

**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

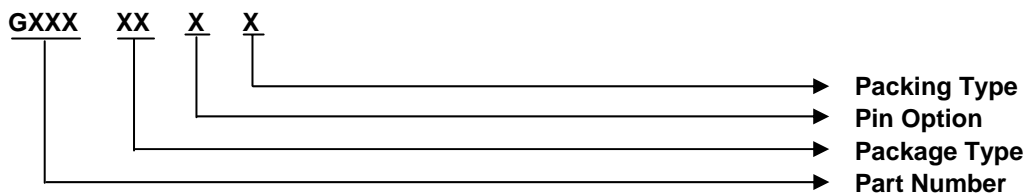
The G915 positive 1.5V voltage regulator features the ability to source 600mA of output current. A low quiescent current is provided. The typical quiescent current is 0.3mA.

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	ORDER NUMBER (Pb free)	MARKING	TEMP. RANGE	PACKAGE	PIN OPTION		
					1	2	3
G915T24U	G915T24Uf	915x	-40°C ~85°C	SOT-89	GND	V _{IN}	V _{OUT}
G915T64U	G915T64Uf	915T64	-40°C ~85°C	SOT-223	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**

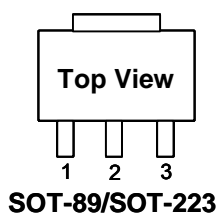
T2 : SOT-89
T6 : SOT-223

PIN OPTION

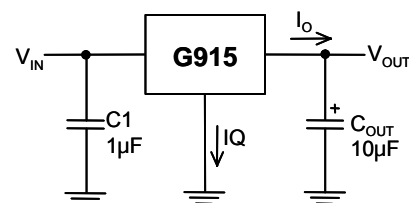
	1	2	3
1 :	V _{OUT}	GND	V _{IN}
2 :	V _{OUT}	V _{IN}	GND
3 :	GND	V _{OUT}	V _{IN}
4 :	GND	V _{IN}	V _{OUT}
5 :	V _{IN}	GND	V _{OUT}
6 :	V _{IN}	V _{OUT}	GND

PACKING

U : Tape & Reel

Package Type**Typical Application**

[Note 4]: Type of C_{OUT}





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
 Thermal Resistance Junction to Ambient, (θ_{JA})
 SOT-89 173°C/W
 SOT-223 148°C/W
 Thermal Resistance Junction to Case (θ_{JC})
 SOT-89 25°C/W
 SOT-223 22°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 SOT-89 package is 173°C/W, SOT-223 package is 148°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.

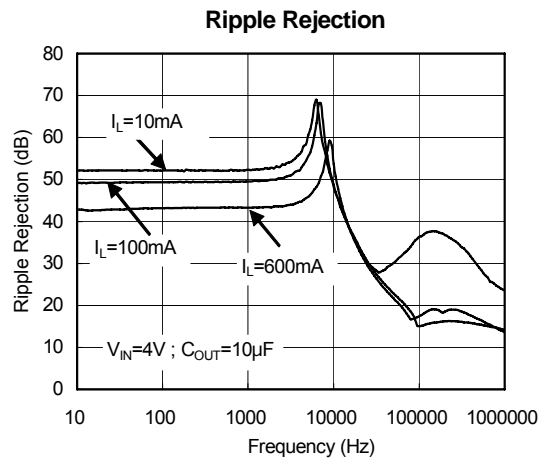
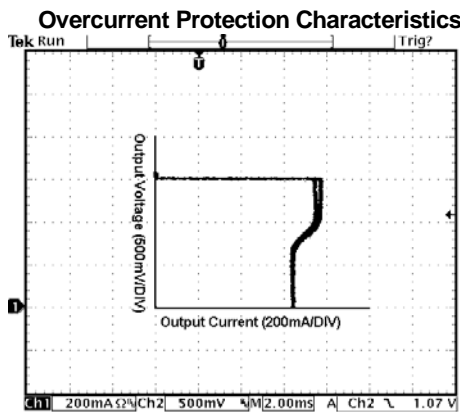
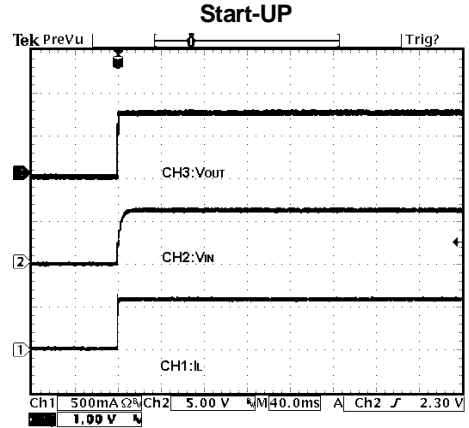
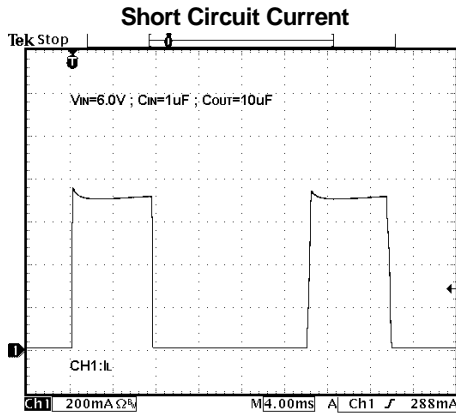
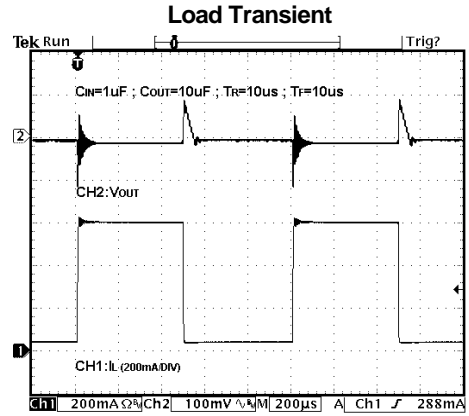
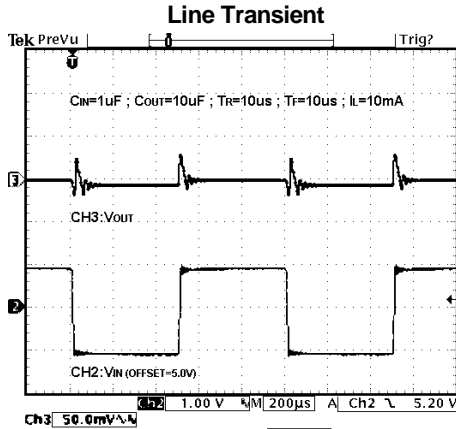
Quiescent Bias Current

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



Typical Performance Characteristics

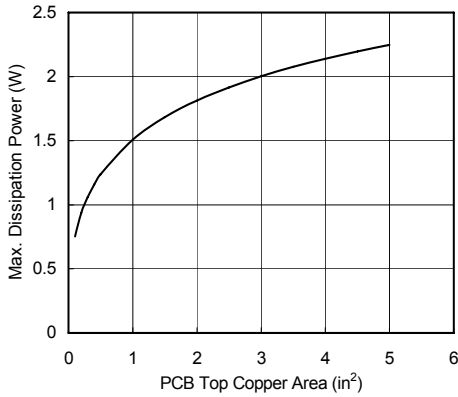
V_{IN} =5V, C_{IN}=1μF, C_{OUT} =10μF, T_A =25°C. unless otherwise noted.



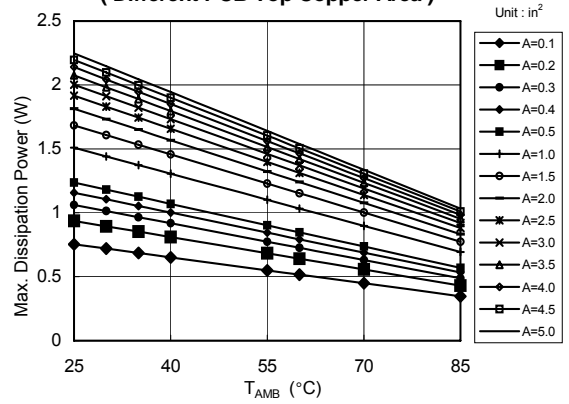


Typical Performance Characteristics (continued)

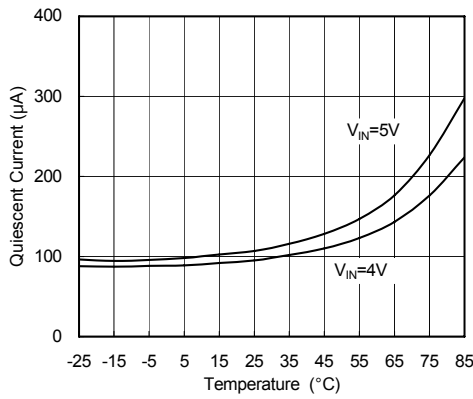
SOT-89 Max. Power Dissipation vs. PCB Top Copper Area
T_{AMB} = 25°C ; Still Air



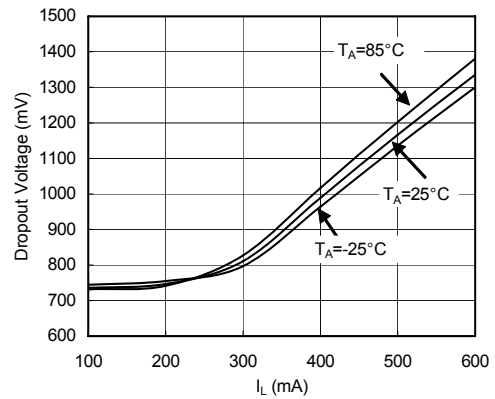
SOT-89 Max. Power Dissipation vs. T_{AMB} (still air)
(Different PCB Top Copper Area)



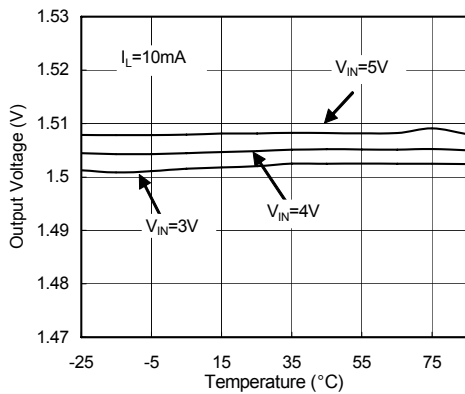
Quiescent Current vs. Temperature



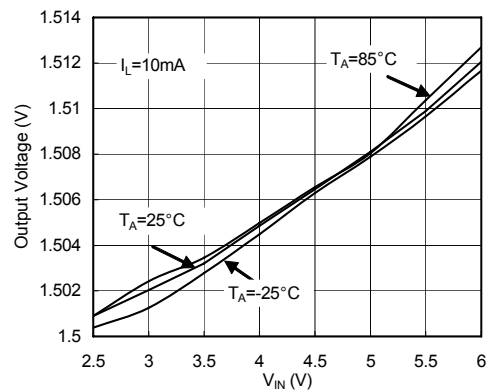
Dropout Voltage vs. I_L



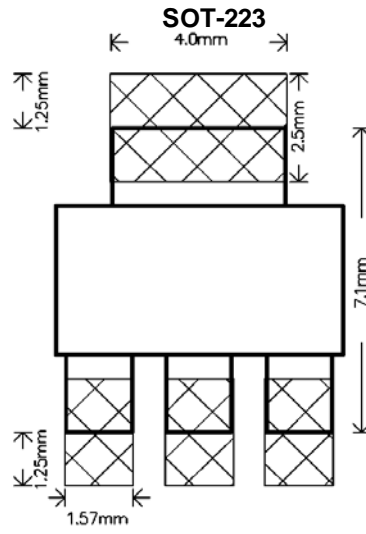
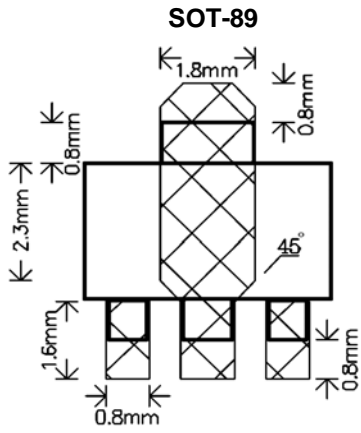
Output Voltage vs. Temperature



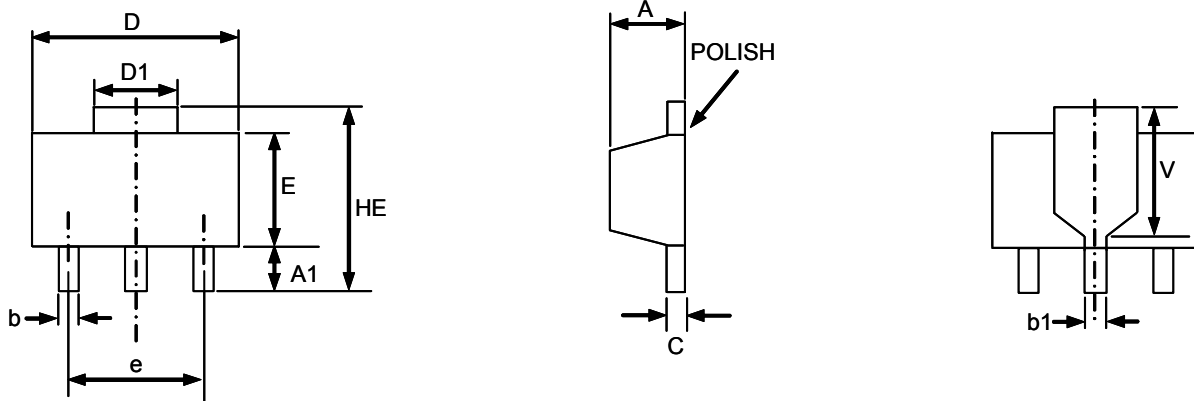
Output Voltage vs. VIN



Recommend Minimum Footprint

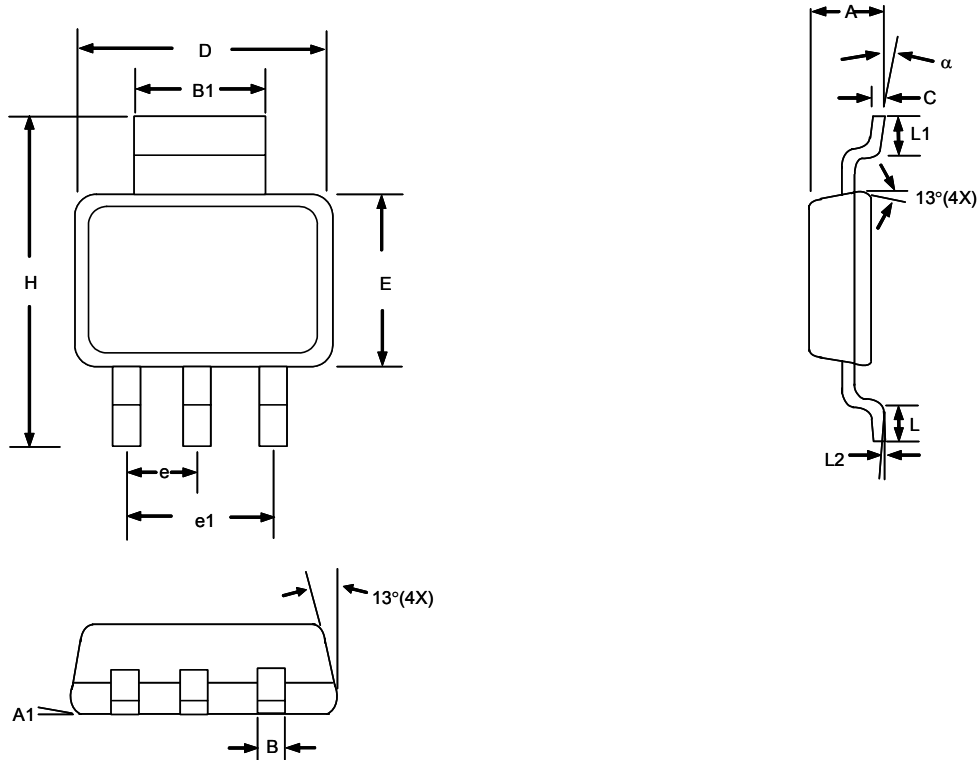


Package Information



SOT-89 (T2) Package

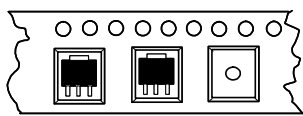
SYMBOL	DIMENSIONS IN MILLIMETER			DIMENSIONS IN INCHE		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.40	1.50	1.60	0.055	0.059	0.063
A1	0.80	1.04	-----	0.031	0.041	-----
b	0.36	0.42	0.48	0.014	0.016	0.018
b1	0.41	0.47	0.53	0.016	0.018	0.020
C	0.38	0.40	0.43	0.014	0.015	0.017
D	4.40	4.50	4.60	0.173	0.177	0.181
D1	1.40	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
V	-----	2.60	-----	-----	0.102	-----



SOT-223 (T6) Package

SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.55	1.80	0.061	0.071
A1	0.02	0.12	0.0008	0.0047
B	0.60	0.80	0.024	0.031
B1	2.90	3.10	0.114	0.122
C	0.24	0.32	0.009	0.013
D	6.30	6.70	0.248	0.264
E	3.30	3.70	0.130	0.146
e	2.30 BSC		0.090 BSC	
e1	4.60 BSC		0.181 BSC	
H	6.70	7.30	0.264	0.287
L	0.90 MIN		0.036 MIN	
L1	1.00 MIN		0.039 MIN	
L2	0.06 BSC		0.0024 BSC	
α	0°	10°	0°	10°

Taping Specification



Feed Direction
SOT-89 · 223 Package Orientation

PACKAGE	Q'TY/REEL
SOT-89	1,000 ea
SOT-223	2,500 ea