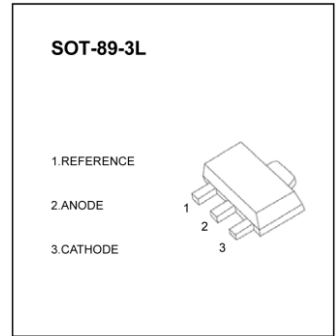


贴片线性调整器 NSP-431系列 SOT-89-3L Encapsulate Adjustable Reference Source

※ FEATURES

- ❖ The output voltage can be adjusted to 36V
- ❖ Low dynamic output impedance ,its typical value is 0.2Ω
- ❖ Trapping Current capability is 1 to 100mA
- ❖ The typical value of the equivalent temperature factor in the whole temperature scope is 50 ppm/°C
- ❖ The effective temperature compensation in the working range of full temperature
- ❖ Low output noise voltage
- ❖ Fast on -state response



※ ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Units
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
Power Dissipation	P_D	500	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	250	°C/W
Operating Ambient Temperature Range	T_A	0 ~+70	°C

※ ELECTRICAL CHARACTERISTICS (Ta=25 unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reference Input Voltage	V_{ref}	$V_{KA}=V_{REF}, I_{KA}=10mA$	2.450	2.5	2.550	V
Deviation of reference input Voltage Over temperature (note)	$\Delta V_{ref} / \Delta T$	$V_{KA}=V_{REF}, I_{KA}=10mA$ $T_{min} \leq T_a \leq T_{max}$		4.5	17	mV
Ratio Of Change in Reference Input Voltage to the change in Cathode Voltage	$\Delta V_{ref} / \Delta V_{KA}$	$I_{KA}=10mA$ $\Delta V_{KA}=10V \sim V_{REF}$		-1.0	-2.7	mV/V
		$\Delta V_{KA}=36V \sim 10V$		-0.5	-2.0	mV/V
Reference Input Current	I_{ref}	$I_{KA}=10mA, R1=10K \Omega R2=\infty$		1.5	4	μA
Deviation Of Reference Input Current Over Full Temperature Range	$\Delta I_{ref} / \Delta T$	$I_{KA}=10mA, R1=10K \Omega R2=\infty$ $T_a=full\ Temperature$		0.4	1.2	μA
Minimum cathode Current for regulation	$I_{KA}(min)$	$V_{KA}=V_{REF}$		0.45	1.0	mA
Off-state cathode Current	$I_{KA}(OFF)$	$V_{KA}=40V, V_{REF}=0$		0.05	1.0	μA
Dynamic Impedance	Z_{KA}	$V_{KA}=V_{REF}, I_{KA}=1\ to\ 100mA$ $f \leq 1.0kHz$		0.15	0.5	Ω

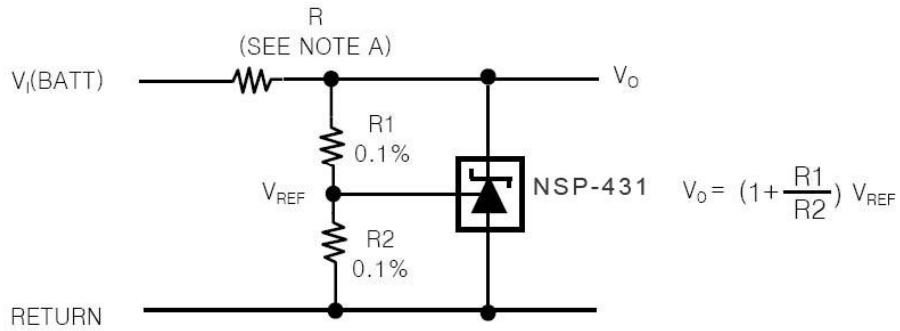
Note: TMIN=0 °C, TMAX=+70°C

CLASSIFICATION OF V_{ref}

Rank	0.5%	1%	2%
Range	2.487-2.513	2.475-2.525	2.450 -2.550

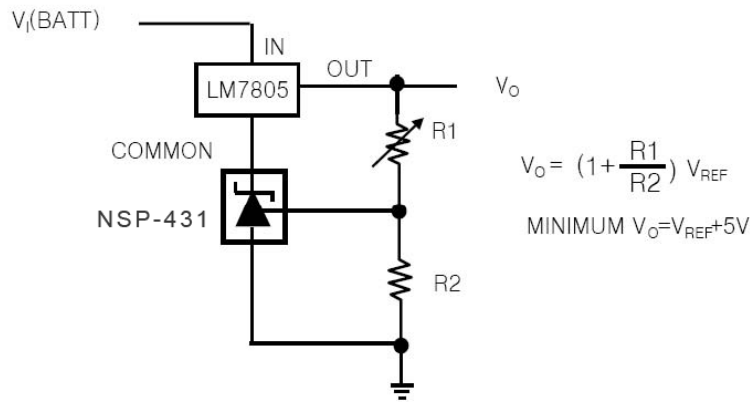
※ APPLICATION INFORMATION

1. Shunt Regulator

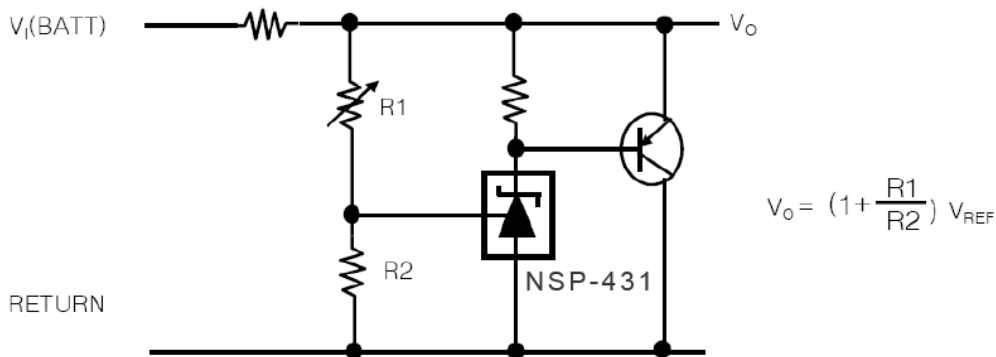


Note A : R Should provide cathode Current 1mA to the NSP-431K at minimum $V_{I(BATT)}$

2. Output Control of a Three-Terminal Fixed Regulator

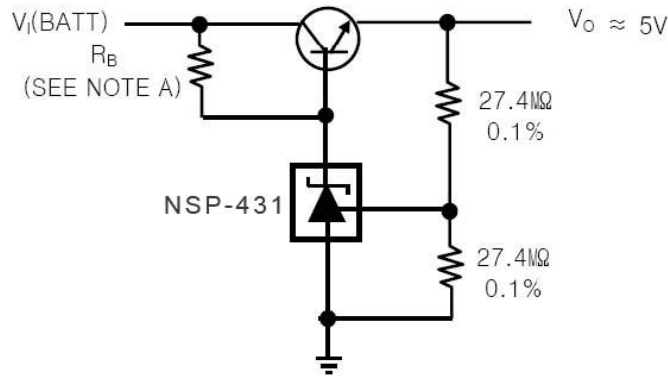


3. High-Current Shunt Regulator



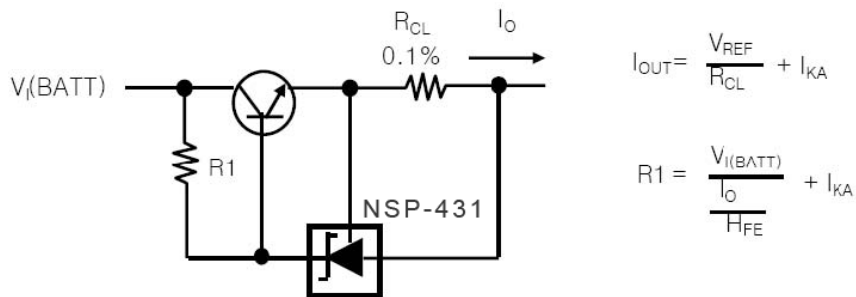
※ APPLICATION INFORMATION

4. Efficient 5V Precision Regulator

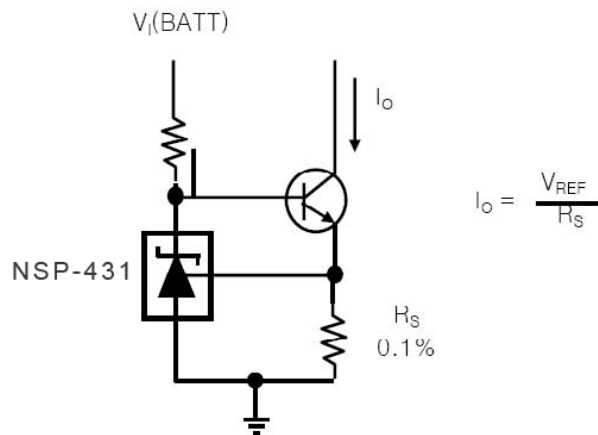


NOTE A : R_B Should provide cathode Current ≥ 1mA to the NSP-431K.

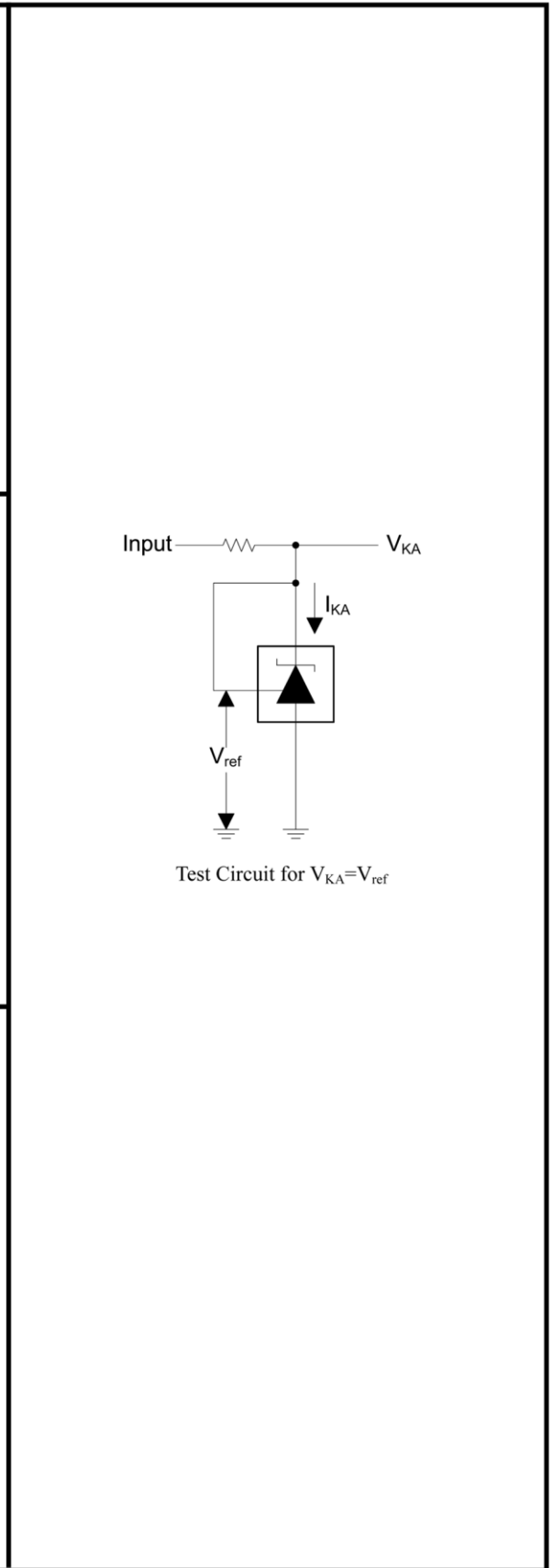
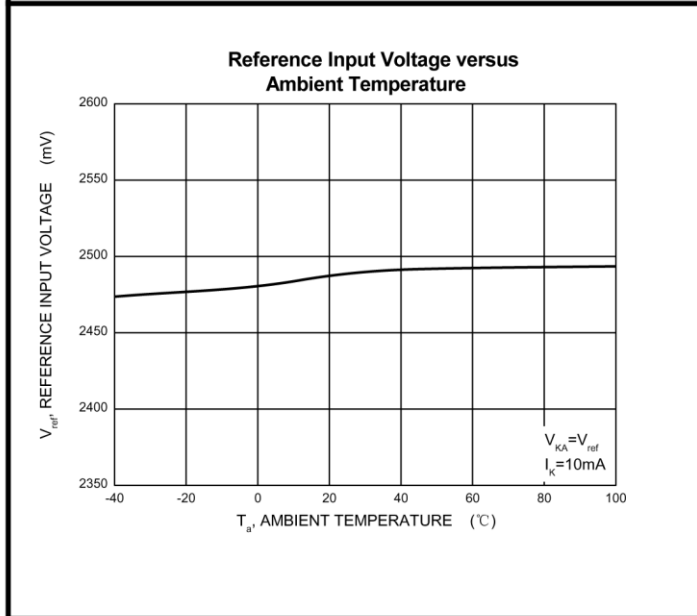
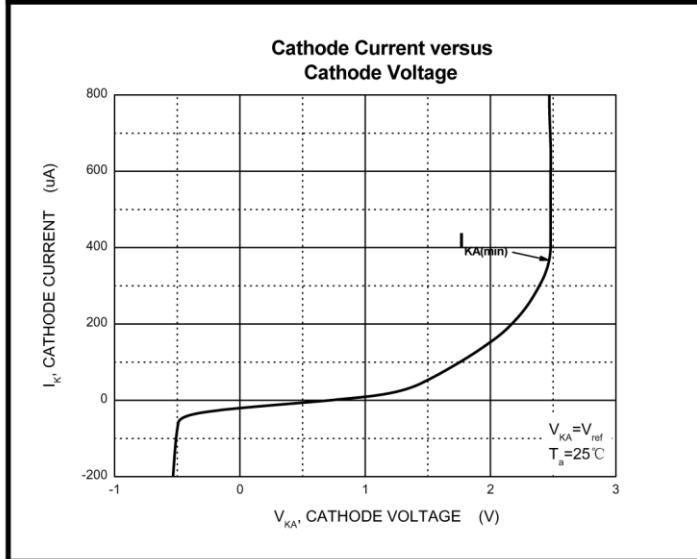
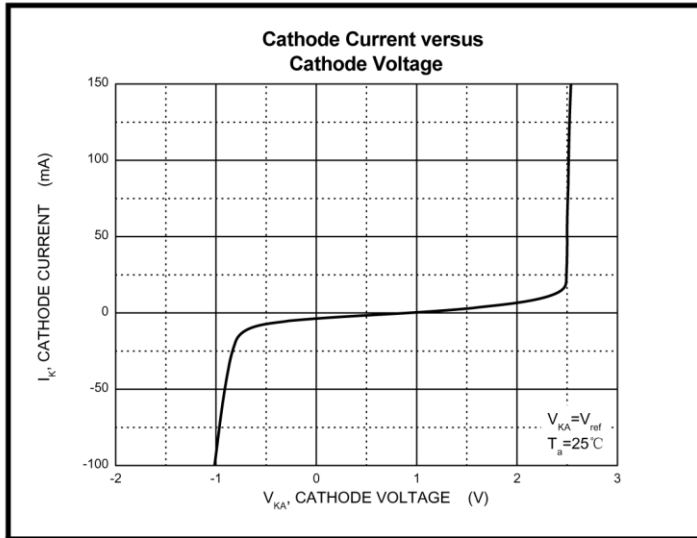
5. Precision Current Limiter



6. Precision Constant-Current Sink



※ Typical Characteristics



※ Typical Characteristics

