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# ZN404 / ZN404D

## 2.45V PRECISION REFERENCE REGULATOR

The ZN404 is a monolithic integrated circuit providing a precise stable reference source of 2.45V without the need for an external shaping capacitor.

### FEATURES

- Low Temperature Coefficient
- Low Slope Resistance
- Very Good Long Term Stability
- Low Noise
- Internally Shaped
- Tight Tolerance
- ZN404 - 2-Lead TO-18 Metal Can Package
- ZN404D - 8-Lead Miniature Plastic Surface Mount Package

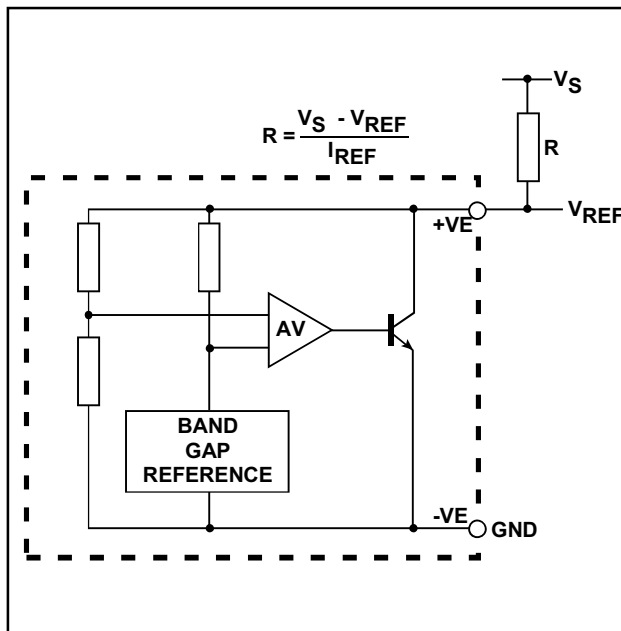
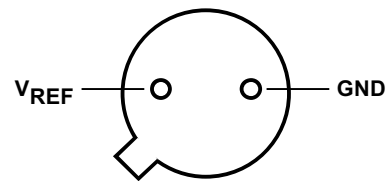
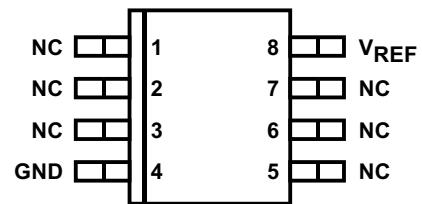


Fig.2 Circuit diagram



ZN404 (CM2) - BOTTOM VIEW



ZN404D (MP8) - TOP VIEW

Fig.1 Pin connections

### ORDERING INFORMATION

Device	Operating Temperature	Package
ZN404	-20°C to +70°C	CM2
ZN404D	-20°C to +70°C	MP8

### ABSOLUTE MAXIMUM RATINGS

Dissipation	300mW
Operating temperature range	
ZN404	-20°C to +70°C
ZN404D	-20°C to +70°C
Storage temperature range	-55°C to +125°C

ZN404

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

Parameter	Symbol	Min.	Typ.	Max.	Units	Test conditions
Output voltage	$V_{REF}$	2.38	2.45	2.52	V	Measured at 2mA
Slope resistance	$R_{REF}$	-	0.1	0.2	$\Omega$	
Reference current	$I_{REF}$	2.0	-	120	mA	
Maximum change in $V_{REF}$	$\Delta V_{REF}$	-	6	33	mV	-20 to +70°C
RMS noise voltage 1Hz-10kHz			10	-	$\mu\text{V}$	1kHz - 10kHz
$V_{REF}$ drift at 70°C			$\pm 10$	-	ppm/1000 hours	CM2 Package

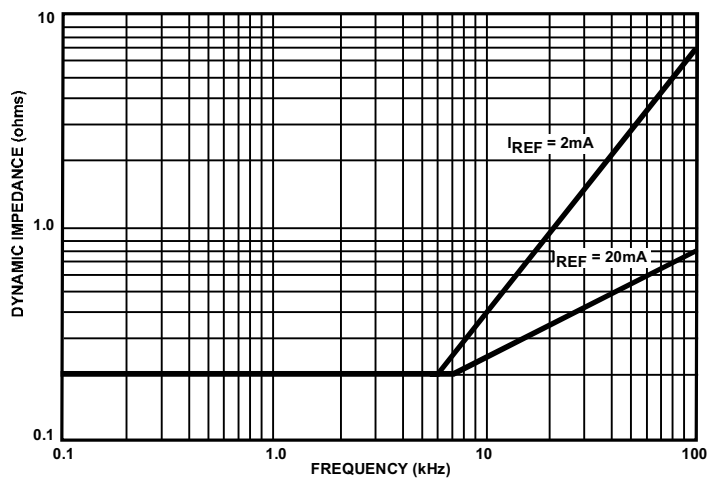


Fig.3 Dynamic impedance

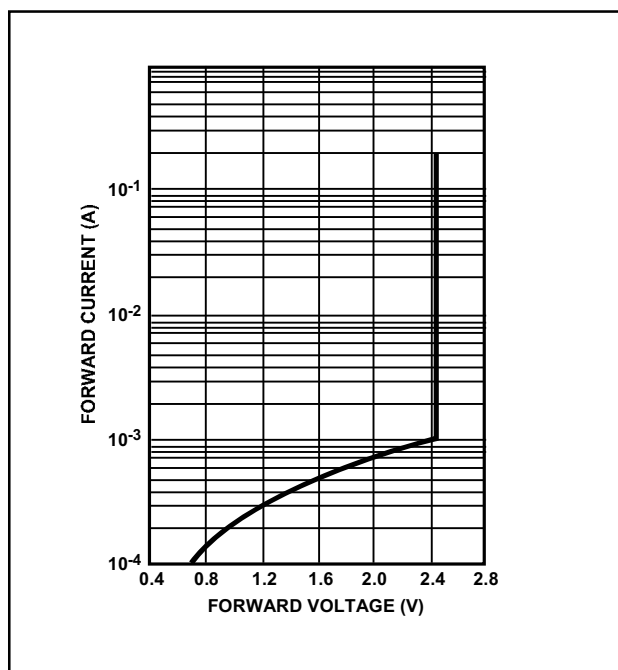


Fig.4 Forward characteristic (typical)

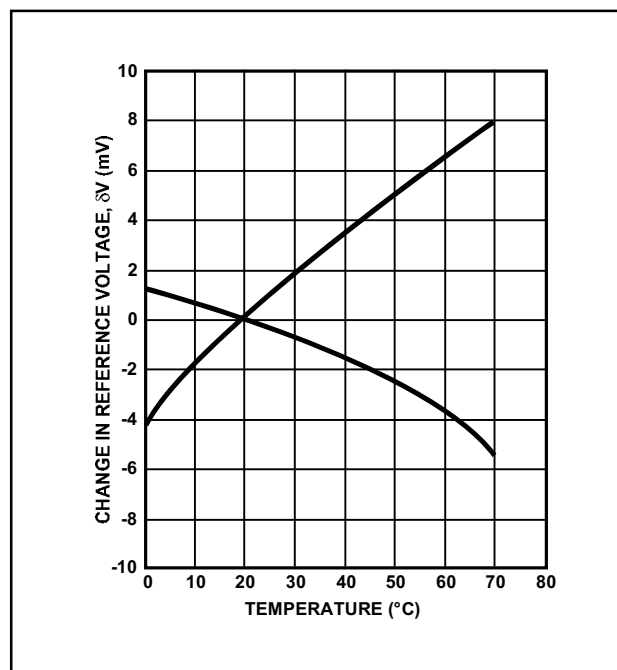


Fig.5 Temperature characteristic (typical)

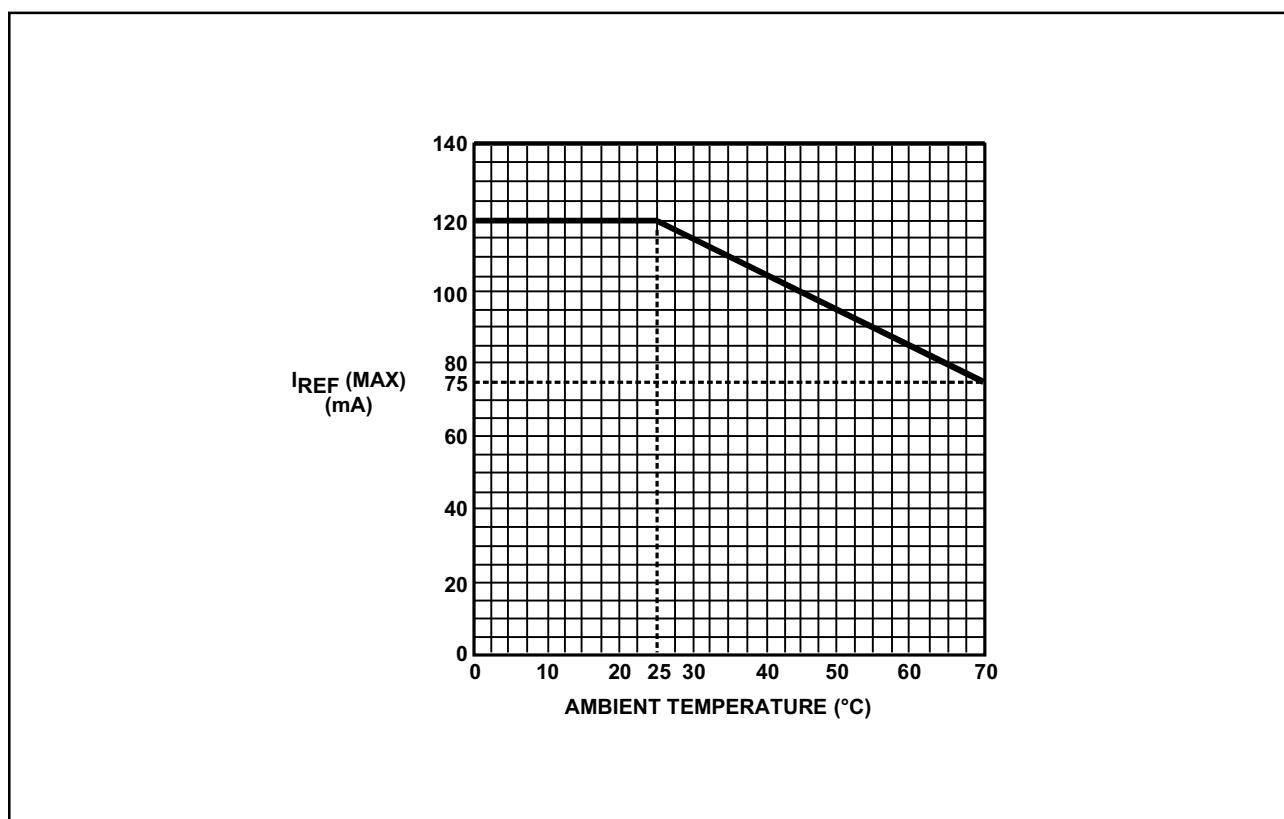


Fig.6 Derating curve