

800mA LOW DROPOUT POSITIVE FIXED 2.5V REGULATOR

FEATURES

- Guaranteed < 1.2V Dropout at 800mA Load Current
- Fast Transient Response
- 1% Voltage Reference Initial Accuracy
- Built-In Thermal Shutdown
- Available in SOT-223, D-Pak, Ultra Thin-Pak and 8-Pin SOIC Surface-Mount Packages

APPLICATIONS

- Low Voltage IC Supply Applications
- PC Clock Supply Voltage

DESCRIPTION

The IRU1117-25 is a low dropout three-terminal fixed output regulator with minimum of 800mA output current capability. This product is specifically designed to provide well regulated supply for low voltage IC applications as well as generating clock supply for PC applications. The IRU1117-25 is guaranteed to have <1.2V dropout at full load current making it ideal to provide well regulated with 3.8V input supply. The IRU1117-25 is specifically designed to be stable with low cost aluminum capacitors while maintaining stability with low ESR tantalum caps.

TYPICAL APPLICATION

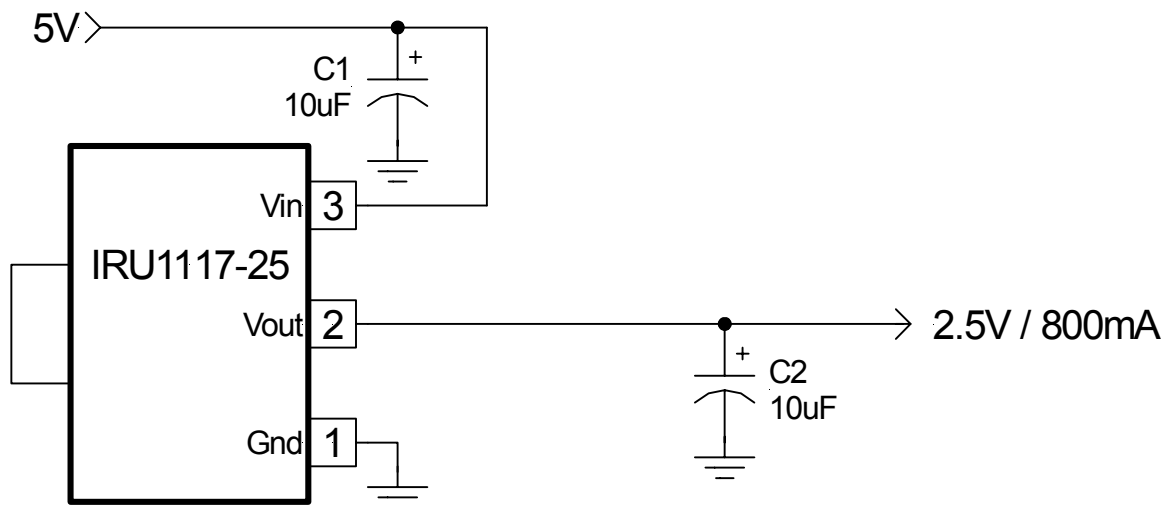


Figure 1 - Typical application of IRU1117-25 in a 5V to 2.5V regulator

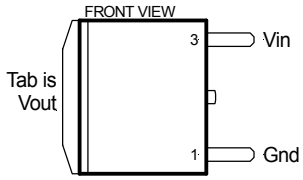
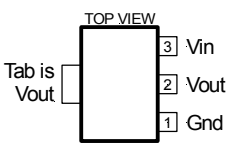
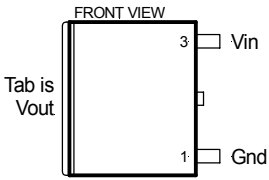
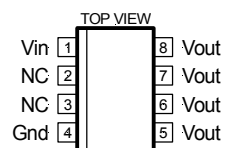
PACKAGE ORDER INFORMATION

Tj (°C)	2-PIN PLASTIC TO-252 (D-Pak)	3-PIN PLASTIC SOT-223 (Y)	2-PIN PLASTIC Ultra Thin-Pak (P)	8-PIN PLASTIC SOIC (S)
0 To 150	IRU1117-25CD	IRU1117-25CY	IRU1117-25CP	IRU1117-25CS

ABSOLUTE MAXIMUM RATINGS

Input Voltage (Vin)	7V
Power Dissipation	Internally Limited
Storage Temperature Range	-65°C To 150°C
Operating Junction Temperature Range	0°C To 150°C

PACKAGE INFORMATION

2-PIN PLASTIC TO-252 (D-Pak)	3-PIN PLASTIC SOT-223 (Y)	2-PIN ULTRA THIN-PAK (P)	8-PIN PLASTIC SOIC (S)
 θJA=70°C/W for 0.5" Sq pad	 θJA=90°C/W for 0.4" Sq pad	 θJA=70°C/W for 0.5" Sq pad	 θJA=55°C/W for 1" Sq pad

ELECTRICAL SPECIFICATIONS

Unless otherwise specified, these specifications apply over Cin=1μF, Vin=5V, Cout=10μF, and Tj=0 to 125°C. Typical values refer to Tj=25°C.

PARAMETER	SYM	TEST CONDITION	MIN	TYP	MAX	UNITS
Output Voltage	Vo	Io=10mA, Tj=25°C	2.475	2.500	2.525	V
		Io=10mA	2.450	2.500	2.550	
Line Regulation		Io=10mA, 4.75V<Vin<7V			7	mV
Load Regulation (Note 1)		10mA<Io<800mA			17	mV
Dropout Voltage (Note 2)		Io=1A		1.2	1.3	V
		Io=800mA		1.1	1.2	
Current Limit		dVo=100mV	1.1			A
Thermal Regulation		30ms Pulse, Io=800mA		0.01	0.02	%/W
Ripple Rejection		f=120Hz, Co=25μF Tantalum, Io=0.5A	60	70		dB
Temperature Stability		Io=10mA		0.5		%
Long Term Stability		Tj=125°C, 1000Hrs		0.3	1	%
RMS Output Noise		Tj=25°C, 10Hz<f<10KHz		0.003		%Vo

Note 1: Low duty cycle pulse testing with Kelvin connections is required in order to maintain accurate data.

Note 2: Dropout voltage is defined as the minimum differential voltage between Vin and Vout required to maintain regulation at Vout. It is measured when the output voltage drops 1% below its nominal value.

PIN DESCRIPTIONS

PIN#	PIN SYMBOL	PIN DESCRIPTION
1	Gnd	Ground pin. This pin must be connected to ground plane using a low inductance short connection.
2	Vout	The output of the regulator. This pin is also connected to the tab of the package. An output capacitor must be connected to this pin to insure stability of the regulator.
3	Vin	Input pin of the regulator. Typically a large storage capacitor is connected from this pin to ground to insure that the input voltage does not sag below the minimum dropout voltage during the load transient response. This pin must always be 1.3V higher than Vout in order for the device to regulate properly.

BLOCK DIAGRAM

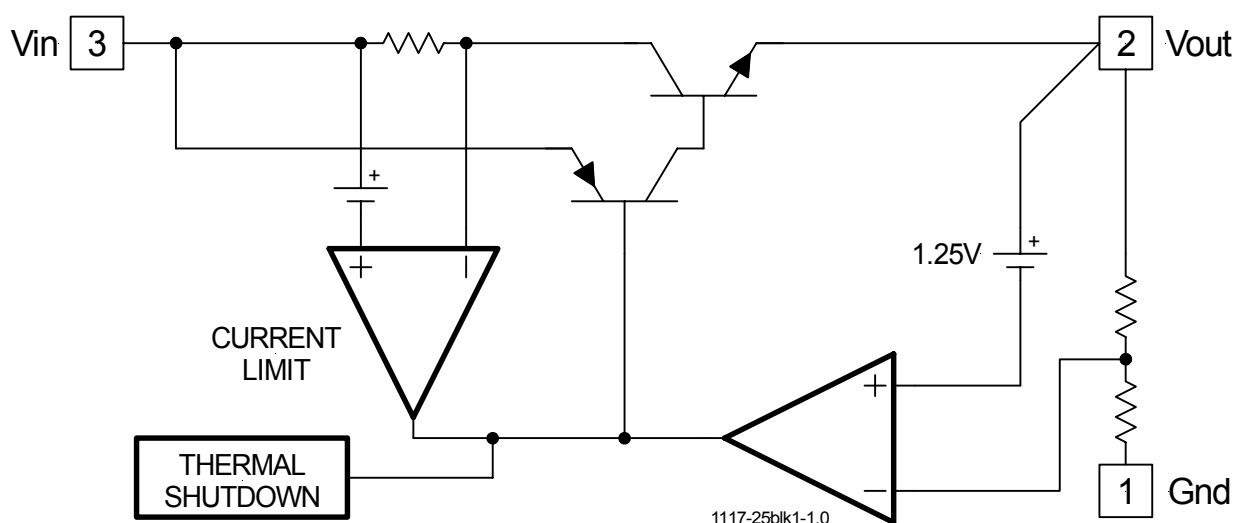


Figure 2 - Simplified block diagram of the IRU1117-25

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IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105
TAC Fax: (310) 252-7903

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Data and specifications subject to change without notice. 02/01