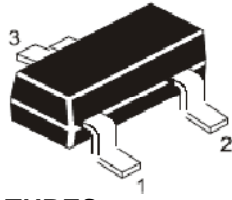


3-TERMINAL PROGRAMMABLE SHUNT REGULATOR

CTL431BF

PIN CONFIRMATION

1. REFERENCE
2. CATHODE
3. ANODE

SOT-23
FEATURES :

- 1) Output Voltage can be adjusted to 36V
- 2) Low dynamic output impedance, its typical value is 0.2Ω
- 3) Trapping current capability is 1 to 100mA
- 4) Typical value of the equivalent temperature factor in the whole temperature scope is 50ppm/°C
- 5) The effective temperature compensation in the working range of full temperature
- 6) Low output noise voltage
- 7) Fast on-state response

ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)

DESCRIPTION	SYMBOL	VALUE	UNIT
Cathode Voltage	V_{KA}	36	V
Cathode Current Range (Continuous)	I_{KA}	-100 to +150	mA
Reference Input Current Range	I_{ref}	0.05 to +10	mA
Power Dissipation	P_D	300	mW
Operating Temperature	T_{amb}	0-70	°C
Storage Temperature Range	T_{stg}	-65 to +150	°C

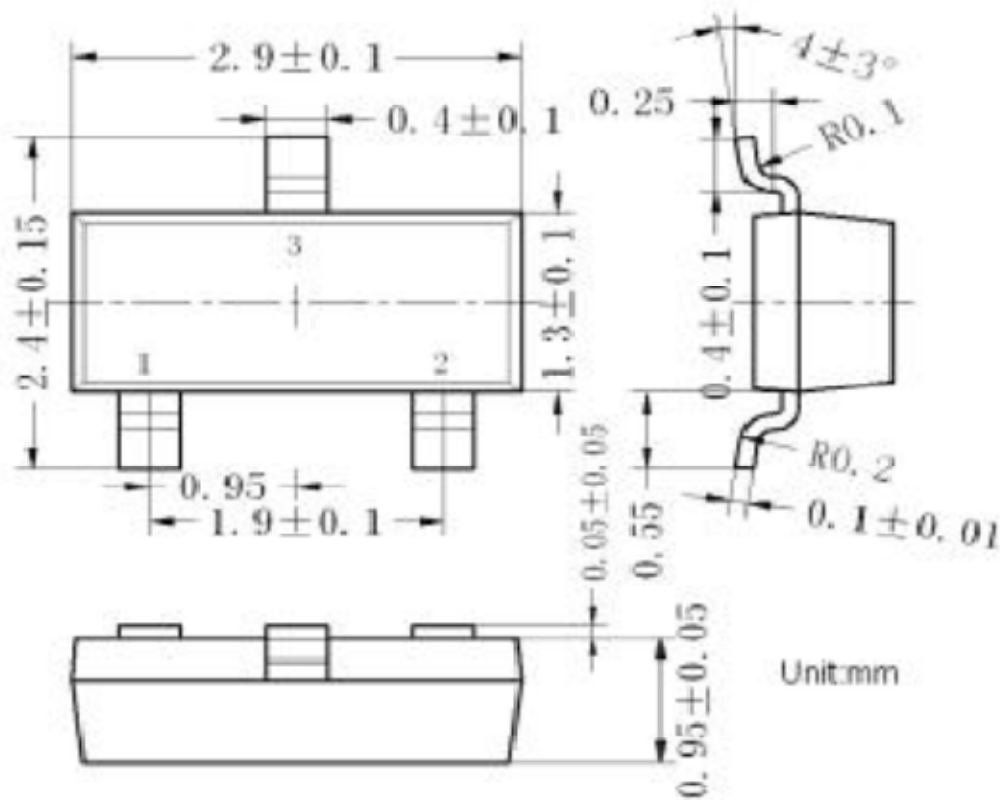
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Reference input voltage	V_{ref}	$V_{KA}=V_{REF}$, $I_{KA}=10\text{mA}$	2.488	2.5	2.513	V
Deviation of reference input voltage over temperature	$\Delta V_{ref}/\Delta T$	$V_{KA}=V_{REF}$, $I_{KA}=10\text{mA}$ $T_{min} \leq T_a \leq T_{max}$		4.5	17	mV
Ratio of change in reference input voltage to the change in cathode voltage	$\Delta V_{ref}/\Delta V_{KA}$	$I_{KA}=10\text{mA}$ $\Delta V_{KA}=10\text{V} \sim V_{REF}$		-1	-2.7	mV/V
		$\Delta V_{KA}=36\text{V} \sim 10\text{V}$		-0.5	-2	
Reference input current	I_{ref}	$I_{KA}=10\text{mA}$, $R_1=10\text{k}\Omega$, $R_2=\infty$		1.5	4.0	uA
Deviation of reference input current over full temperature range	$\Delta I_{ref}/\Delta T$	$I_{KA}=10\text{mA}$, $R_1=10\text{k}\Omega$, $R_2=\infty$ $T_A=\text{full Temperature}$		0.4	1.2	uA
Minimum cathode current for regulation	$I_{KA(min)}$	$V_{KA}=V_{REF}$		0.45	1	mA
Off-state cathode current	$I_{KA(OFF)}$	$V_{KA}=36\text{V}$, $V_{REF}=0$		0.05	1	uA
Dynamic impedance	Z_{KA}	$V_{KA}=V_{REF}$, $I_{KA}=1$ to 100mA $f \leq 1.0\text{kHz}$		0.15	0.5	Ω

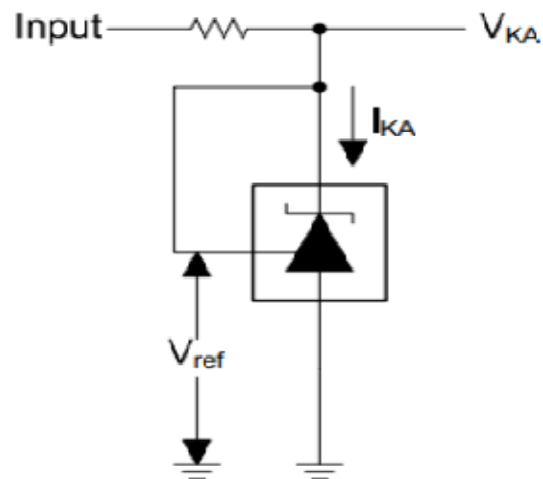
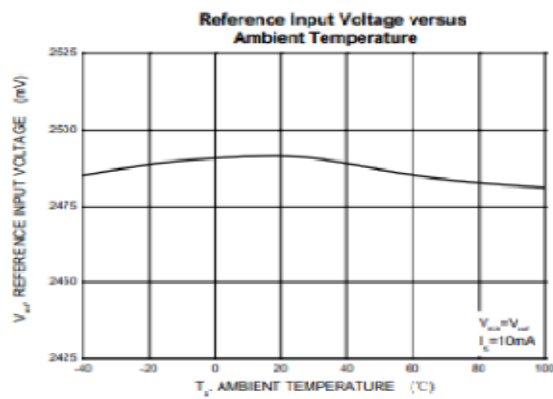
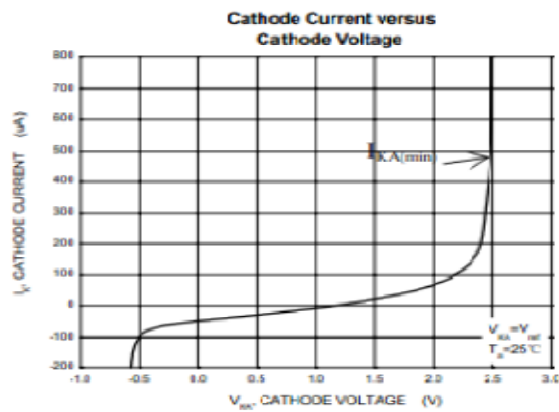
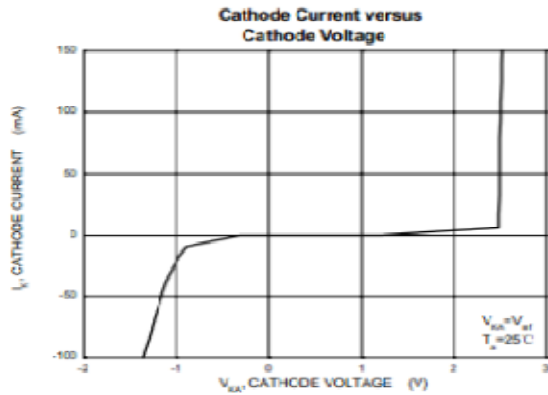
Note : $T_{MIN} = 0^{\circ}\text{C}$, $T_{MAX} = +70^{\circ}\text{C}$
CLASSIFICATION OF V_{ref}

Rank	0.5%
Range	2.488-2.513

SOT-23 PACKAGE DIMENSION

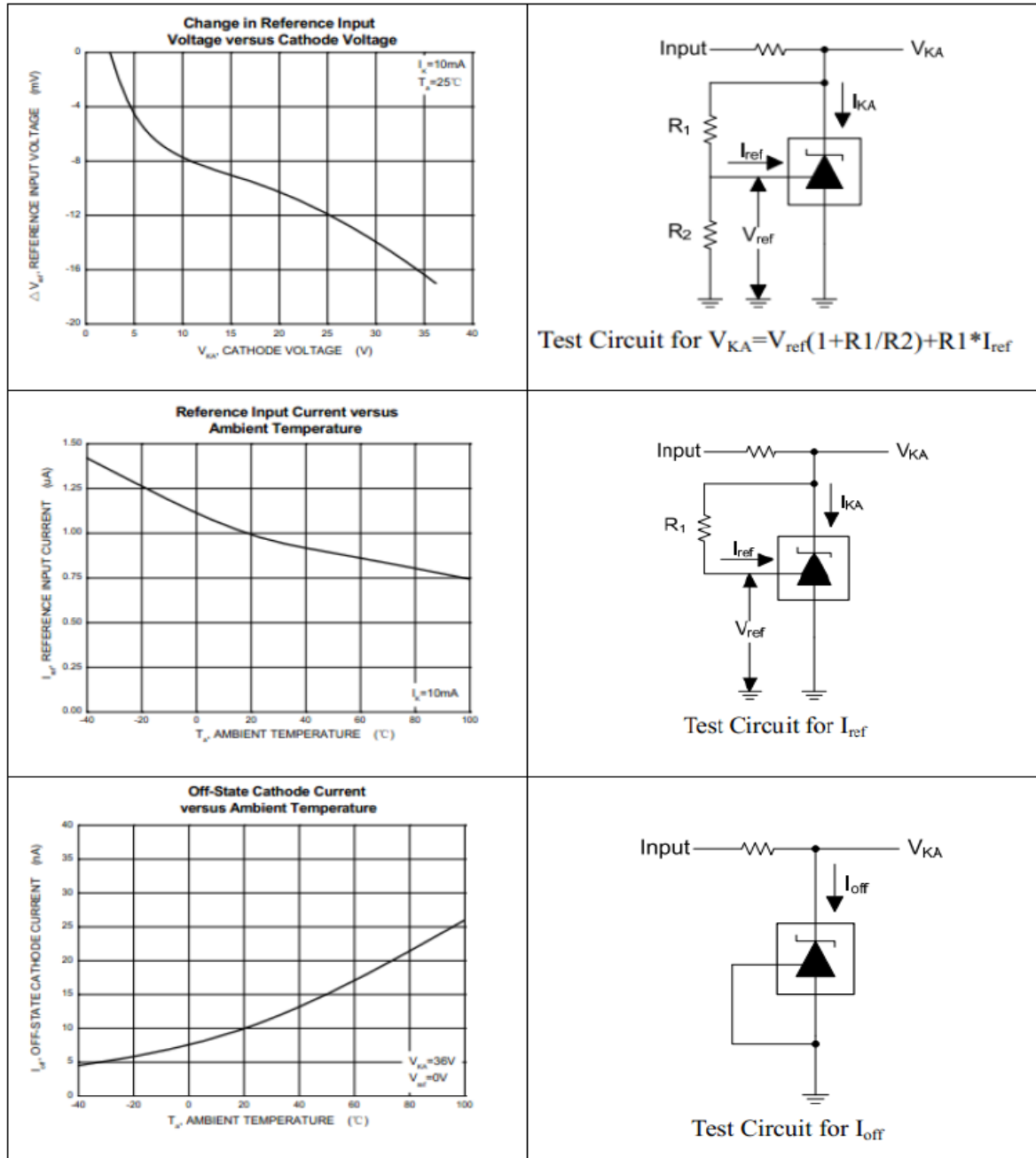


Typical Characteristics



Test Circuit for $V_{KA} = V_{ref}$

Typical Characteristics





Continental Device India Limited

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