

**1.5V 600mA Low Dropout Regulator****Features**

- Wide Input Voltage Range 2.9V~6V
- Output Current in Excess of 600mA
- Output Voltage Accuracy $\pm 2\%$
- Quiescent Current, Typically 0.3mA
- Internal Short Circuit Current Limit
- Internal Over Temperature Protection

General Description

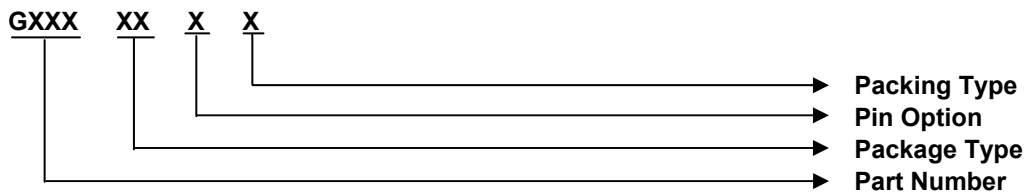
The G915 positive 1.5V voltage regulator features the ability to source 600mA of output current. A low quiescent current is provided. The typical quiescent current is 0.3mA.

Familiar regulator features such as over temperature and current limit protection circuits are provided to prevent it from being damaged by abnormal operating conditions.

Ordering Information

ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE	PIN OPTION		
				1	2	3
G915T24U	915x	-40°C ~85°C	SOT89	GND	V _{IN}	V _{OUT}

* For other package types, pin options and package, please contact us at sales@gmt.com.tw

Order Number Identification**PACKAGE TYPE**

T2 : SOT89

PIN OPTION

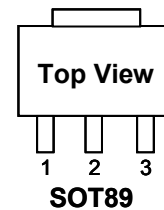
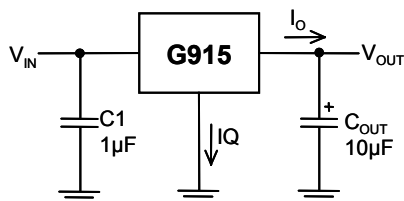
	1	2	3
1 :	V _{OUT}	GND	V _{IN}
2 :	V _{OUT}	V _{IN}	GND
3 :	GND	V _{OUT}	V _{IN}
4 :	GND	V _{IN}	V _{OUT}
5 :	V _{IN}	GND	V _{OUT}
6 :	V _{IN}	V _{OUT}	GND

PACKING

U : Tape & Reel
B : Bag

Typical Application

[Note 4]: Type of C_{OUT}

Package Type



Absolute Maximum Ratings	(Note 1)
Input Voltage.....	7V
Power Dissipation Internally Limited	(Note2)
Maximum Junction Temperature.....	150°C
Storage Temperature Range.....	-65°C ≤ T _J ≤ +150°C
Reflow Temperature (soldering, 10sec).....	260°C
Continuous Power Dissipation (T _A = + 25°C)	
SOT89 ⁽¹⁾	0.5W
Thermal Resistance Junction to Case	
SOT89.....	55°C/W

Operating Conditions	(Note 1)
Input Voltage.....	2.9V ~ 6V
Temperature Range.....	-40°C ≤ T _A ≤ 85°C

Note ⁽¹⁾: See Recommended Minimum Footprint.

Electrical Characteristics

V_{IN} = 2.5V, I_O = 500mA, C_{IN} = 10µF, C_{OUT} = 10µF. All specifications apply for T_A = T_J = 25°C. [Note 3]

PARAMETER	CONDITION	MIN	TYP	MAX	UNIT
Input Voltage		2.9	---	6	V
Output Voltage	5mA ≤ I _O ≤ 600mA	---	1.5	---	V
Line Regulation	4V ≤ V _{IN} ≤ 6V, I _O = 10mA	---	10	---	mV
Load Regulation	10mA ≤ I _O ≤ 600mA	---	10	---	mV
Quiescent Current	V _{IN} = 5V	---	0.3	---	mA
Ripple Rejection	f _i = 120 Hz, 1V _{P-P} , I _O = 100mA	---	50	---	dB
Short Circuit Current		---	0.65	---	A
Current Limit		---	0.8	---	A
Over Temperature		---	145	---	°C
Over Temperature Hysteresis		---	25	---	°C

Note 1: Absolute Maximum Ratings are limits beyond which damage to the device may occur. Operating Conditions are conditions under which the device functions but the specifications might not be guaranteed. For guaranteed specifications and test conditions see the Electrical Characteristics.

Note2: The maximum power dissipation is a function of the maximum junction temperature, T_{Jmax}; total thermal resistance, θ_{JA}, and ambient temperature T_A. The maximum allowable power dissipation at any ambient temperature is T_{Jmax}-T_A / θ_{JA}. If this dissipation is exceeded, the die temperature will rise above 150°C and IC will go into thermal shutdown. For the G915 in the SOT89 package is 250°C/W (See Recommended Minimum Footprint). The safe operation in SOT 89 package, it can see "Typical Performance Characteristics" (Safe Operating Area).

Note3: Low duty pulse techniques are used during test to maintain junction temperature as close to ambient as possible.

Note4: The type of output capacitor should be tantalum, aluminum or ceramic.

Definitions

Dropout Voltage

The input/output Voltage differential at which the regulator output no longer maintains regulation against further reductions in input voltage. Measured when the output drops 100mV below its nominal value, dropout voltage is affected by junction temperature, load current and minimum input supply requirements.

Line Regulation

The change in output voltage for a change in input voltage. The measurement is made under conditions of low dissipation or by using pulse techniques such that average chip temperature is not significantly affected.

Load Regulation

The change in output voltage for a change in load current at constant chip temperature. The measurement is made under conditions of low dissipation or by using pulse techniques such that average chip temperature is not significantly affected.

Maximum Power Dissipation

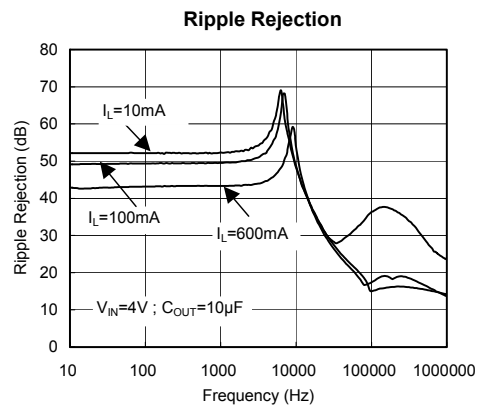
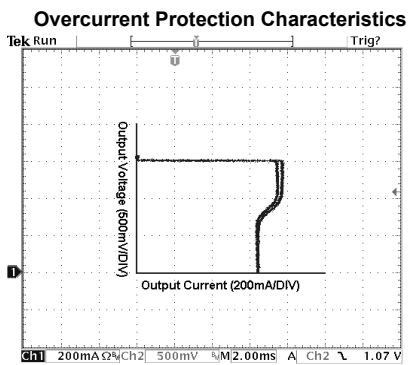
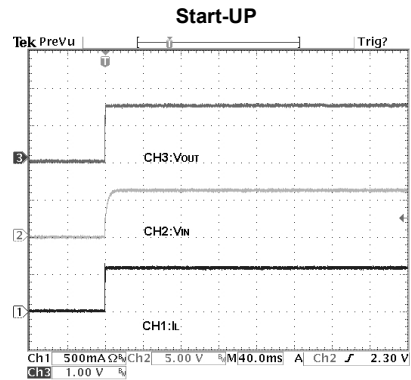
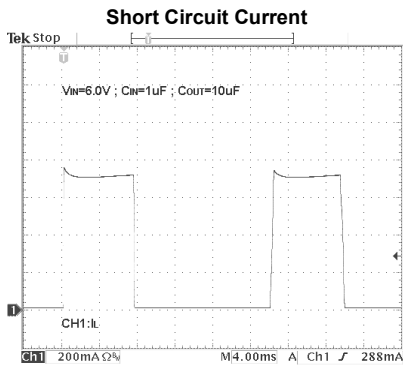
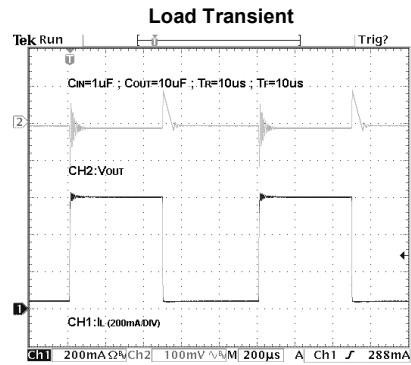
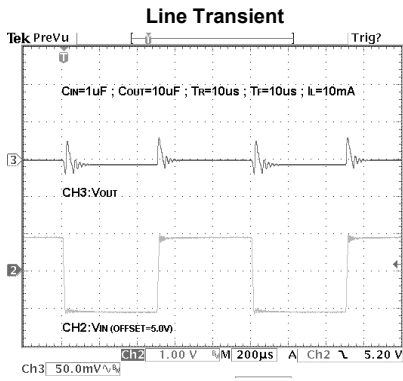
The maximum total device dissipation for which the regulator will operate within specifications.

Quiescent Bias Current

Current which is used to operate the regulator chip and is not delivered to the load.

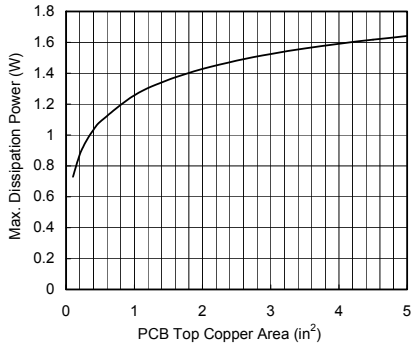
Typical Performance Characteristics

$V_{IN} = 5V$, $C_{IN} = 1\mu F$, $C_{OUT} = 10\mu F$, $T_A = 25^\circ C$. unless otherwise noted.)

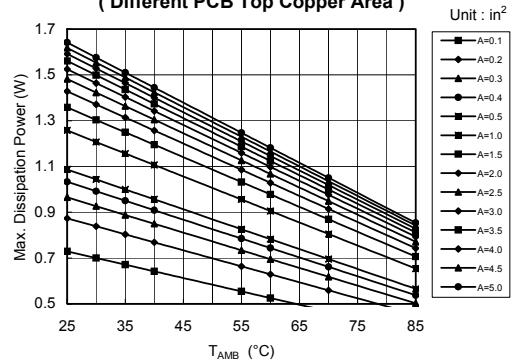


Typical Performance Characteristics (continued)

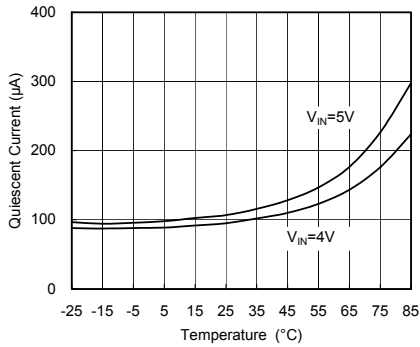
SOT89 Max. Power Dissipation vs. PCB Top Copper Area
 $T_{AMB} = 25^{\circ}\text{C}$; Still Air



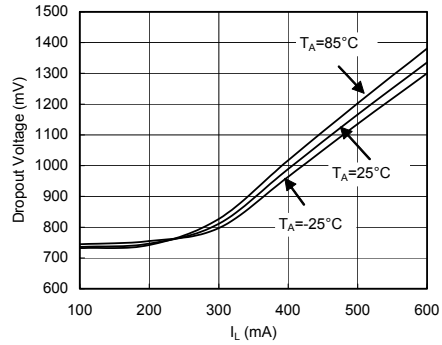
SOT89 Max. Power Dissipation vs. T_{AMB} (still air)
 (Different PCB Top Copper Area)



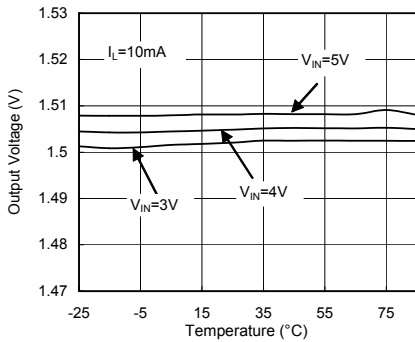
Quiescent Current vs. Temperature



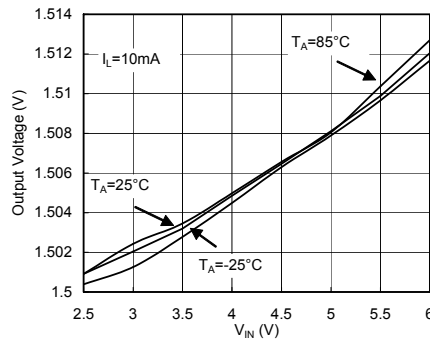
Dropout Voltage vs. I_L



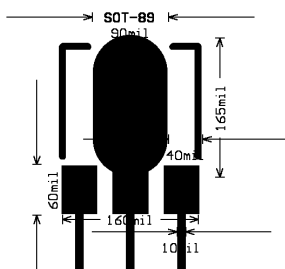
Output Voltage vs. Temperature



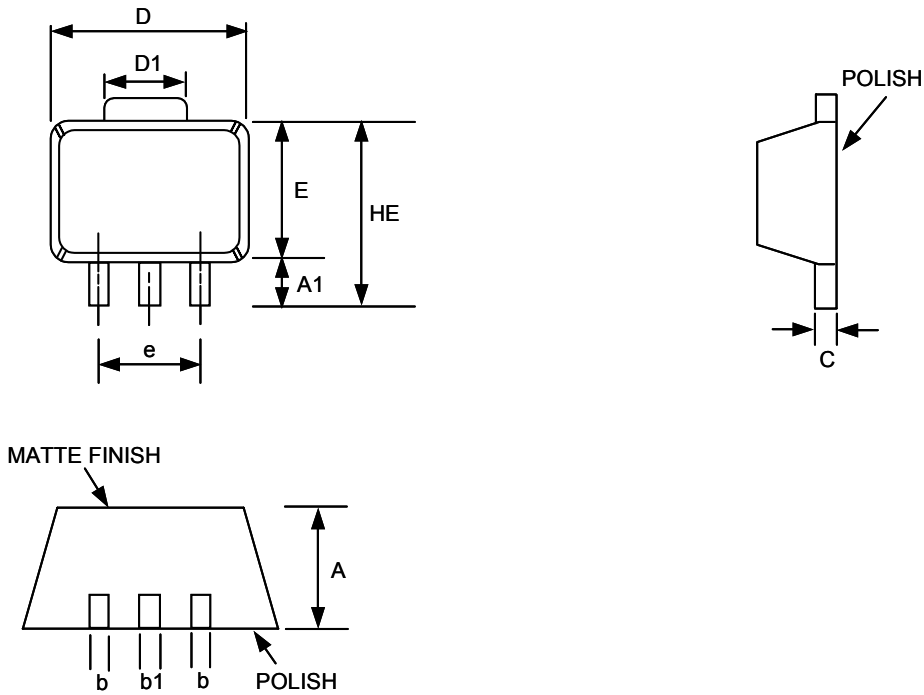
Output Voltage vs. V_{IN}



Recommend Minimum Footprint



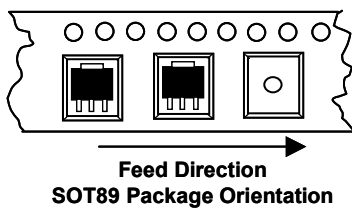
Package Information



SOT89 (T2) Package

SYMBOL	DIMENSIONS IN MILLIMETER			DIMENSIONS IN INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.40	1.50	1.60	0.055	0.059	0.063
A1	0.80	1.04	-----	0.031	0.041	-----
b	0.36	0.42	0.48	0.014	0.016	0.018
b1	0.41	0.47	0.53	0.016	0.018	0.020
C	0.38	0.40	0.43	0.014	0.015	0.017
D	4.40	4.50	4.60	0.173	0.177	0.181
D1	1.40	1.60	1.75	0.055	0.062	0.069
HE	-----	-----	4.25	-----	-----	0.167
E	2.40	2.50	2.60	0.094	0.098	0.102
e	2.90	3.00	3.10	0.114	0.118	0.122

Package Orientation



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