THE DATASHEET OF

ZRA125N801TA

PRECISION 1.25 VOLT MICROPOWER VOLTAGE

ISSUE 2 - FEBRUARY 1997

DEVICE DESCRIPTION

The ZRA125 uses a bandgap circuit desi achieve a precision micropower vol reference of 1.25 volts. The device is avai in small outline surface mount packages, for applications where space savin important, as well as packages for through requirements.

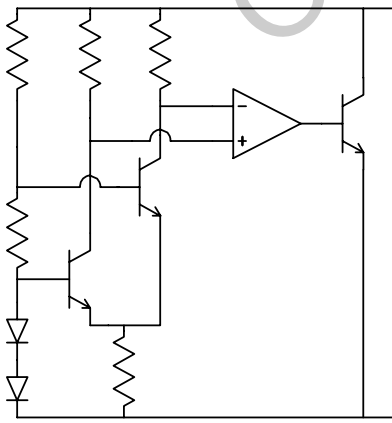
The ZRA125 design provides a stable vo without an external capacitor and is stable capacitive loads. The ZRA125 is recomme for operation between 50µA and 5mA ar is ideally suited to low power and ba powered applications.

Excellent performance is maintained suggested absolute maximum of 25 however the rugged design and 20 processing allows the reference to withs transient effects and currents up to 20 Superior switching capability allows the d to reach stable operating conditions in o few microseconds.

FEATURES

- Small outline SOT23, SO8 and TO92 st packages
- No stabilising capacitor required

SCHEMATIC DIAGRAM



ZRA125

ZRA125

ABSOLUTE MAXIMUM RATING

Reverse Current	25mA
Forward Current	25mA
Operating Temperature	-40 to 85°C
Storage Temperature	-55 to 125°C

Power Dissipation (T_{amb}=25°C)

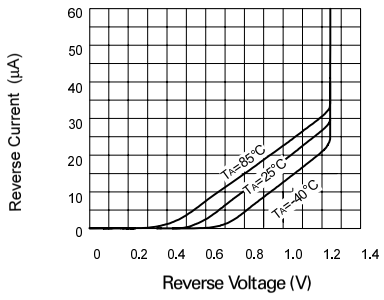
SOT23	330mW
E-Line, 3 pin (TO92)	500mW
E-Line, 2 pin (TO92)	500mW
SO8	625mW

ELECTRICAL CHARACTERISTICS
TEST CONDITIONS (Unless otherwise stated) T_{amb}=25°C

SYMBOL	PARAMETER	CONDITIONS	LIMITS			TOL. %	UNITS
			MIN	TYP	MAX		
V_R	Reverse Breakdown Voltage	I_R=150µA	1.228 1.225 1.21	1.24 1.25 1.25	1.252 1.275 1.29	1 2 3	V
I_{MIN}	Minimum Operating Current			30	50		µA
I_R	Recommended Operating Current		0.05		5		mA
T_C †	Average Reverse Breakdown Voltage Temp. Co.	$I_{R(min)}$ to $I_{R(max)}$		30	90		ppm/°C
R_S §	Slope Resistance			0.65	2		Ω
Z_R	Reverse Dynamic Impedance	I_R = 1mA f = 100Hz I_{AC}= 0.1 I_R		0.5	1		Ω
E_N	Wideband Noise Voltage	I_R = 150µA f = 100Hz to 10kHZ		40			µV(rms)

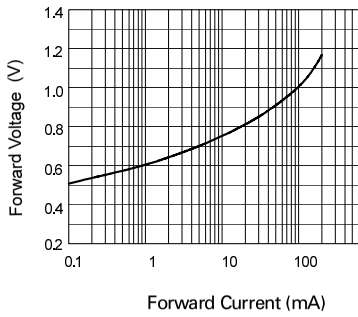
† $$T_C = \frac{V_R\ Change\ x\ 1000000}{V_R\ x\ Temperature\ Change}$$

§ $$R_S = \frac{V_R\ Change(I_R(min)\ to\ I_R(max))}{I_R(max) - I_R(min)}$$

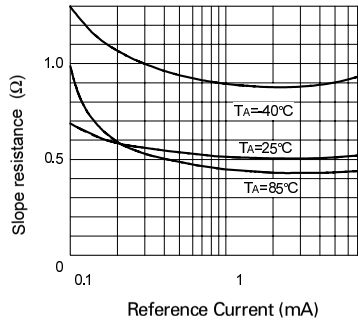


Reverse Characteristics

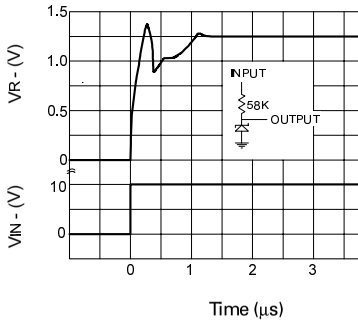
TYPICAL



Forward Characteristics



Slope Resistance v Current



Transient Response (I_R=150µA

ZRA125

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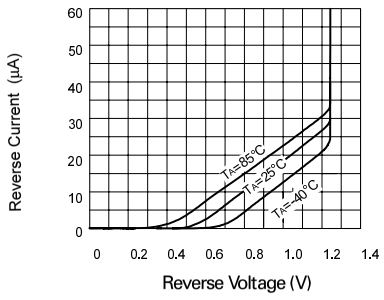

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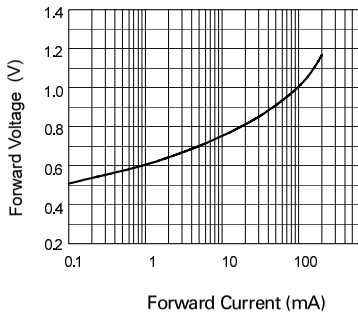
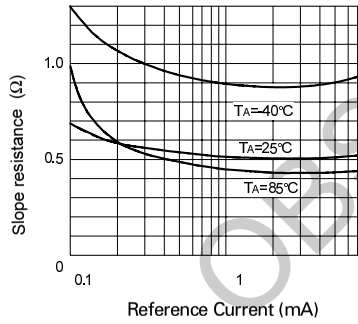
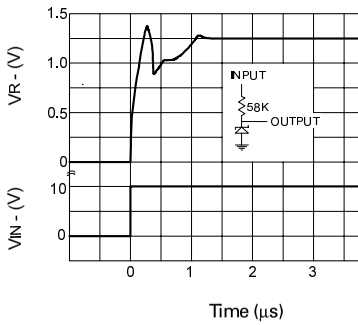
TYPICAL



Forward Characteristics



Slope Resistance v Current

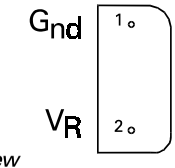


Transient Response (I_R=150µA

ZRA125

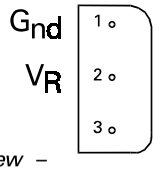
CONNECTION DIAGRAMS

E-Line, 2 pin Package Suffix – Y



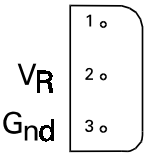
Bottom View

E-Line, 3 pin,Rev Package Suffix – R



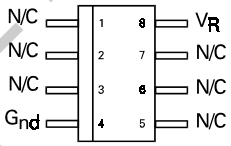
Bottom View –
Pin 3 floating or connected to pin 1

E-Line, 3 pin Package Suffix – A



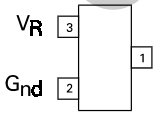
Bottom View –
Pin 1 floating or connected to pin 3

SO8 Package Suffix – N8



Top View

SOT23 Package Suffix – F



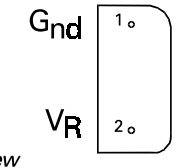
Top View –
Pin 1 floating or connected to pin 2

Part No	Tol%	Package	Par
ZRA125A03	3	E-Line •	ZRA
ZRA125A02	2	E-Line •	ZRA
ZRA125A01	1	E-Line •	ZRA
ZRA125F03	3	SOT23	12A
ZRA125F02	2	SOT23	12E
ZRA125F01	1	SOT23	12D
ZRA125N803	3	SO8	ZRA
ZRA125N802	2	SO8	ZRA
ZRA125N801	1	SO8	ZRA

ZRA125

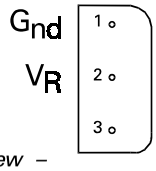
CONNECTION DIAGRAMS

E-Line, 2 pin Package Suffix – Y



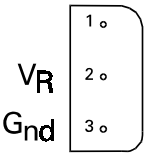
Bottom View

E-Line, 3 pin,Rev Package Suffix – R



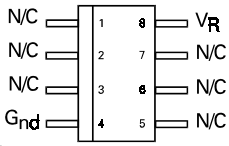
Bottom View –
Pin 3 floating or connected to pin 1

E-Line, 3 pin Package Suffix – A



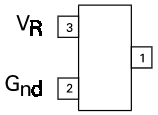
Bottom View –
Pin 1 floating or connected to pin 3

SO8 Package Suffix – N8



Top View

SOT23 Package Suffix – F



Top View –
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ZRA125A03	3	E-Line •	ZRA
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ZRA125F03	3	SOT23	12A
ZRA125F02	2	SOT23	12E
ZRA125F01	1	SOT23	12D
ZRA125N803	3	SO8	ZRA
ZRA125N802	2	SO8	ZRA
ZRA125N801	1	SO8	ZRA

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- Shortage Management
- Alternative Solution
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