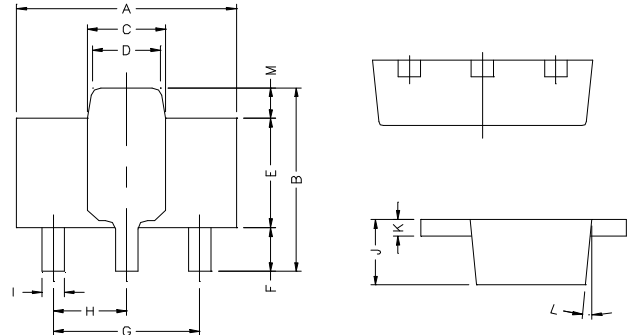


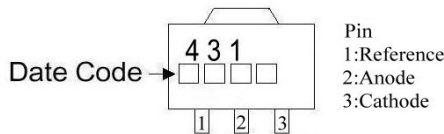
SOT-89

Description

The STL431 series are three-terminal adjustable regulators with guaranteed thermal stability over applicable temperature ranges. The output voltage may be set to any value between V_{REF} (approximately 2.495V) and 36V with two external resistors. It provides very wide applications, including shunt regulator, series regulator, switching regulator, voltage reference and others.



Marking :



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.4	4.6	G	3.00	REF.
B	4.05	4.25	H	1.50	REF.
C	1.50	1.70	I	0.40	0.52
D	1.30	1.50	J	1.40	1.60
E	2.40	2.60	K	0.35	0.41
F	0.89	1.20	L	5° TYP.	
			M	0.70 REF.	

Absolute Maximum Ratings at $T_A=25^\circ\text{C}$

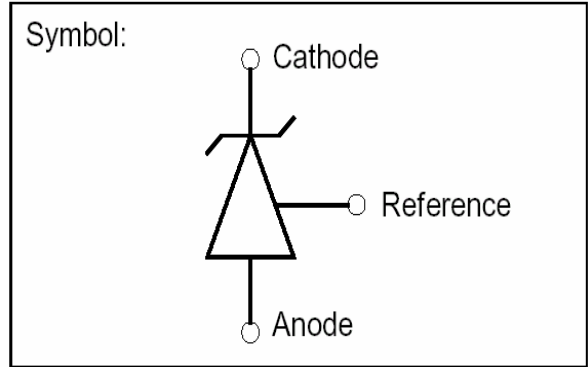
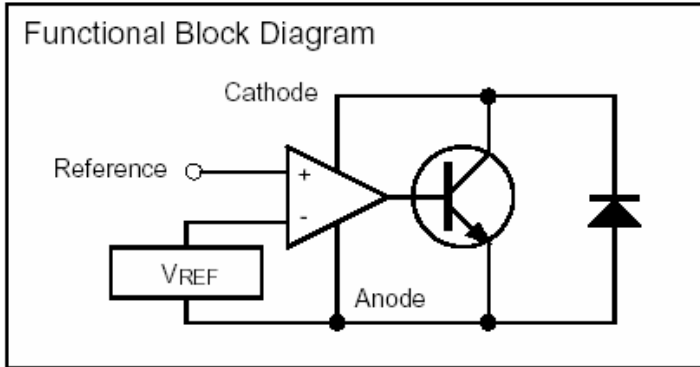
Parameter	Symbol	Ratings	Unit
Cathode Voltage	V_{KA}	37	V
Cathode Current Range (Continuous)	I_{KA}	-100~+150	mA
Reference Input Current Range	I_{REF}	-0.05~+10	mA
Operating Junction And Storage Temperature Range	T_J, T_{stg}	-65~+150	$^\circ\text{C}$
Total Power Dissipation	P_D	1.0	W

Characteristics at $T_a = 25^\circ\text{C}$

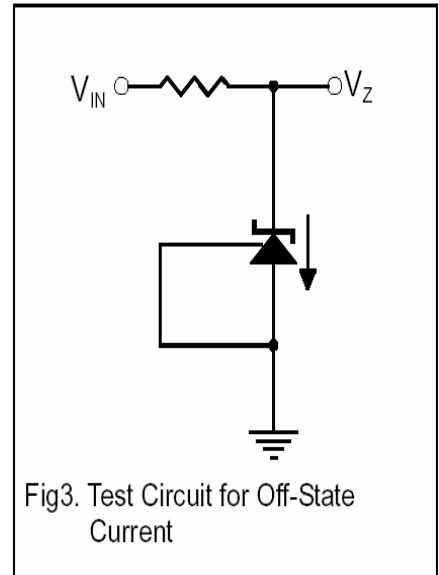
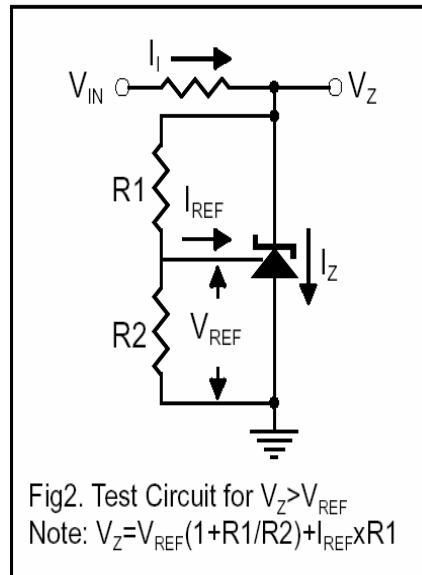
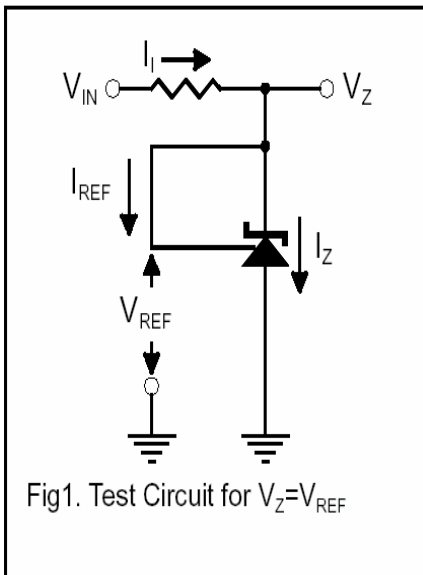
Parameter	Symbol	Min	Typ.	Max.	Unit	Test Conditions
Cathode Voltage	V_{KA}	V_{REF}	-	36	V	
Cathode Current	I_{KA}	1	-	100	mA	
Reference Input Voltage	V_{REF}	2.445	2.495	2.545	V	$V_{KA} = V_{REF}, I_{K} = 10\text{mA}$
		2.470	2.495	2.520		
		2.483	2.495	2.507		
Deviation of reference Input Voltage Over temperature(note)	$\Delta V_{REF}/\Delta T$	-	4.5	17	mV	$V_{KA} = V_{REF}, I_{K} = 10\text{mA}$ $T_{min} \leq T_a \leq T_{max}$
Ratio of Change in Reference Input Voltage to the Change in Cathode Voltage	$\Delta V_{REF}/\Delta V_{KA}$	-	-1.0	-2.7	mV/V	$I_{K} = 10\text{mA}$ $\Delta V_{KA} = 10\text{V} \sim V_{REF}$ $\Delta V_{KA} = 36\text{V} \sim 10\text{V}$
Reference Input Current	I_{REF}	-	1.5	4	μA	$I_{K} = 10\text{mA}, R_1 = 10\text{K}\Omega, R_2 = \infty$
Deviation of reference Input Current Over Full Temperature Range	$\Delta I_{REF}/\Delta T$	-	0.4	1.2	μA	$I_{K} = 10\text{mA}, R_1 = 10\text{K}\Omega, R_2 = \infty$ $T_A = \text{Full Temperature}$
Minimum Cathode Current for Regulation	$I_{KA}(\text{min})$	-	0.45	1.0	mA	$V_{KA} = V_{REF}$
Off-State Cathode Current	$I_{KA}(\text{off})$	-	0.05	1.0	μA	$V_{KA} = 36\text{V}, V_{REF} = 0$
Dynamic Impedance	$ Z_{KA} $	-	0.15	0.5	Ω	$V_{KA} = V_{REF}, I_{K} = 1 \text{ to } 100\text{mA}, F \leq 1.0\text{KHz}$

Note: $T_{min} = 0^\circ\text{C}, T_{max} = +70^\circ\text{C}$

Functional Block Diagram & Symbol



Test Circuits



Characteristics Curve

