



DC COMPONENTS CO., LTD.
INTEGRATED CIRCUIT

DM431
DM431A
DM431B

TECHNICAL SPECIFICATIONS OF ADJUSTABLE SHUNT REGULATOR

Features

- * Programmable output voltage
- * Temperature coefficient is 50ppm/°C typical
- * Temperature compensated for operation over
- * Full temperature range
- * Low output noise voltage
- * Fast turn on response

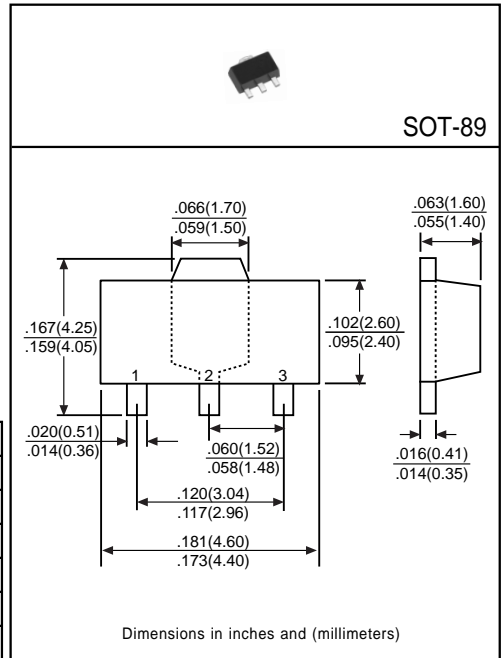
Pinning

- 1 = Reference
- 2 = Anode
- 3 = Cathode

Absolute Maximum Ratings

(Operating temperature range applies, unless otherwise specified)

Characteristic	Symbol	Rating	Unit
Cathode to Anode Voltage	V_{KA}	37	V
Cathode Current Range(Continuous)	I_K	-100 to +150	mA
Reference Input Current Range	I_{ref}	+0.05 to +10	mA
Power Dissipation	P_D	770	mW
Operating Temperature Range	T_{opr}	0 to +70	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C



Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reference Input Voltage	DM431	2.440	2.495	2.550	V	$V_{KA}=V_{REF}$, $I_K=10mA$
	DM431A	2.470	2.495	2.520		
	DM431B	2.480	2.495	2.510		
Reference Input Voltage Deviation Over Temperature Range	ΔV_{ref}	-	4.0	17	mV	$V_{KA}=V_{REF}$, $I_K=10mA$ $T_{min} \leq T_A \leq T_{max}$
Ratio of Change in Reference Input Voltage to Change in Cathode to Anode Voltage	$\frac{\Delta V_{ref}}{\Delta V_{KA}}$	-	-1.4	-2.7	mV/V	$I_K=10mA$, $\Delta V_{KA}=10V-V_{REF}$
		-	-1.0	-2.0		$I_K=10mA$, $\Delta V_{KA}=36V-10V$
Reference Input Current	I_{ref}	-	2.0	4.0	μA	$I_K=10mA$, $R_1=10k\Omega$, $R_2=\infty$
Reference Input Current Deviation Over Temperature Range	ΔI_{ref}	-	0.4	1.2	μA	$I_K=10mA$, $R_1=10k\Omega$, $R_2=\infty$ $T_{min} \leq T_A \leq T_{max}$
Minimum Cathode Current for Regulation	$I_{K(min)}$	-	0.4	1.0	mA	$V_{KA}=V_{REF}$
Off-State Cathode Current	$I_{K(off)}$	-	0.1	1.0	μA	$V_{KA}=36V$, $V_{REF}=0$
Dynamic Impedance	Z_{KA}	-	0.2	0.5	Ω	$V_{KA}=V_{REF}$, $f \leq 1.0kHz$ $I_K=1$ to 100mA