LINEAR INTEGRATED CIRCUIT

VOLTAGE STABILIZER

- LOW TEMPERATURE COEFFICIENT
- LOW ZENER RESISTANCE

The TAA 550/TBA 271 is a monolithic integrated voltage stabilizer in a TO–18 two pins metal case. It is especially designed as voltage supplier for varicap diodes in television tuners.

The TAA 550/TBA 271 is supplied in 3 groups of stabilized voltage identified by a letter after the code, as shown in the "ORDERING NUMBERS".

ABSOLUTE MAXIMUM RATINGS

|		
I_z	Zener current at $T_{case} \leqslant 70\,°C$	15 mA
T_{stg}	Storage temperature	–20 to 150 °C
T_{op}	Operating temperature	*

* Refer to "Power rating chart" (Fig. 1)

ORDERING NUMBERS: TAA 550 A or TBA 271 A (for V_z range : 30-32 V)
TAA 550 B or TBA 271 B (for V_z range : 32-34 V)
TAA 550 C or TBA 271 C (for V_z range : 34-36 V)

## MECHANICAL DATA

Dimensions in mm

Lead 1 connected to case

P018 - E
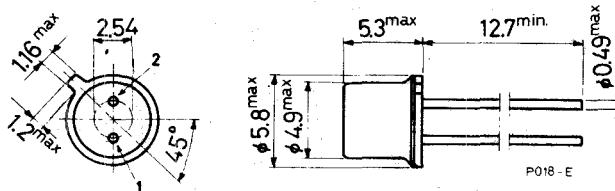
TAA 550
TBA 271

CONNECTION DIAGRAM (bottom view)
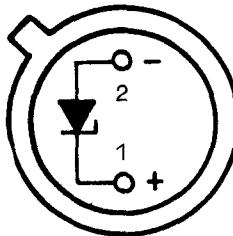
SS 0036

SCHEMATIC DIAGRAM
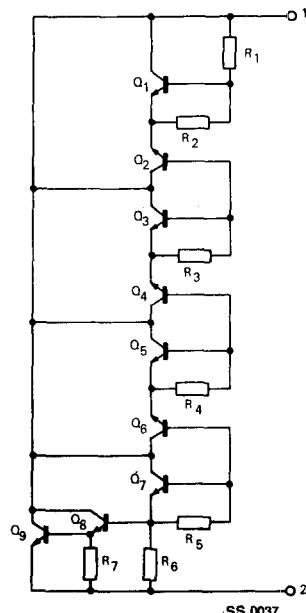
SS 0037

TEST CIRCUITS

Circuit No. 1 (for V_z measurement)

Digital Voltmeter
DVM

1

5mA

+
Vref = 30V
−

2

SS 0038

$V_z = Vref + V_{DVM}$
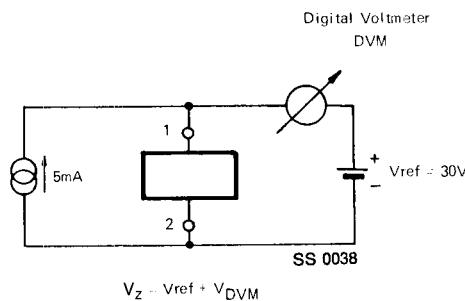
Circuit No. 2 (for r_z measurement)

50 µF

$I_{DC} = 5mA$

1

0.1 µF

Selective
Voltm.SV

$I_{AC} = 0.5$ mA

f = 1 KHz

2

SS 0039

$$r_z = \frac{Vsv}{0.5mA}$$
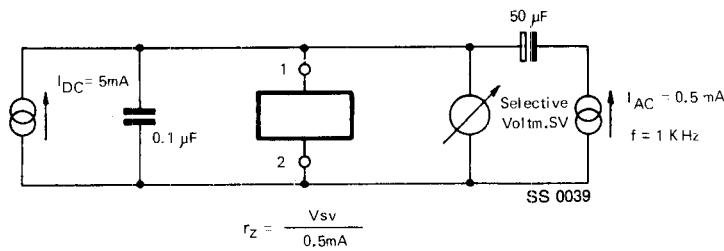
TAA 550
TBA 271

THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal resistance junction–case	max	150	°C/W
$R_{th\ j\text{-}amb}$	Thermal resistance junction–ambient	max	400	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C unless otherwise specified)

| Parameter		Test conditions	Min.	Typ.	Max.	Unit
V_z	Zener voltage	I_z = 5 mA (circuit No. 1) for **TAA 550 A/TBA 271 A** for **TAA 550 B/TBA 271 B** for **TAA 550 C/TBA 271 C**	30 32 34	31 33 35	32.2 34.2 36	V V V
r_z	Zener dynamic resistance	I_z = 5 mA I_{AC} = 0.5 mA f = 1 kHz (circuit No. 2)		10	25	Ω
$\dfrac{\Delta V_z}{\Delta T_{amb}}$	Temperature coefficient	I_z = 5 mA ΔT_{amb} = 0 to 50 °C	–3.2		+1.6	mV/°C

Fig. 1 - Power rating chart

GS 0201
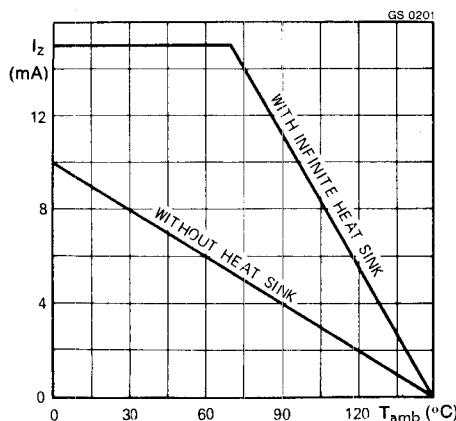
Fig. 2 - Typical zener dynamic
resistance vs zener current

GS 0202

$$r_z = f(I_z) \qquad f = 1KHz$$

$$I_{AC} = \frac{I_z}{10}$$
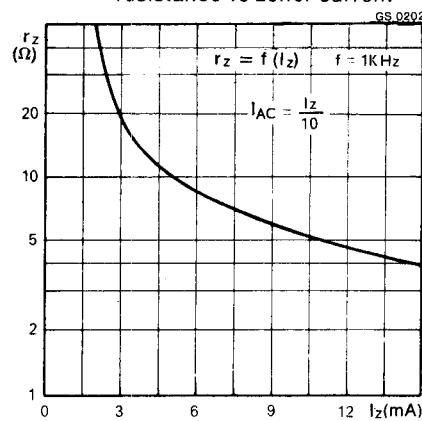
Fig. 3 - Typical temperature
coefficient

GS 0203
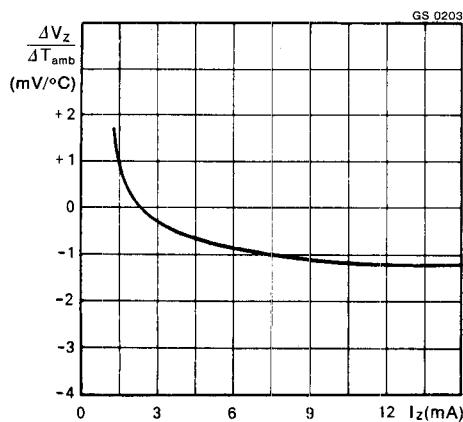
Fig. 4 - Typical $\dfrac{\Delta V_z(t)}{\Delta V_z(\infty)}$ vs time

GS 0204

$I_z = 5$ mA

FREE AIR

WITH HEAT SINK (65°C/W)
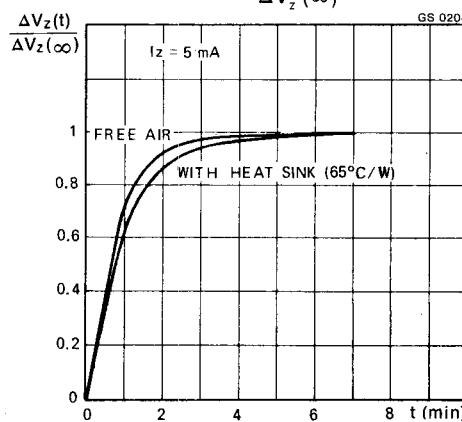
TAA 550
TBA 271

TYPICAL APPLICATION

Rp= 18K

$V_f = 160V$

470pF

1

2

15K   15K

15K

TO VARICAPS

SS. 0040