

描述 / Descriptions

BRCO2600MC 是一款以 CMOS 工艺制造的超快响应、高电源抑制比、低噪声的低压差线性稳压器。其极佳的高速响应特性能应付负载电流的波动,所以特别适合使用于手持及射频产品上。BRCO2600MC is a low-dropout linear regulator with ultra-fast response, high power supply rejection ratio, and low noise manufactured by CMOS process. Its excellent high-speed response characteristics can cope with the fluctuation of load current, so it is especially suitable for handheld and radio frequency products.

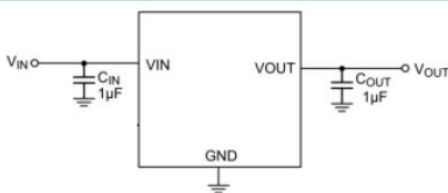
特征 / Features

- ◆ 低输出噪声 Low Output Noise : 40uVrms (10Hz~100kHz)
- ◆ 低压差Low Dropout Voltage : 150mV@150mA
- ◆ 低静态工作电流Low Quiescent Current : 50uA
- ◆ 输出电流Output Current : 300mA
- ◆ 高电源抑制比High Ripple Rejection : 75dB@1kHz
- ◆ 出色的输入线性和输出负载瞬态响应。Excellent Line and Load Transient Response.
- ◆ 工作电压范围Operating Voltage Range : 2.0V~6.0V
- ◆ 输出电压范围Output Voltage Range : 1.2V~5.0V
- ◆ 高精度High Accuracy : ±2%
- ◆ 内置电流限制, 短路保护。Built-in Current Limiter, Short-Circuit Protection.
- ◆ SOT23-3封装, 无卤产品。SOT23-3 Package , HF Product.

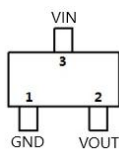
用途 / Applications

- ◆ 使用电池供电设备的稳压电源。Regulated power supply using battery-powered equipment.
- ◆ 通信设备的稳压电源。Regulated power supply for communication equipment.
- ◆ 家电玩具的稳压电源。Regulated power supply for home appliances and toys.
- ◆ 移动电话的稳压电源。Regulated power supply for mobile phones.
- ◆ 便携式医用仪器的稳压电源。Regulated power supply for portable medical instruments.

典型应用电路图 / Typical Application



引脚排列 / Pinning



引脚 PIN	名称 NAME	功能 FUNCTION	引脚 PIN	名称 NAME	功能 FUNCTION
1	GND	电源地Ground Pin	3	VIN	电压输入端Voltage input terminal
2	VOUT	电压输出端Voltage output terminal			

型号 & 印章 / Part Number & Marking

型号 Type Number	输出电压 Output Voltage (V)	印章 Marking
BRCO2600MC-1.2	1.2	见印章说明。See Marking Instructions.
BRCO2600MC-1.5	1.5	
BRCO2600MC-1.8	1.8	
BRCO2600MC-2.5	2.5	
BRCO2600MC-2.8	2.8	
BRCO2600MC-3.0	3.0	
BRCO2600MC-3.3	3.3	

极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
输入电压Input Voltage	V_{IN}	-0.3 to 7	V
输出电压Output Voltage	V_{OUT}	-0.3 to ($V_{IN}+0.3$)	V
输出电流Output Current	I_{OUT}	600	mA
耗散功率Power Dissipation	P_D	0.4	W
储存温度Storage Temperature	T_{stg}	-65 to +150	°C
工作温度Operating Temperature	T_A	-40 to +85	°C
管脚焊接温度Lead Temperature(Soldering, 10 sec)	T_{sold}	260	°C

电性能参数 / Electrical Characteristics($T_A=25^\circ\text{C}$, $V_{IN}=V_{OUT}+1\text{V}$, $C_{IN}=C_{OUT}=1\mu\text{F}$, unless otherwise specified)

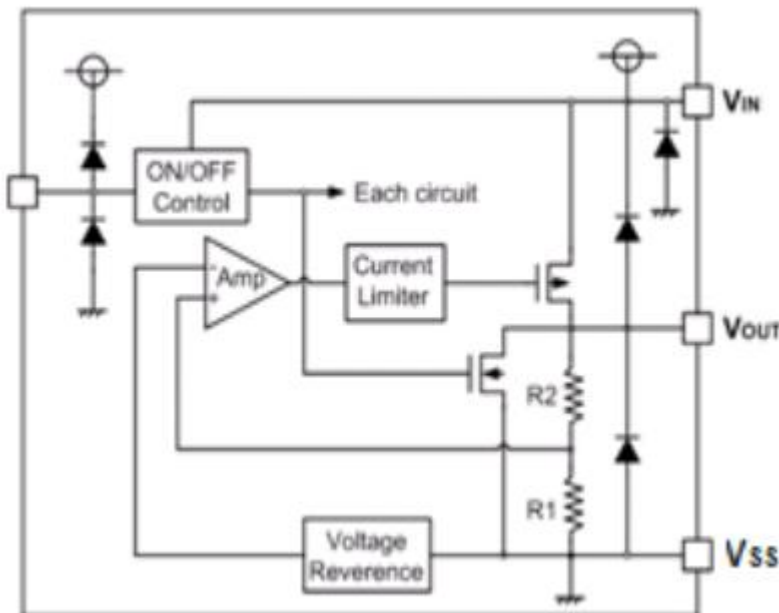
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
输入电压 Input Voltage	V_{IN}		2.0		6.0	V
输出电压 Output Voltage ⁽¹⁾	$V_{OUT(E)}$	$I_{OUT}=1\text{mA}$	$V_{OUT(S)}$ *0.98	$V_{OUT(S)}$	$V_{OUT(S)}$ *1.02	V
静态工作电流 Supply Current	I_{SS}	$I_{OUT}=0\text{mA}$		50	100	uA
输出电流 Output Current	I_{OUT}		300			mA
输入输出压差 Dropout Voltage ⁽²⁾	V_{dorop}	$I_{OUT}=150\text{mA}$ $V_{OUT(S)} \geq 2.8\text{V}$		150		mV

电性能参数 / Electrical Characteristics ($T_A=25^{\circ}\text{C}$, $V_{IN}=V_{OUT}+1\text{V}$, $C_{IN}=C_{OUT}=1\mu\text{F}$, unless otherwise specified)

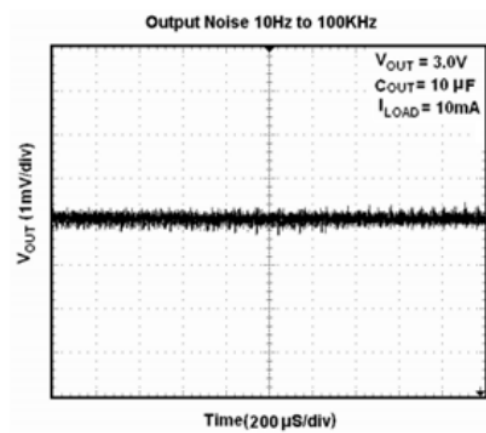
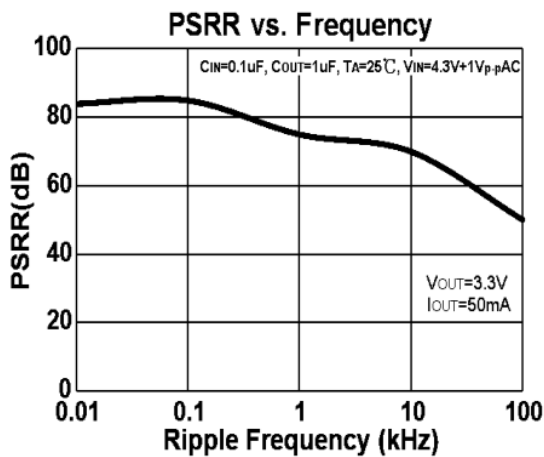
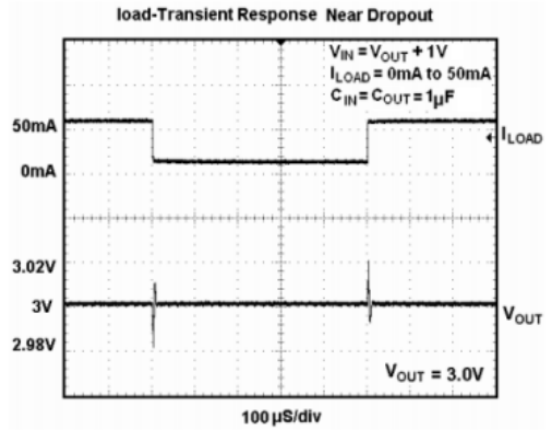
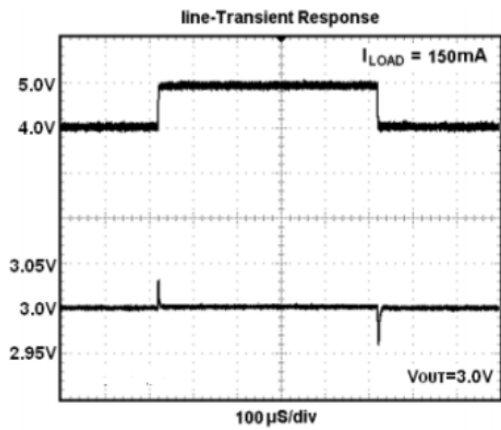
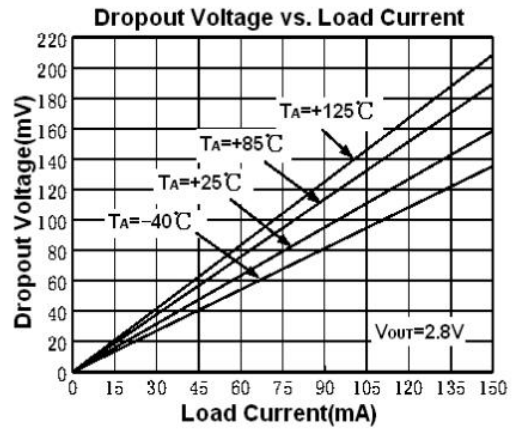
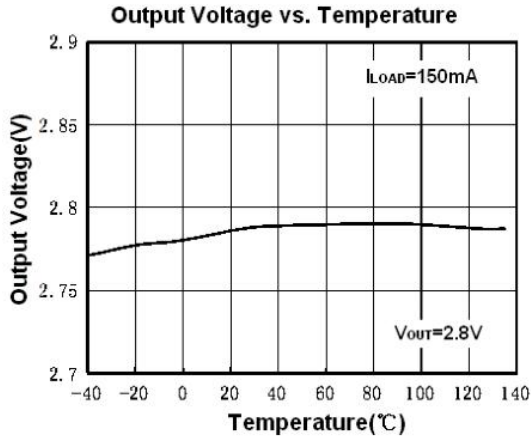
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
负载调整率 Load Regulation	ΔV_{load}	$V_{IN}=V_{OUT(S)}+1\text{V}$ $1\text{mA}\leq I_{OUT}\leq 100\text{mA}$		10		mV
线性调整率 Line Regulation	$\frac{\Delta V_{OUT}}{(\Delta V_{IN}\cdot V_{OUT})}$	$I_{OUT}=10\text{mA}$ $V_{OUT(S)}+1\text{V}\leq V_{IN}\leq 6\text{V}$		0.01	0.2	%/V
输出电压温度系数 Output Voltage Temperature Characteristics	$\frac{\Delta V_{OUT}}{(\Delta T_A\cdot V_{OUT})}$	$I_{OUT}=10\text{mA}$ $-40^{\circ}\text{C}\leq T_A\leq \pm 85^{\circ}\text{C}$		100		ppm/ $^{\circ}\text{C}$
输出短路电流 Short Current	Ishort	$V_{OUT}=V_{SS}$		100		mA
电源纹波抑制比 Power Supply Rejection Rate	PSRR	$I_{OUT}=50\text{mA}$, $f=217\text{Hz}$		80		dB
		$I_{OUT}=50\text{mA}$, $f=1\text{kHz}$		75		
		$I_{OUT}=50\text{mA}$, $f=10\text{kHz}$		70		

- (1) $V_{OUT(E)}$ 为实际输出电压, $V_{OUT(S)}$ 为设定的标称输出电压。 $V_{OUT(E)}$ is the actual output voltage, and $V_{OUT(S)}$ is the set nominal output voltage.
- (2) 输入输出电压差的定义: 固定负载条件下, 输出电压 V_{OUT} , 缓慢下降输入电压, 直至输出电压降低到 $V_{OUT}\cdot 98\%$ 时, 输入电压和输出电压的差值。 The definition of input and output voltage difference: under fixed load conditions, the output voltage V_{OUT} , slowly decrease the input voltage, until the output voltage drops to $V_{OUT}\cdot 98\%$, the difference between the input voltage and the output voltage.

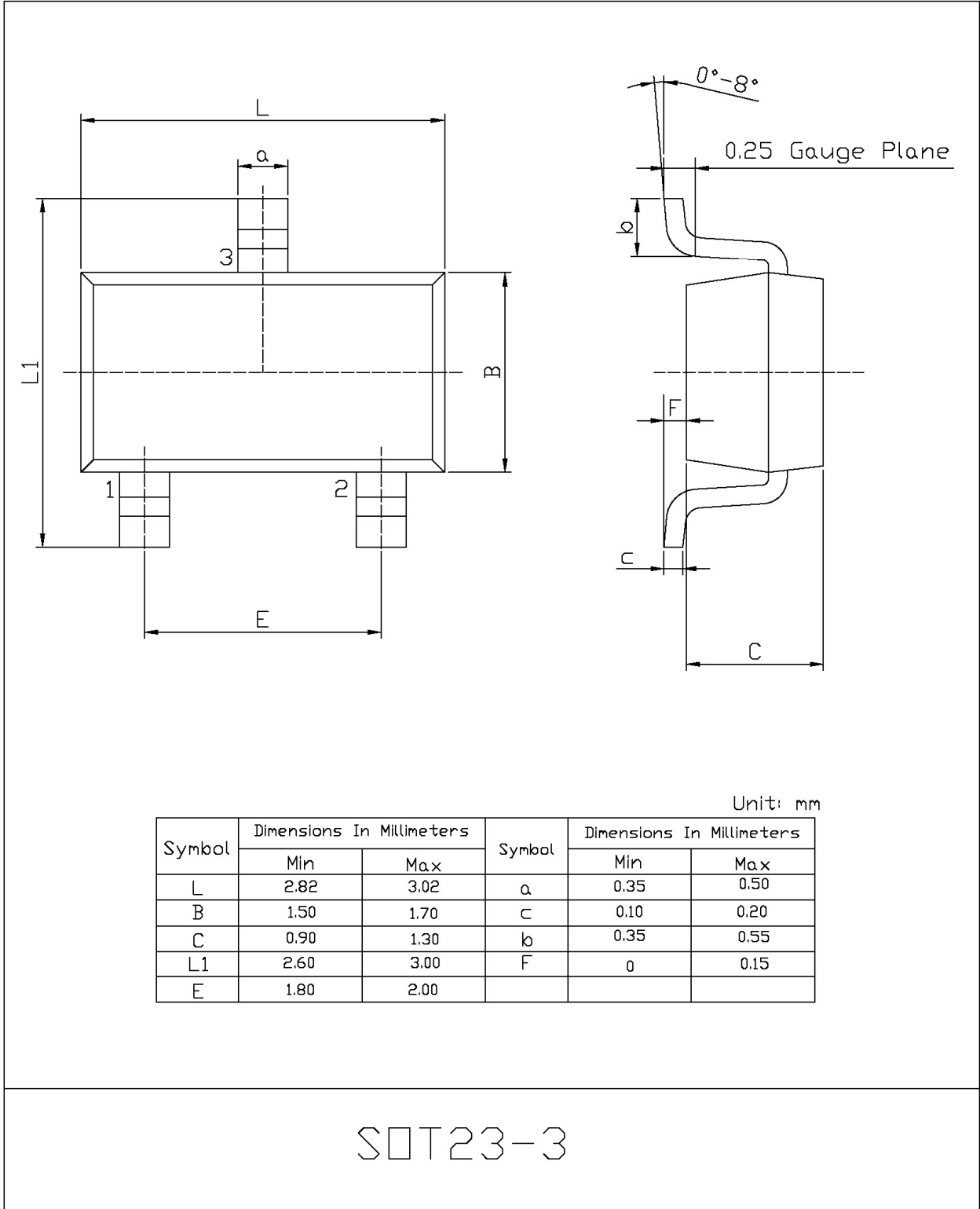
功能框图 / Functionl Block Diagram



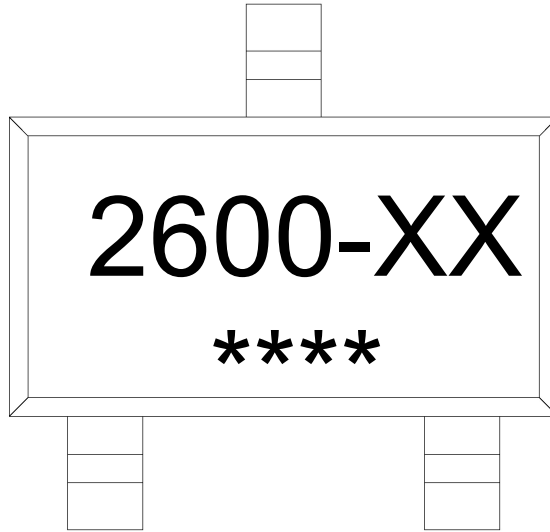
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions



印章说明 / Marking Instructions



说明：

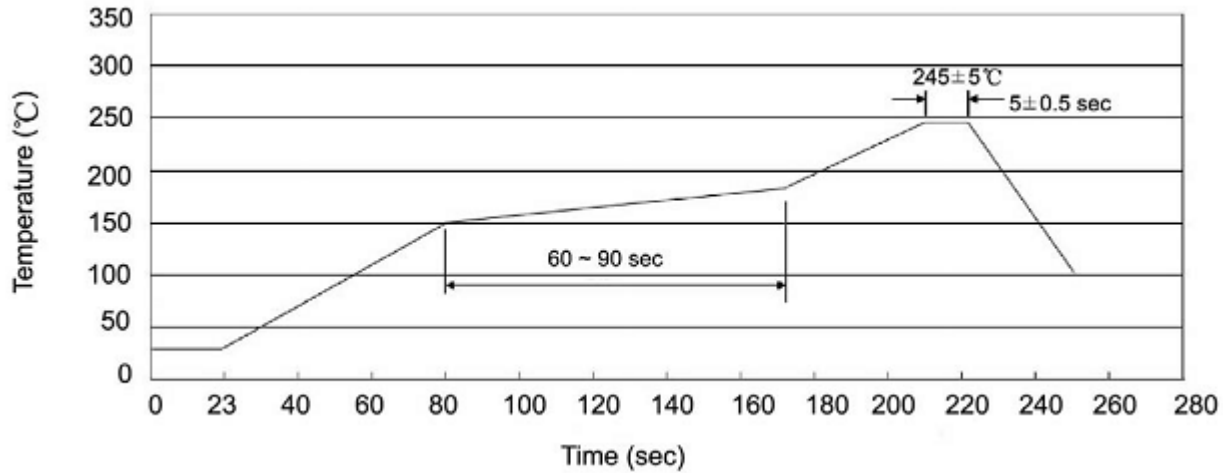
- 2600：为产品型号
- XX：代表输出电压，如下表所示
- ****：为生产批号代码，随生产批号变化。

Note：

- 2600：Product Type.
- XX：Represents the output voltage, as shown in the following table
- ****：Lot No. Code, code change with Lot No.

Type Number	Marking
BRCO2600MC-1.2	2600-12
BRCO2600MC-1.5	2600-15
BRCO2600MC-1.8	2600-18
BRCO2600MC-2.5	2600-25
BRCO2600MC-2.8	2600-28
BRCO2600MC-3.0	2600-30
BRCO2600MC-3.3	2600-33

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT23-3	3,000	10	30,000	4	120,000	7" × 8	210×205×205	435×225×420

使用说明 / Notices