



G955 Data Sheet

G955

2.85V 1A Low Dropout Regulator

General Description

The G955 positive 2.85V voltage regulator features the ability to source 1A of output current with a dropout voltage of typically 0.5V over the entire operating temperature range. A low quiescent current is provided over the entire current output current range. The typical quiescent current is 0.4mA. Furthermore, the quiescent current is smaller when the regulator is in the dropout mode ($V_{IN} < 2.85V$).

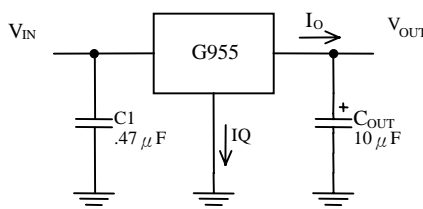
Familiar regulator features such as over temperature, over current, and over voltage

protection circuits are provided to prevent it from being damaged by abnormal operating conditions.

Features

- Dropout voltage typically 0.5V @ $I_O = 1A$
- Output current in excess of 1A
- Output voltage accuracy $\pm 2\%$
- Quiescent current, typically 400 μA
- Internal short circuit current limit
- Internal over temperature protection
- Internal over voltage protection

Typical Application



Absolute Maximum Ratings (Note 1)

Input Voltage	10V
Internal Power Dissipation(Note 2)	Internally Limited
Maximum Junction Temperature	150°C
Storage Temperature Range	-65°C ≤ T _J ≤ +150°C
Lead Temperature, Time for Wave Soldering	
TO-220 (T) Package	260°C, 10s

TO-252 (T) Package	260°C, 4s
TO-263 (S) Package	260°C, 4s
ESD Susceptibility (Note 3)	2kV

Operating Conditions (Note 1)

Input Voltage	-0.3V~10V
Temperature Range	0°C ≤ T _A ≤ 125°C

Pin Configuration

Package Pin No.	TO-220		TO-252		TO-263	
1	V _{IN}	GND	V _{IN}	GND	V _{IN}	GND
2	GND	V _{OUT}	GND	V _{OUT}	GND	V _{OUT}
3	V _{OUT}	V _{IN}	V _{OUT}	V _{IN}	V _{OUT}	V _{IN}

Electrical Characteristics

$V_{IN} = 5V$, $I_O = 1A$, $C_O = 10 \mu F$, unless otherwise specified. **Boldface limits apply over entire operating temperature range.** All other specifications apply for $T_A = T_J = 25^\circ C$.

Parameter	Conditions	Min	Typ	Max	Units
Output Voltage	$5mA \leq I_O \leq 1A$	2.79	2.85	2.91	V
Line Regulation	$3.5V \leq V_{IN} \leq 9.5V$ $I_O = 10mA$		20	50/70	mV
Line Transient Response Time	$V_{IN} = 4.5V - 6.5V$ $I_O = 10mA$		20	30/40	ms
Line Transient Output Variation	$V_{IN} = 4.5V - 6.5V$ $I_O = 10mA$		60	80/100	mV
Load Transient Response Time	$V_{IN} = 5V$ $I_O = 10mA - 1A$		100	130/150	ms
Load Transient Output Variation	$V_{IN} = 5V$ $I_O = 10mA - 1A$		100	130/150	mV
Load Regulation	$50mA \leq I_O \leq 1A$		35	50/80	mV
Output Impedance	100mA DC and 20mA AC, $f_o = 120Hz$		35		mΩ
Quiescent Current	$3.5V \leq V_{IN} \leq 9.5V$ $5mA \leq I_O \leq 1A$		0.4	0.8/1.0	mA
Output Noise Voltage	10Hz – 100KHz, $I_O = 5mA$		150		mV _{RMS}
Ripple Rejection	$f_o = 120 - 1KHz$, $1V_{RMS}$, $I_O = 100mA$	56/54	58		dB
Long Term Stability	1000 hours		20		mV
Dropout Voltage	$I_O = 1A$		0.5	0.8/0.9	V
	$I_O = 100mA$		100	150/200	mV
Short Circuit Current		1.6	1.9		A
Maximum Line Transient	$R_o = 100\Omega, T \leq 20ms$		10	12	V
Reverse Polarity DC Input Voltage	$R_o = 100\Omega$		0.6	1	V
Reverse Polarity Transient Input Voltage	$R_o = 100\Omega, T \leq 20ms$		1	2	V
Over Voltage Trigger Voltage		9	10	11	V

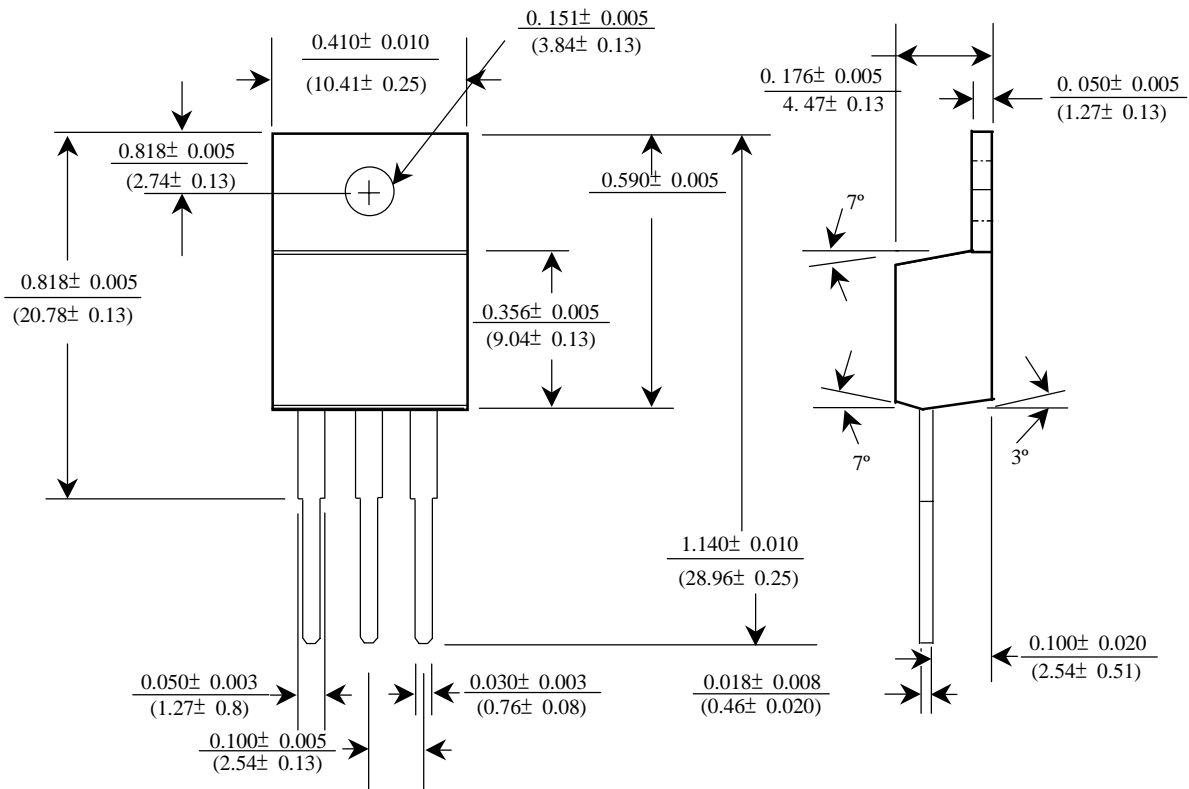
Note 1: Absolute Maximum Ratings are limits beyond which damage to the device may occur. Operating Conditions are conditions under which the device functions but the specifications might not be guaranteed. For guaranteed specifications and test conditions see the Electrical Characteristics.

Note 2: The maximum allowable power dissipation is a function of the maximum junction temperature, T_J , the junction-to-ambient thermal resistance, θ_{JA} , and the ambient temperature, T_A . Exceeding the maximum allowable power dissipation will cause excessive die temperature, and the regulator will go into thermal shutdown. The value of θ_{JA} (for device in still no heatsink) is $60^\circ\text{C}/\text{W}$ for the TO-220 package. $80^\circ\text{C}/\text{W}$ for the TO-263 package, $174^\circ\text{C}/\text{W}$ for the SOT-223 and SOT-89 package. The effective value of θ_{JA} can be reduced by using a heatsink (see Application Hints for specific information on heatsinking). The values of θ_{JA} and θ_{JC} for the K02A package are $39^\circ\text{C}/\text{W}$ and $4^\circ\text{C}/\text{W}$ respectively.

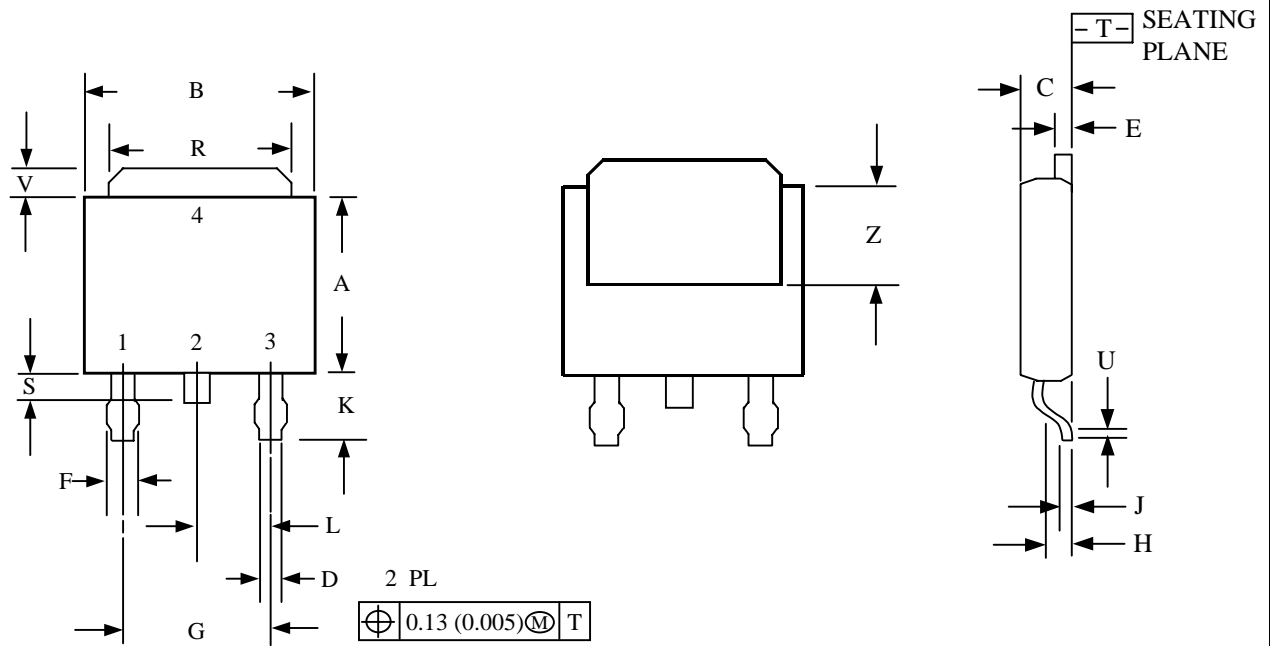
Note 3: ESD rating is based on the human body model, 100pF discharged through 1.5k Ω .

Physical Dimensions

Unit : Inches(Millimeters)



3-Lead TO-220 Package

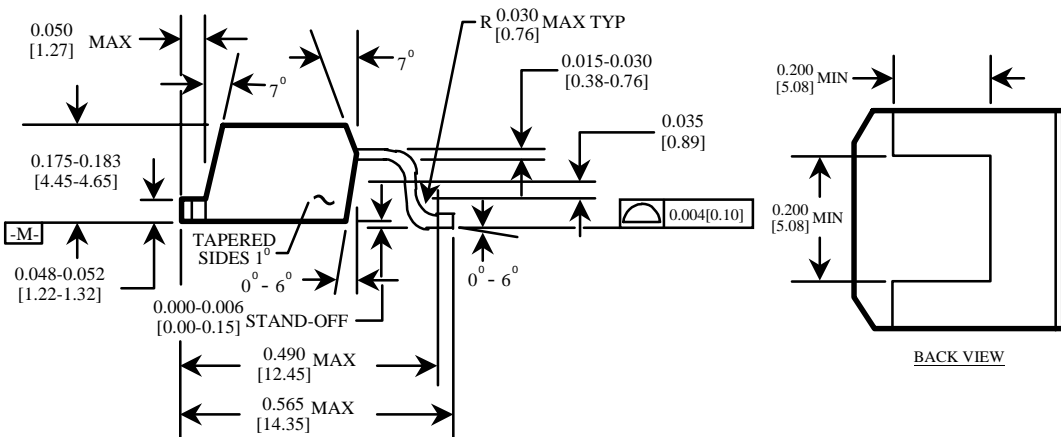
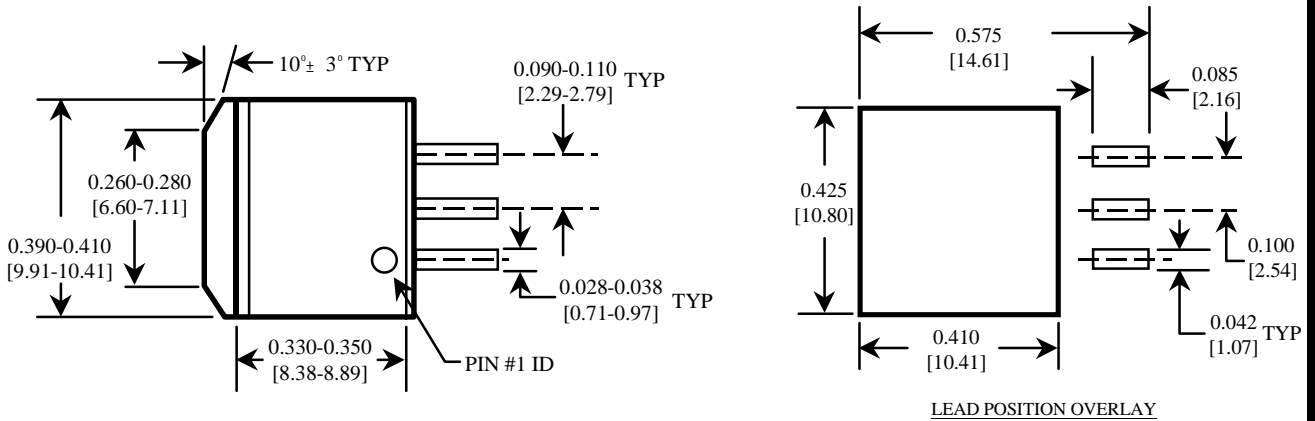


TO-252 Package

Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION : INCH

DIM	IMCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.235	0.250	5.97	6.35
B	0.250	0.265	6.35	6.73
C	0.086	0.094	2.19	2.38
D	0.027	0.035	0.69	0.88
E	0.033	0.040	0.84	1.01
F	0.037	0.047	0.94	1.19
G	0.180BSC		4.58BSC	
H	0.034	0.040	0.87	1.01
J	0.018	0.023	0.46	0.58
K	0.102	0.114	2.60	2.89
L	0.090BSC		2.29BSC	
R	0.175	0.215	4.45	6.46
S	0.020	0.050	0.51	1.27
U	0.020	---	0.51	---
V	0.030	0.050	0.77	1.27
Z	0.138	---	3.51	---



3-Lead TO-263 Surface Mount Package