			V
CE “Low” Voltage	VCEL	Shut down			0.5	V
Output noise	EN	I_{OUT} =40mA， 300Hz~50kHz		50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC; I_{OUT}=10mA,1kHZ		70		dB
		I_{OUT}=100mA,10kHZ		62		
		I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}＝V_{IN}, V_{OUT}＝0V		100		mA

HM6218B50 (V_{IN}= V_{OUT}+1V， V_{CE} = V_{IN}， C_{IN}=C_L=1uF， Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V	X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V		500		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		100		mV
	V_{DIF2}	I_{OUT} =200mA		200		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V		40	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} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V		0.05		%/V
CE “High” Voltage	VCEH	Start up	1.0			V
CE “Low” Voltage	VCEL	Shut down			0.7	V
Output noise	EN	I_{OUT} =40mA， 300Hz~50kHz		50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} I_{OUT}=10mA,1kHZ		70		dB

		+1]V +1Vp-pAC	I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}=V_{IN}, V_{OUT}=0V			100		mA

HM6218A30 (V_{IN}= V_{OUT}+1V，$C_{IN=}C_L$=1uF，Ta=25^{O}C, unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			500		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			100		mV
	V_{DIF2}	I_{OUT} =200mA			210		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
Output noise	EN	I_{OUT} =40mA， 300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{CE}=V_{IN}, V_{OUT}=0V			65		mA

HM6218A33 (V_{IN}= V_{OUT}+1V，$C_{IN=}C_L$=1uF，Ta=25^{O}C,unless otherwise noted)

Parameter	Symbol	Conditions		Min.	Typ.	Max.	Units
Output Voltage	V_{OUT}(E) (Note 2)	I_{OUT}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			500		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			120		mV
	V_{DIF2}	I_{OUT} =200mA			260		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.1	1.0	%/V
Output noise	EN	I_{OUT} =40mA， 300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} =[V_{OUT}+1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{OUT}=0V			70		mA

HM6218A25 (V_{IN}= V_{OUT}+1V，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}=30mA, V_{IN}= V_{OUT}+1V		X 0.99	V_{OUT} (T) (Note 1)	X 1.01	V
Maximum Output Current	I_{OUTMAX}	V_{IN}= V_{OUT}+1V			400		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			80		mV
	V_{DIF2}	I_{OUT} =200mA			180		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.1	1.0	%/V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V +1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB
			I_{OUT}=100mA,10kHZ		62		
			I_{OUT}=200mA,10kHZ		62		
Short-circuit Current	I_{SHORT}	V_{IN}= V_{OUT}+1V, V_{OUT}＝0V			60		mA

HM6218H15 (V_{IN}= V_{OUT}+1V，V_{CE} = GND，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}=30mA, 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			300		mA
Load Regulation	ΔV_{OUT}	V_{IN}= V_{OUT}+1V , 1mA≤I_{OUT}≤100mA			9		mV
Dropout Voltage (Note 3)	V_{DIF1}	I_{OUT} =100mA			200		mV
	V_{DIF2}	I_{OUT} =200mA			400		mV
Supply Current	I_{SS}	V_{IN}= V_{OUT}+1V			30	60	μA
Stand-by Current	I_{CEL}	V_{CE}＝V_{IN}			0.1	1.0	μA
Line Regulation	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \bullet V_{OUT}}$	I_{OUT} =30mA V_{OUT}+1V ≤V_{IN}≤6.5V			0.05		%/V
CE “High” Voltage	VCEH	Shut down		1.0			V
CE “Low” Voltage	VCEL	Start up				0.4	V
Output noise	EN	I_{OUT} =40mA，300Hz~50kHz			50		uVrms
Ripple Rejection Rate	PSRR	V_{IN} = [V_{OUT} +1]V+1Vp-pAC	I_{OUT}=10mA,1kHZ		70		dB

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)’

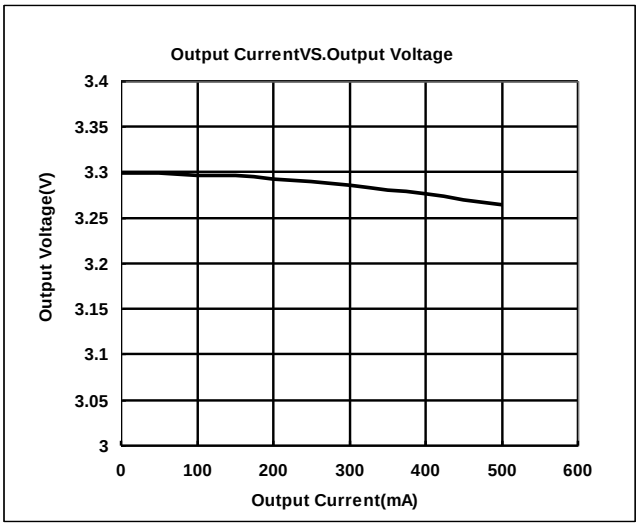
V_{IN1} ： The input voltage when V_{OUT}(E)’ appears as input voltage is gradually decreased.

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

（1）Output CurrentVS.Output Voltage（VIN=Vout+1, **Ta = 25 °C**）

HM6218B33M5G



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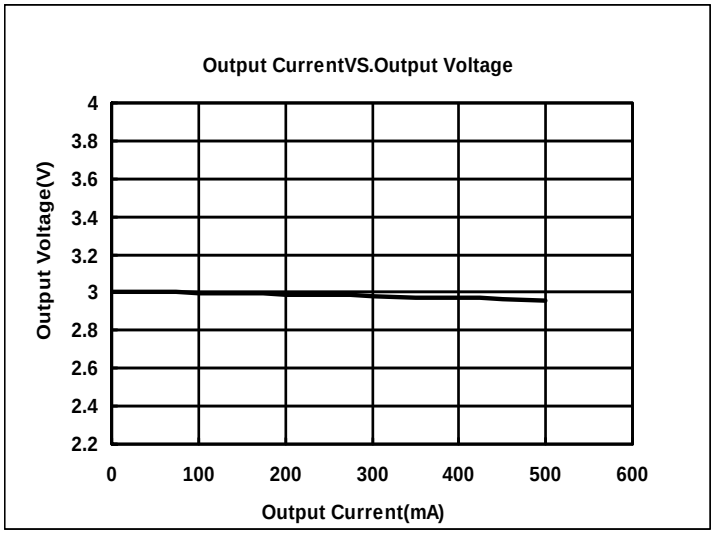

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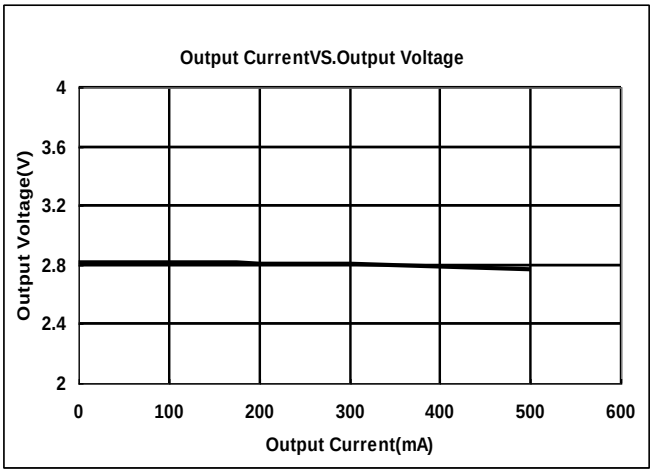

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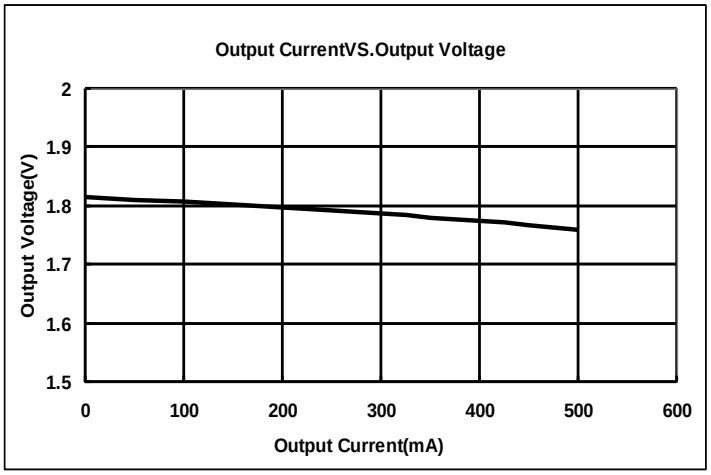

（2）Input VoltageVS.Output Voltage（**Ta = 25 °C**）

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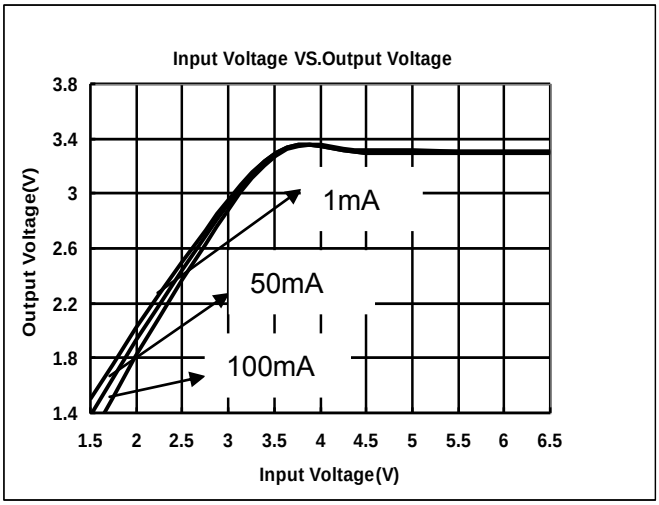

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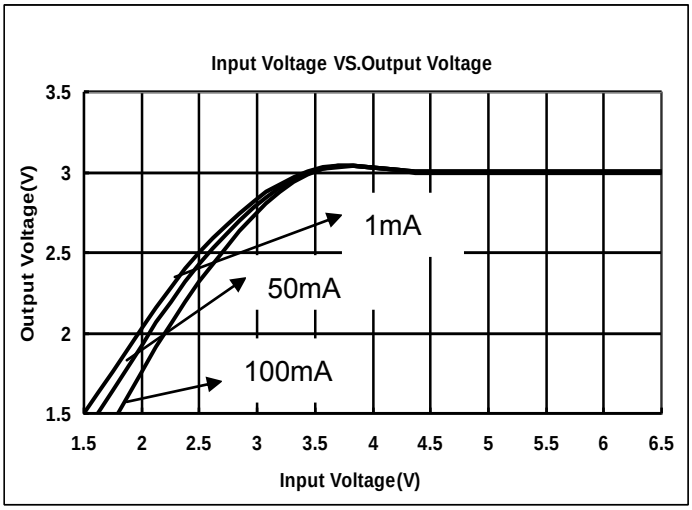

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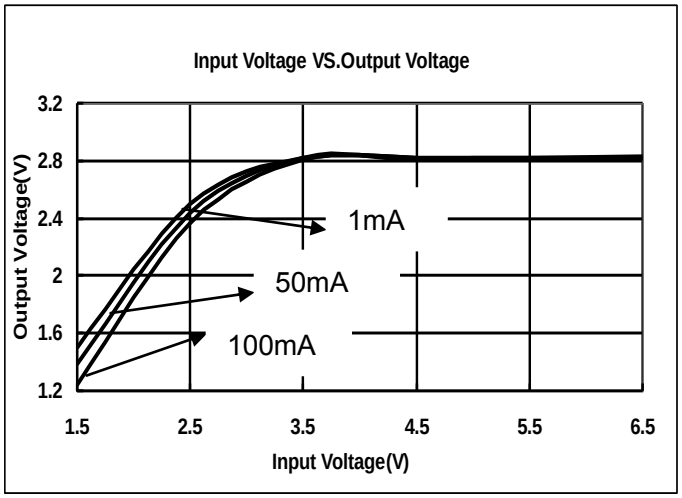

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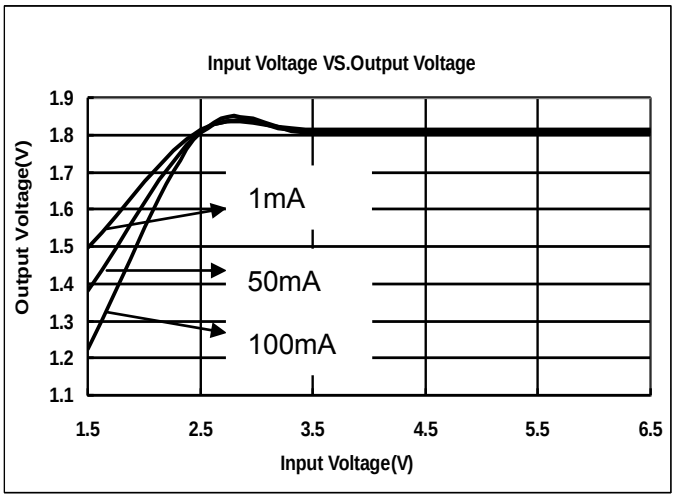

（3）Output Current VS.Droput Voltage（VIN=Vout+1V,**Ta = 25 °C**）

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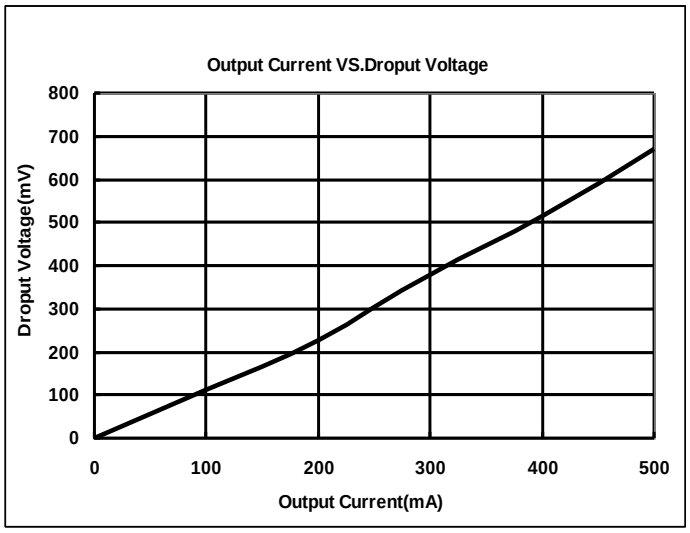

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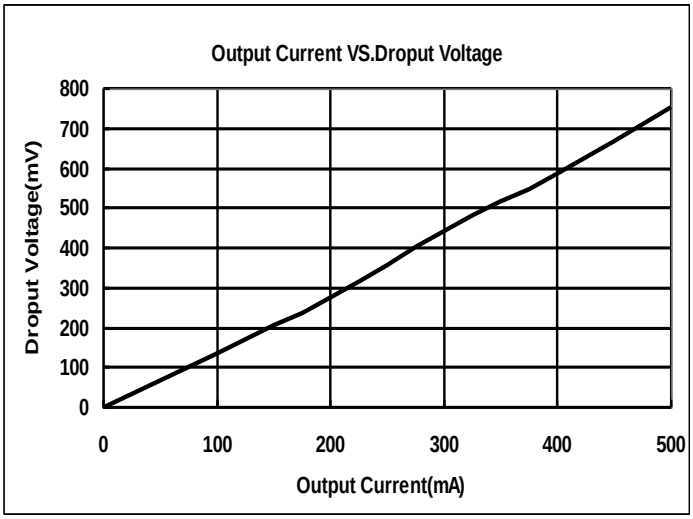

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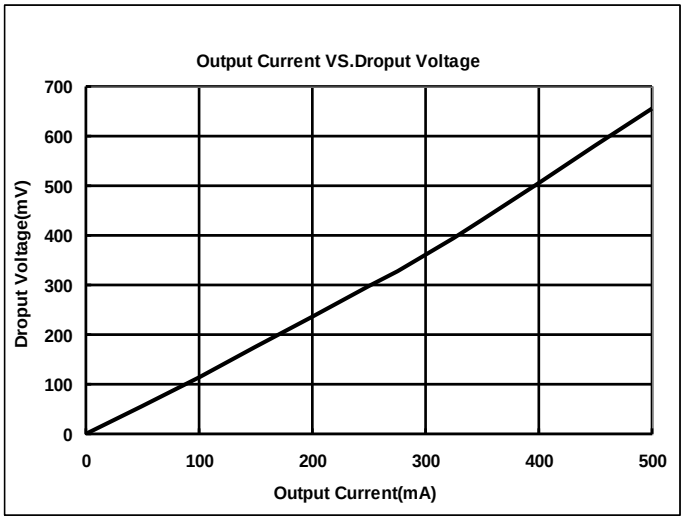

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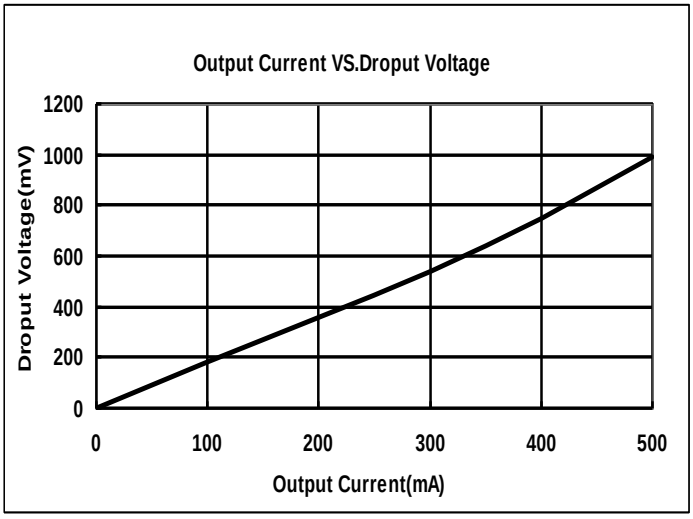
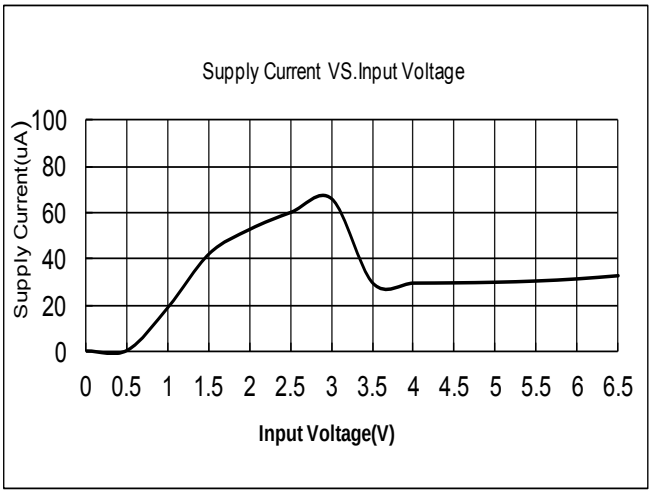


（4）Input Voltage VS. Supply Current（**Ta = 25 °C**）

HM6218B33M5G



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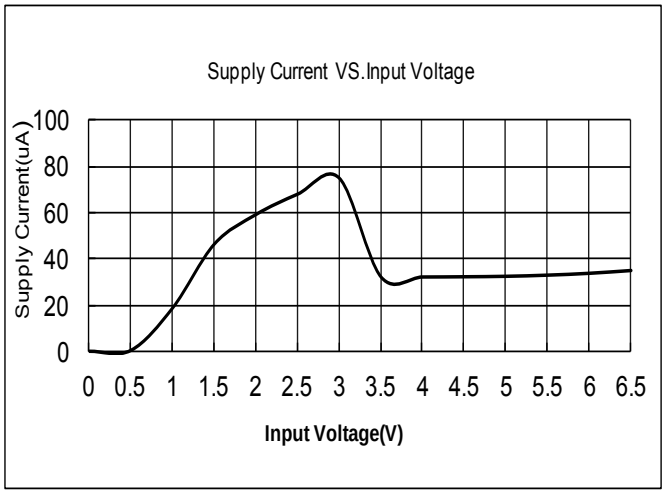

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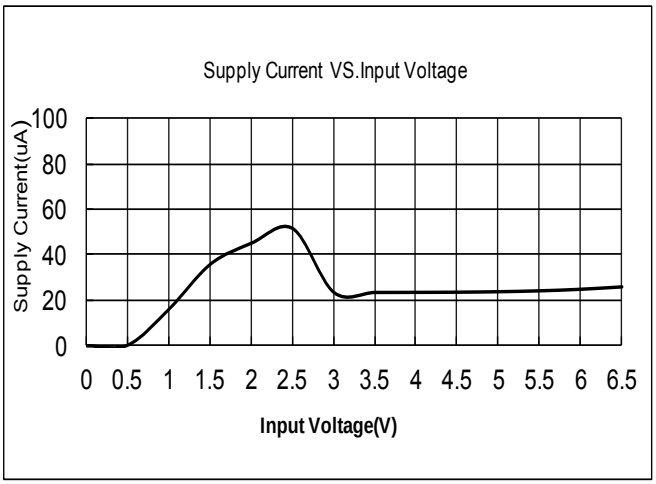

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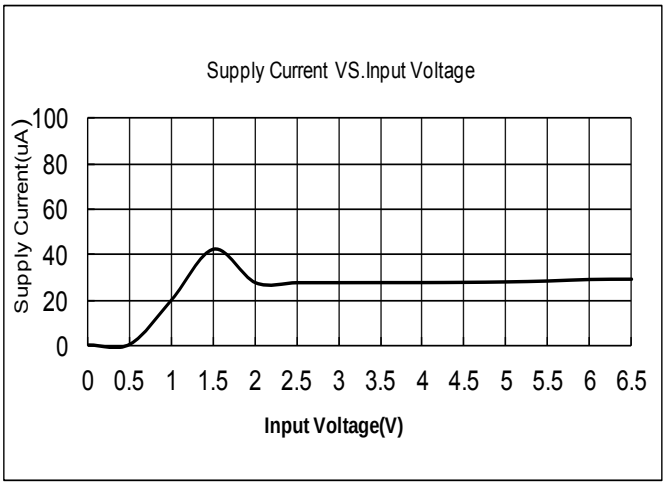
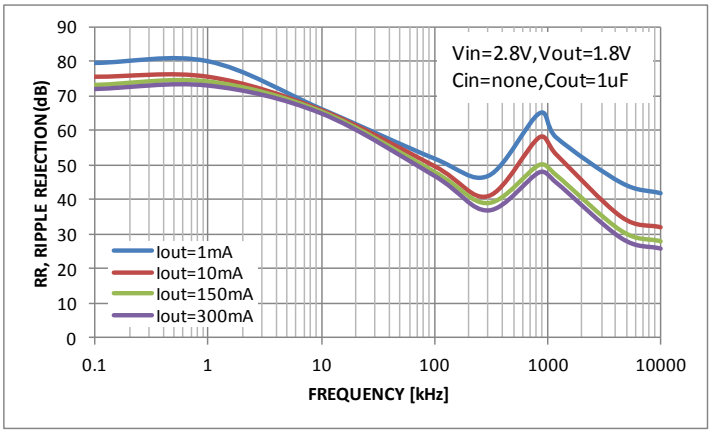


（5）PSRR

HM6218B18M5G



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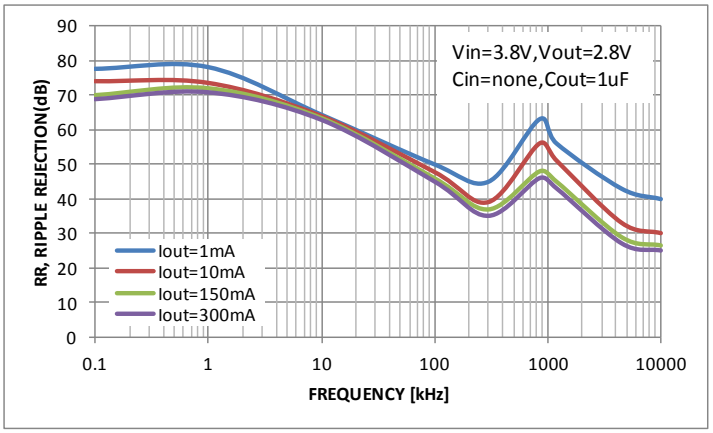
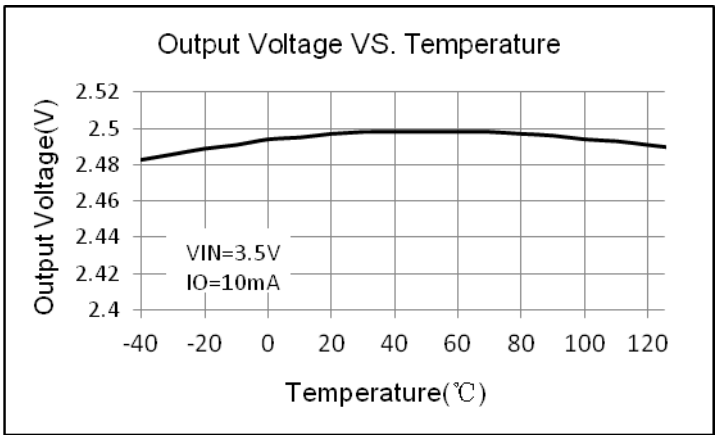


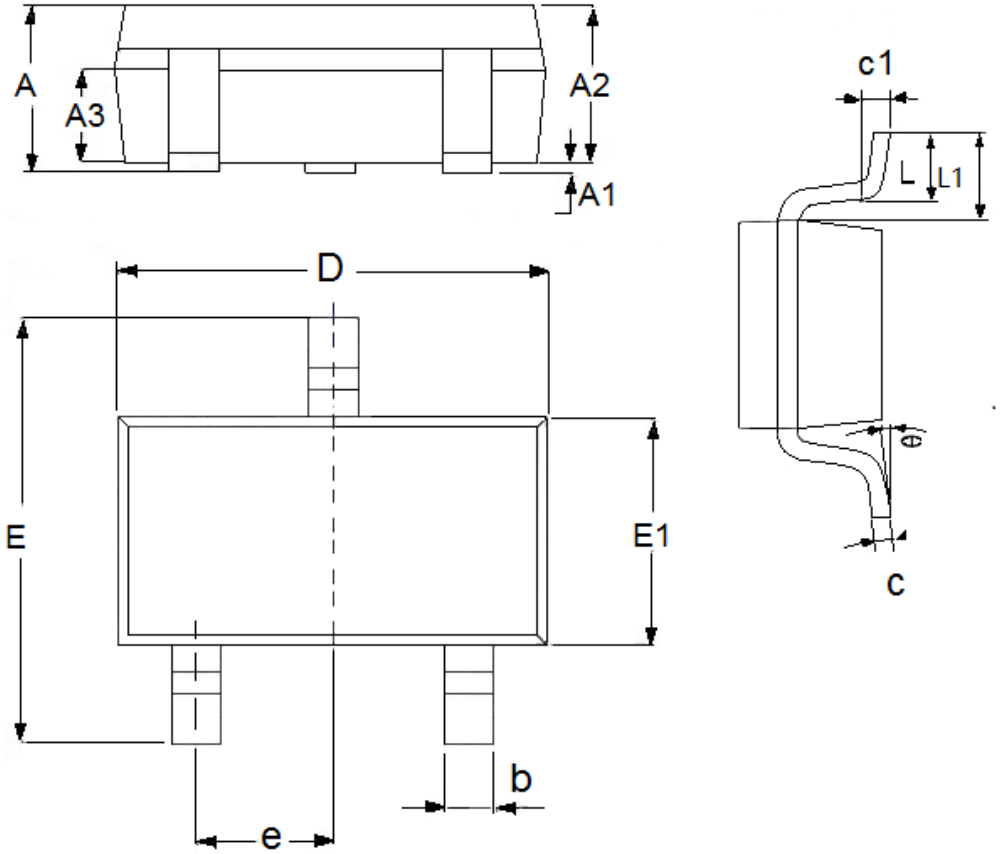
（6）Temperature vs. Output Voltage

HM6218B25



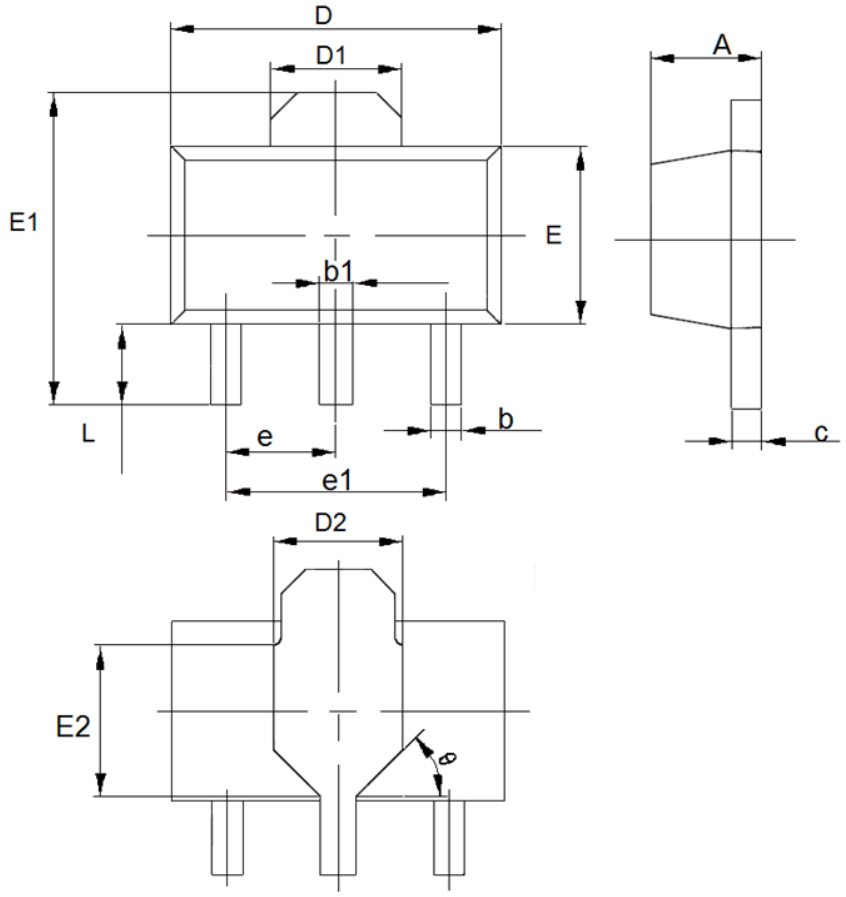
Packaging Information

- **Package Type：SOT23-3**



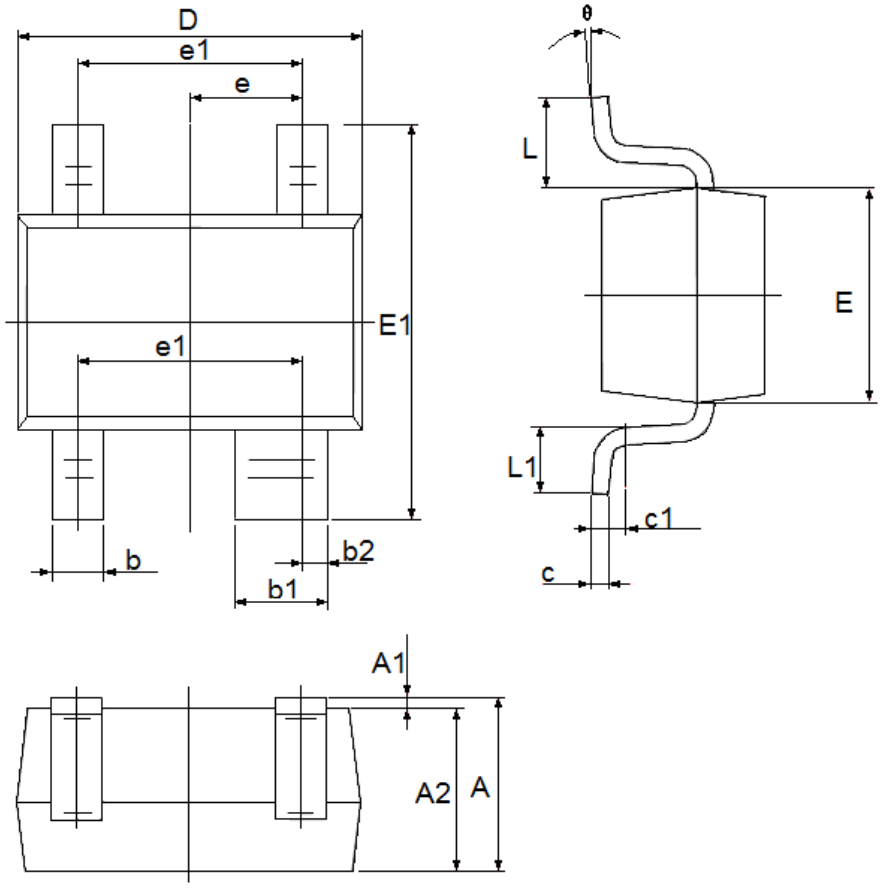
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.05	1.45	0.0413	0.0571
A1	0	0.15	0.0000	0.0059
A2	0.9	1.3	0.0354	0.0512
A3	0.6	0.7	0.0236	0.0276
b	0.25	0.5	0.0098	0.0197
c	0.1	0.25	0.0039	0.0098
D	2.8	3.1	0.1102	0.1220
E	2.6	3.1	0.1023	0.1220
E1	1.5	1.8	0.0591	0.0709
e	0.95(TYP)		0.0374(TYP)	
L	0.25	0.6	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：SOT89-3**



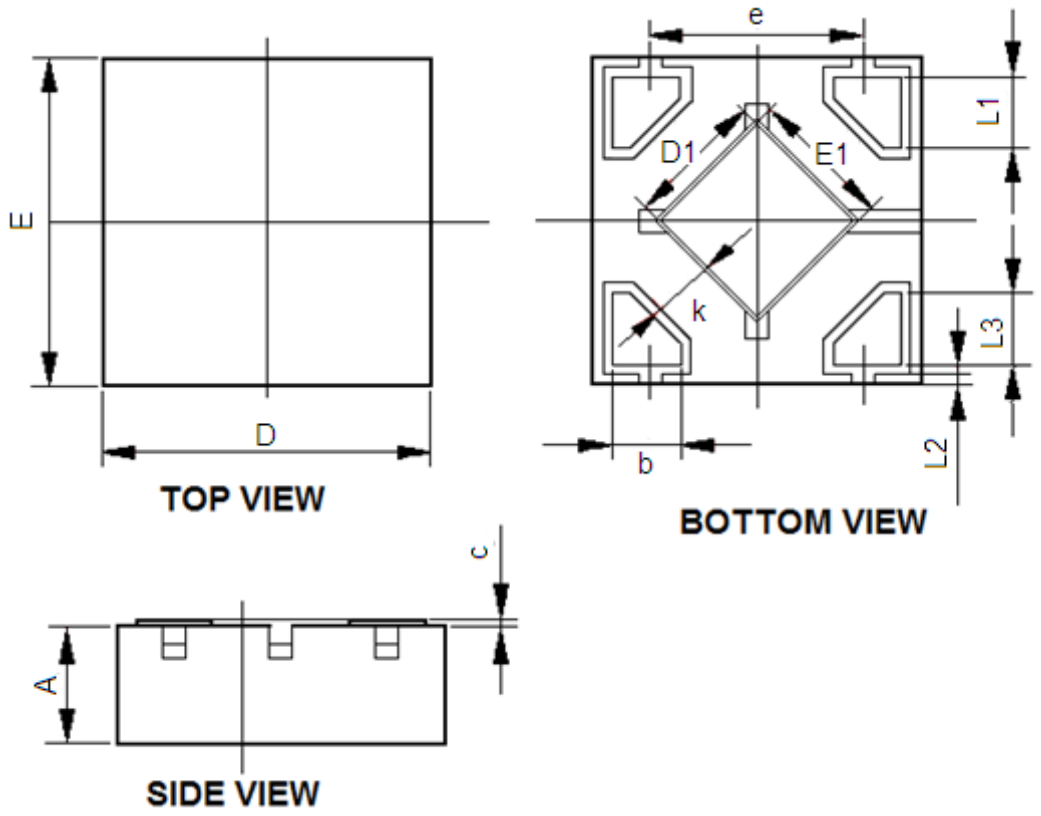
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.4	1.6	0.0551	0.063
b	0.32	0.52	0.0126	0.0205
b1	0.4	0.58	0.0157	0.0228
c	0.35	0.45	0.0138	0.01772
D	4.4	4.6	0.1732	0.1811
D1	1.55(TYP)		0.061(TYP)	
D2	1.75(TYP)		0.0689(TYP)	
e1	3(TYP)		0.1181(TYP)	
E	2.3	2.6	0.0906	0.1023
E1	3.94	4.4	0.1551	0.1732
E2	1.9(TYP)		0.0748(TYP)	
e	1.5(TYP)		0.0591(TYP)	
L	0.8	1.2	0.0315	0.0472
θ	45°		45°	

- **Package Type：SOT343R**



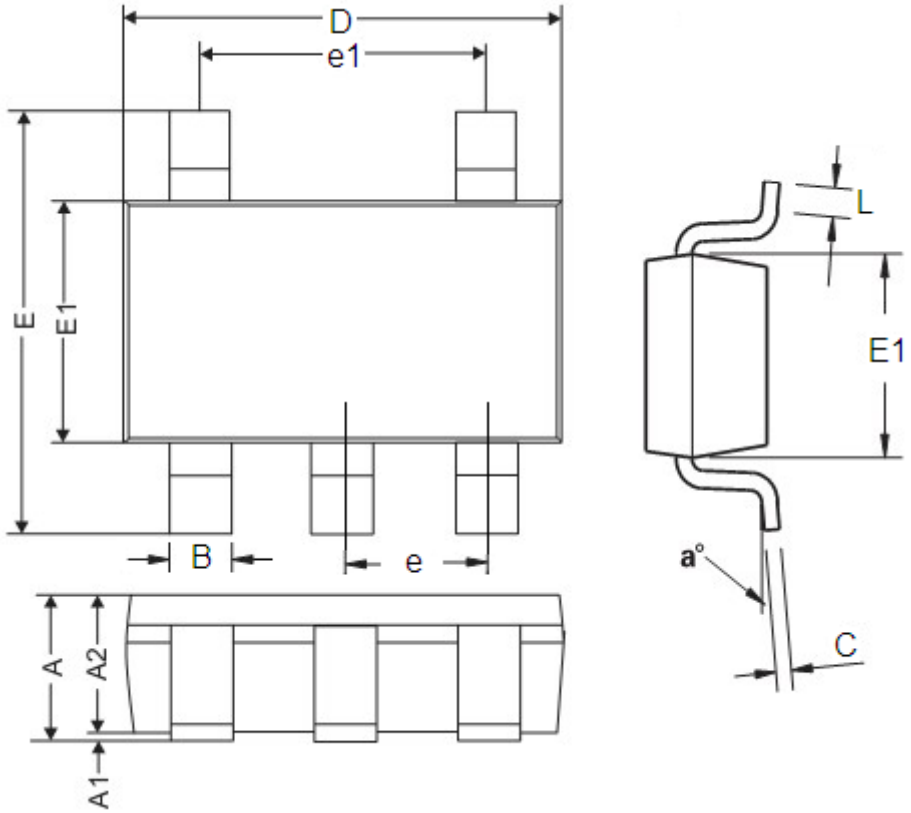
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
b1	0.350	0.500	0.014	0.020
b2	0.075	0.175	0.003	0.007
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.1	1.4	0.0433	0.0551
E1	2.1	2.5	0.0827	0.0984
e	0.65TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525TYP		0.021TYP	
L1	0.260	0.460	0.010	0.018
θ	0.000	8°	0	8°
c1	0.2TYP		0.0079TYP	

- **Package Type**：DFN1*1-4



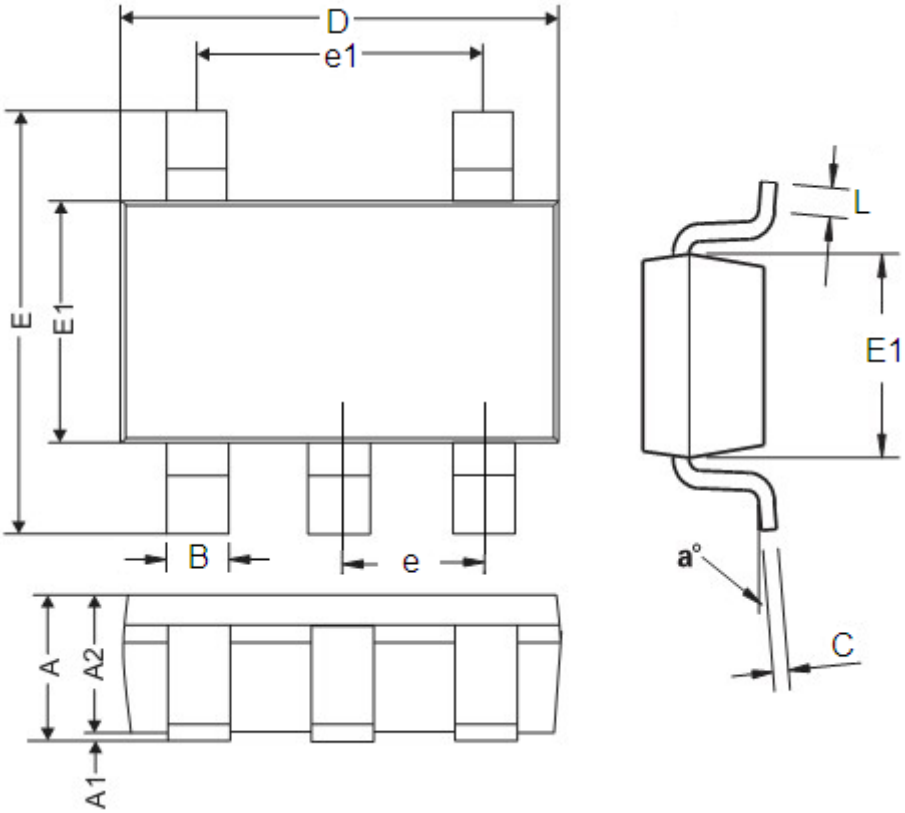
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.335	0.410	0.013	0.016
D	0.950	1.100	0.037	0.043
E	0.950	1.100	0.037	0.043
D1	0.370	0.470	0.015	0.019
E1	0.370	0.470	0.015	0.019
k	0.170MIN		0.007MIN	
b	0.160	0.260	0.060	0.010
C	0.010	0.090	0.000	0.004
e	0.600	0.700	0.024	0.028
L1	0.185	0.255	0.007	0.010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

- **Package Type：SOT23-5**



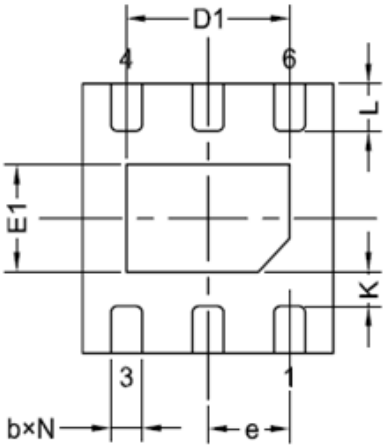
DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.05	1.45	0.0413	0.0570
A1	0	0.15	0	0.0059
A2	0.9	1.3	0.0354	0.0511
B	0.25	0.5	0.0098	0.0196
C	0.10	0.23	0.0039	0.0090
D	2.82	3.05	0.1110	0.1200
E	2.60	3.05	0.1023	0.1200
E1	1.50	1.75	0.0590	0.0688
e	0.95REF		0.0374REF	
e1	1.90REF		0.0748REF	
L	0.10	0.60	0.0039	0.0236
a^0	0^0	30^0	0^0	30^0

- **Package Type：SOT353**

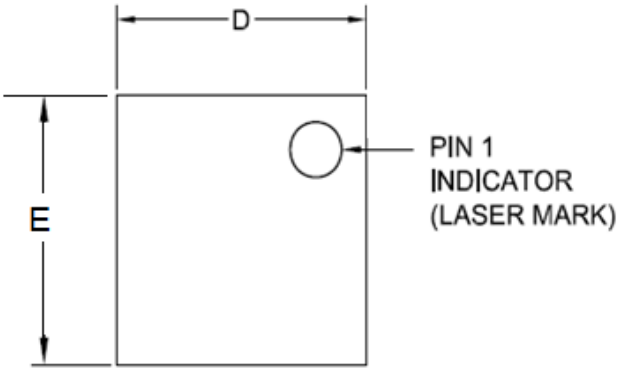


DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.9	1.1	0.035	0.043
A1	0.0	0.10	0.00	0.004
A2	0.9	1.0	0.035	0.039
B	0.15	0.35	0.006	0.014
C	0.08	0.15	0.003	0.006
D	2.0	2.2	0.079	0.087
E	2.15	2.45	0.085	0.096
E1	1.15	1.35	0.045	0.096
e	0.65 REF		0.026 REF	
e1	1.20	1.4	0.047	0.055
L	0.26	0.46	0.01	0.018
a^0	0^0	8^0	0^0	8^0

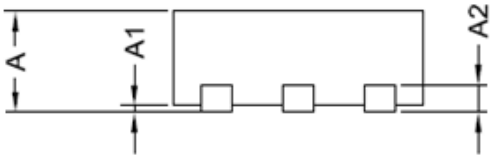
- **Package Type：DFN2*2-6**



BOTTOM VIEW



TOP VIEW



SIDE VIEW

DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.7	0.8	0.0276	0.0315
A1	0	0.05	0	0.002
A2	0.203(TYP)		0.008(TYP)	
b	0.2	0.35	0.0078	0.0138
D	1.9	2.1	0.0748	0.0827
E	1.9	2.1	0.0748	0.0827
E1	0.5	0.9	0.0197	0.0354
e	0.65(TYP)		0.0256(TYP)	
L	0.25	0.426	0.0098	0.0168
K	0.2	—	0.0079	—
D1	1	1.45	0.0393	0.0571