

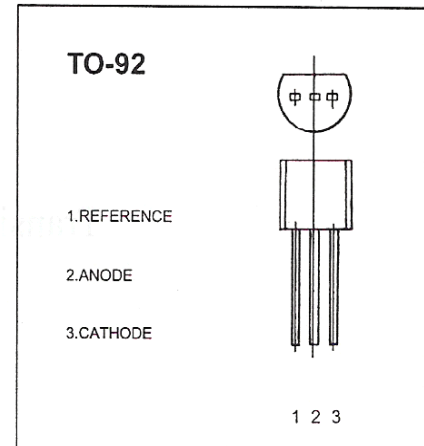


TO-92 Plastic-Encapsulate Transistors

431 Adjustable Accurate Reference Source

FEATURES

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



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

Parameter	SYMBOL	VALUE	UNITS
Cathode Voltage	V_{KA}	37	V
Cathode Current Range(Continuous)	I_{KA}	-100~+150	mV
Reference Input Current Range	I_{ref}	0.05~+10	mA
Power Dissipation	P_D	770	mW
Operating temperature	T_{opr}	0-70	$^{\circ}\text{C}$
Storage temperature Range	T_{stg}	-65~+150 $^{\circ}\text{C}$	$^{\circ}\text{C}$

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

Parameter	Symbol	Test comditions	MIN	TYP	MAX	UNIT
Reference Input Voltage	V_{ref}	$V_{KA} = V_{REF}, I_{KA} = 10\text{mA}$	2.440	2.495	2.550	V
Deviation of reference input Voltage Over temperature(note)	$\Delta V_{ref} / \Delta T$	$V_{KA} = V_{REF}, I_{KA} = 10\text{mA}$ $T_{min} \leq T_a \leq T_{max}$		4.5	17	mV
Ratio Of Change in Reference Input Voltage to the change in Cathode Voltage	$\Delta V_{ref} / \Delta V_{KA}$	$I_{KA} = 10\text{mA}$ $\Delta V_{KA} = 10\text{V} \sim V_{REF}$		-1.0	-2.7	m V/V
		$\Delta V_{KA} = 36\text{V} \sim 10\text{V}$		-0.5	-2.0	
Reference Input Current	I_{ref}	$I_{KA} = 10\text{mA}, R_1 = 10\text{K} \Omega$, $R_2 = \infty$		1.5	4	μA
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	μA
Minimum cathode current for regulation	$I_{KA}(\text{min})$	$V_{KA} = V_{REF}$		0.45	1.0	mA
Off-state cathode Current	$I_{KA}(\text{OFF})$	$V_{KA} = 36\text{V}, V_{REF} = 0$		0.05	1.0	μA
Dynamic Impedance	Z_{KA}	$V_{KA} = V_{REF}, I_{KA} = 1 \text{ to } 100\text{mA}$ $f \leq 1.0\text{KHz}$		0.15	0.5	Ω

Note: $T_{MIN}=0^{\circ}\text{C}$ $T_{MAX}=+70^{\circ}\text{C}$