

/ Descriptions

SOT-89

Voltage Regulator in a SOT-89 Plastic Package.

/ Features

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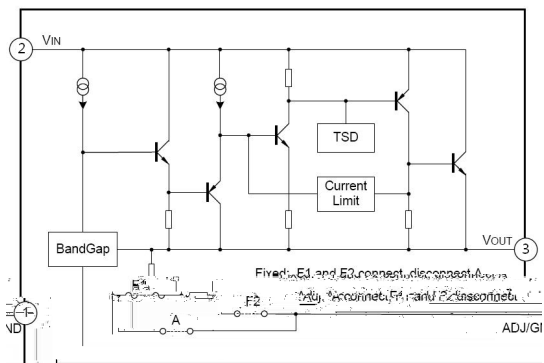
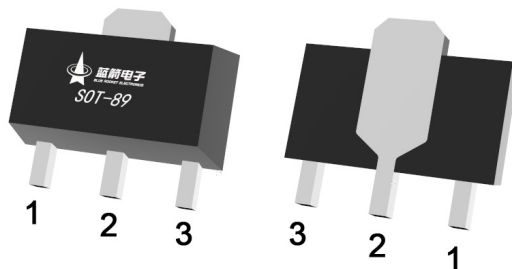
800mA,

AEC-Q100

High efficiency, Low dropout voltage.output current up to 800mA, internal current and thermal limit, Qualified to AEC-Q100 Standards for High Reliability, HF Product.

/ Applications

Voltage Regulator, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit or Application Circuit**/ Pinning**

Pin1 GND/ADJ Pin2 VOUT Pin3 VIN

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Input voltage	V_I	15	V
Storage temperature range	T_{stg}	-40 150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Type	Test Conditions	Min	Typ	Max	Unit
Reference Voltage	V_{ref}	BRLD1117TQ- Adj	$V_{in}-V_o=2V \quad T_j=25$ $I_o=10mA$	1.225	1.25	1.275	V
			$10mA \leq I_o \leq 800mA$ $1.4V \leq (V_{in}-V_o) \leq 10V$	1.225	1.25	1.275	
Output Voltage	V_o	BRLD1117TQ-1.2	$V_{in}=3.2V \quad T_j=25$ $I_o=10mA$	1.176	1.2	1.224	V
			$10mA \leq I_o \leq 800mA$, $3V \leq V_{in} \leq 8V$	1.176	1.2	1.224	
		BRLD1117TQ-1.8	$V_{in}=3.8V \quad T_j=25$ $I_o=10mA$	1.764	1.8	1.836	V
			$0 \leq I_o \leq 800mA$, $3.3V \leq V_{in} \leq 8V$	1.764	1.8	1.836	
		BRLD1117TQ-2.5	$V_{in}=4.5V \quad T_j=25$ $I_o=10mA$	2.45	2.5	2.55	V
			$0 \leq I_o \leq 800mA$, $3.9V \leq V_{in} \leq 10V$	2.45	2.5	2.55	
		BRLD1117TQ-3.3	$V_{in}=5.3V \quad T_j=25$ $I_o=10mA$	3.234	3.3	3.366	V
			$0 \leq I_o \leq 800mA$, $4.75V \leq V_{in} \leq 10V$	3.234	3.3	3.366	
		BRLD1117TQ-5.0	$V_{in}=7V \quad T_j=25$ $I_o=10mA$	4.9	5	5.1	V
			$0 \leq I_o \leq 800mA$, $6.5V \leq V_{in} \leq 15V$	4.9	5	5.1	
Load Regulation	V_o	BRLD1117TQ-Adj	$V_{in}-V_o=3V$ $10mA \leq I_o \leq 800mA$			30	mV
		BRLD1117TQ-1.2	$V_{in}=3V$ $10mA \leq I_o \leq 800mA$			30	mV
		BRLD1117TQ-1.8	$V_{in}=3.3V$ $0mA \leq I_o \leq 800mA$			30	mV
		BRLD1117TQ-2.5	$V_{in}=3.9V$ $0mA \leq I_o \leq 800mA$			30	mV
		BRLD1117TQ-3.3	$V_{in}=4.75V$ $0mA \leq I_o \leq 800mA$			30	mV
		BRLD1117TQ-5.0	$V_{in}=6.5V$ $0mA \leq I_o \leq 800mA$			30	mV

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Type	Test Conditions	Min	Typ	Max	Unit
Supply Voltage Rejection	SVR	BRLD1117TQ-Adj	I _o =40mA f=120Hz, T _j =25 V _{in} -V _o =3V, V _{ripple} =1V _{pp}	60	75		dB
		BRLD1117TQ-1.2					
		BRLD1117TQ-1.8					
		BRLD1117TQ-2.5					
		BRLD1117TQ-3.3					
		BRLD1117TQ-5.0					
Dropout Voltage	V _d	BRLD1117TQ-Adj	I _o =100mA I _o =500mA I _o =800mA		1.00 1.05 1.10	1.10 1.15 1.20	V
		BRLD1117TQ-1.2					
		BRLD1117TQ-1.8					
		BRLD1117TQ-2.5					
		BRLD1117TQ-3.3					
		BRLD1117TQ-5.0					
Thermal Regulation		BRLD1117TQ-Adj	T _a =25 30ms Pulse		0.01	0.1	%W
		BRLD1117TQ-1.2					
		BRLD1117TQ-1.8					
		BRLD1117TQ-2.5					
		BRLD1117TQ-3.3					
		BRLD1117TQ-5.0					

/ Typical Application Circuit

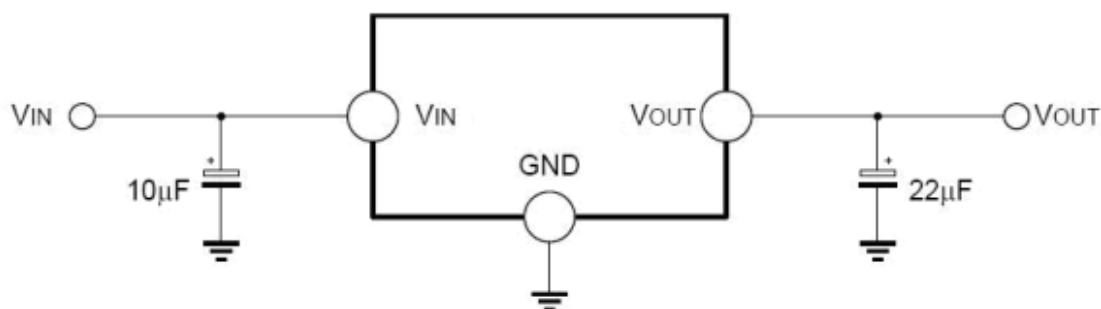


图 1.典型固定输出电压

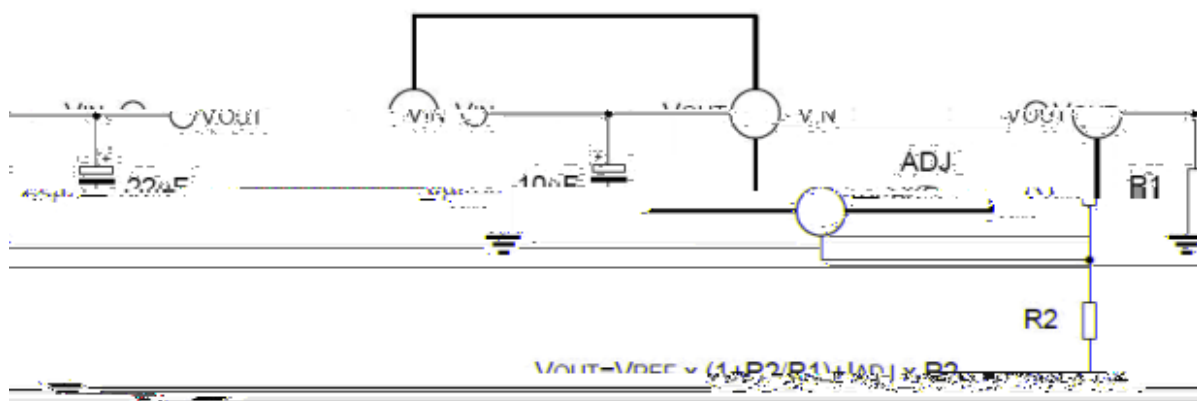
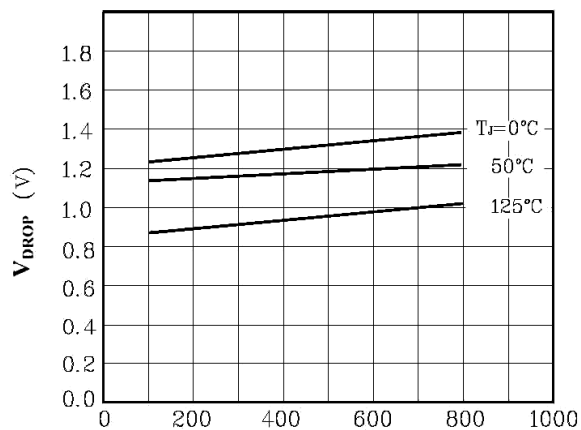


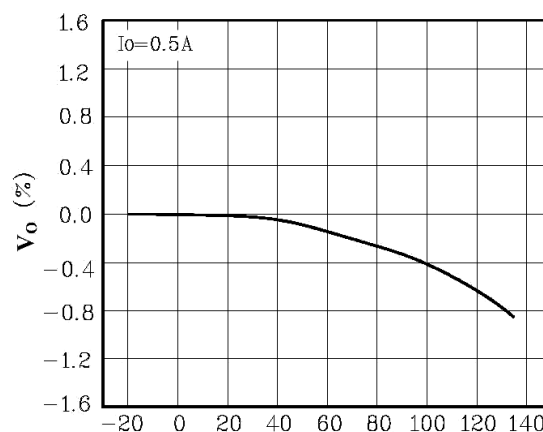
图 2. 典型可调输出电压

/ Electrical Characteristic Curve

$V_{DROP} - I_O$

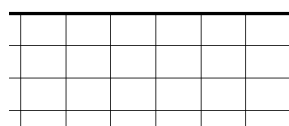


$V_O - T_a$

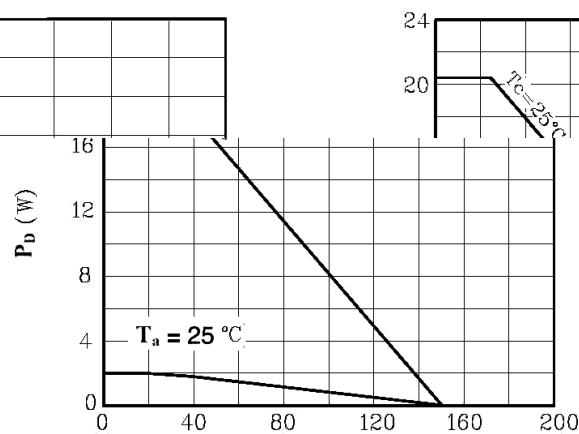
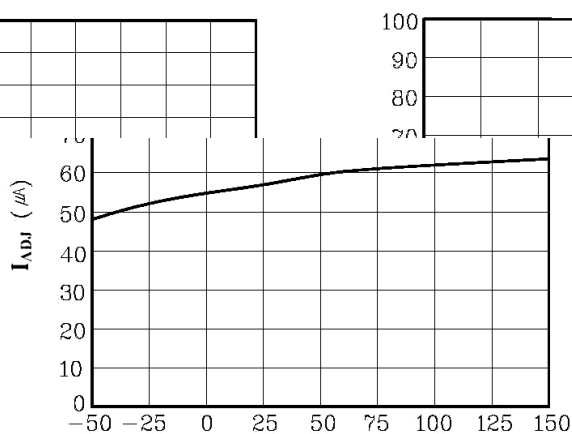


— V_{DROP} (V) — I_O (mA) — T_J (°C) — V_O (%) — T_a (°C)

$P_D - T_a$



$I_{ADJ} - T_a$



— P_D (W) — T_a (°C) — I_{ADJ} (µA) — P_D (W) — T_a (°C)

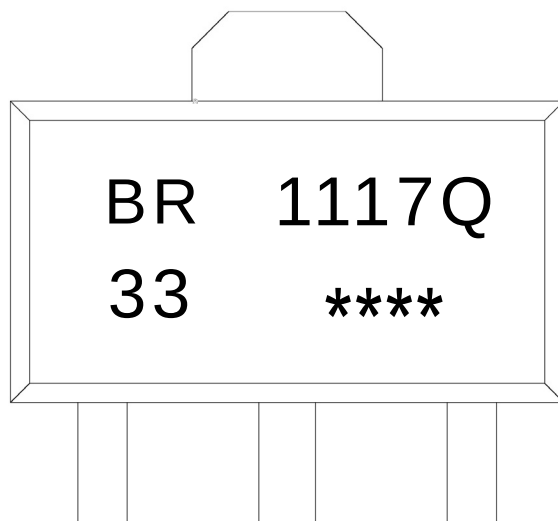
Rev.A Oct.-2023

5sbr/.6(5sbrPackage.1(1)-52Dimensions /TT4 1 Tf 8.9961)-8586 -5.5657 Tc 0 Tw ()Tj /TT4 (A)23575 -5.4857

單位: 



/ Marking Instructions



BR

1117

Q

33: 3.3V

Note:

BR: Company Code

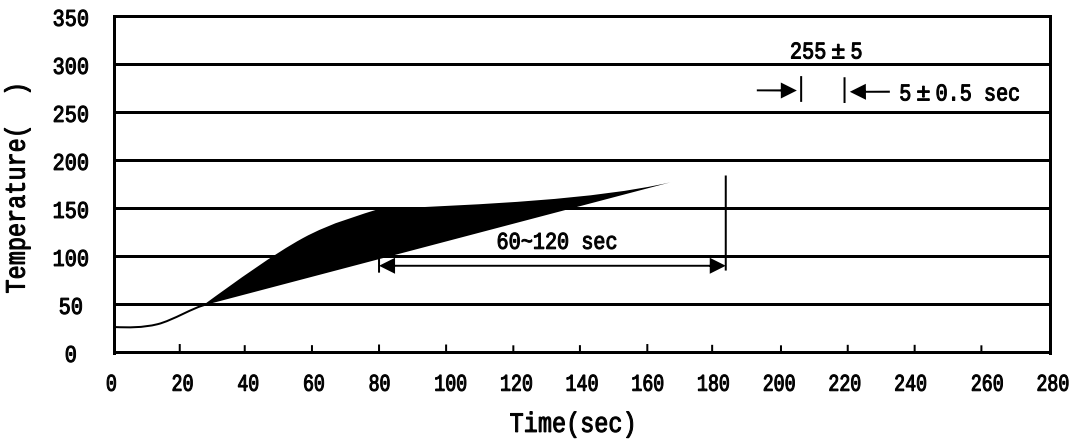
1117: Product Type Code

Q: Automobile halogen-free product Code

33: On Behalf 3.3V

*****: Lot No. Code, code change with Lot No

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1

150 200

60 120sec;

1.Preheating:150~200 , Time:60~120sec.
- 2

255±5

5±0.5sec;

2.Peak Temp.:255±5 , Duration:5±0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
SOT-89	1,000	7	7,000	6	42,000	7 ×12	180×120×180	390×385×205

/ Notices