

## PNP Germanium UHF Transistor

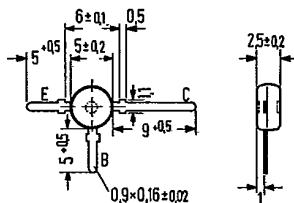
AF 289

SIEMENS AKTIENGESELLSCHAFT

T-31-07

AF 289 is a germanium PNP UHF planar transistor with passivated surface in low-capacitance 50 B 3 DIN 41867 plastic package similar to TO 119. This transistor is particularly intended for use in low-noise regulated input stages up to 950 MHz in diode-tuned tuners.

Type	Ordering code
AF 289	Q62701-F92



Approx. weight 0.25 g Dimensions in mm

## Maximum ratings

Collector-emitter voltage  
Collector-base voltage  
Emitter-base voltage  
Collector current  
Emitter current  
Base current  
Junction temperature  
Storage temperature range  
Total power dissipation

$-V_{CEO}$	15	V
$-V_{CBO}$	20	V
$-V_{EBO}$	0.3	V
$-I_C$	10	mA
$I_E$	11	mA
$-I_B$	1	mA
$T_j$	96	°C
$T_{stg}$	-30 to +75	°C
$P_{tot}$	60	mW

## Thermal resistance

Junction to ambient air

$R_{thJA}$	< 600	K/W
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**Static characteristics ( $T_{amb} = 25^\circ\text{C}$ )**

DC current gain

( $-I_C = 2\text{ mA}$ ;  $-V_{CE} = 10\text{ V}$ )

Collector cutoff current

( $-V_{CBO} = 20\text{ V}$ )

$h_{FE}$	30 (>12)	-
$I_{CBO}$	<15	$\mu\text{A}$

**Dynamic characteristics ( $T_{amb} = 25^\circ\text{C}$ )**

Transition frequency

( $-I_C = 3\text{ mA}$ ;  $-V_{CE} = 10\text{ V}$ ;  $f = 100\text{ MHz}$ )

Reverse transfer capacitance

( $-V_{CE} = 1\text{ V}$ ;  $f = 1\text{ MHz}$ )

Collector-base capacitance

( $-V_{CB} = 10\text{ V}$ ;  $f = 1\text{ MHz}$ )

Power gain

( $-I_C = 3\text{ mA}$ ;  $-V_{CB} = 10\text{ V}$ ;  $f = 800\text{ MHz}$ ; $R_L = 2\text{ k}\Omega$ )

Power gain

( $-I_C = 3\text{ mA}$ ;  $-V_{CB} = 10\text{ V}$ ;  $f = 800\text{ MHz}$ ; $R_L = 500\text{ k}\Omega$ )

Collector current for max. power gain

( $V_{CC} = 12\text{ V}$ ;  $R_{CC} = 1\text{ k}\Omega$ ; $f = 800\text{ MHz}$ )

Noise figure

( $-I_C = 3\text{ mA}$ ;  $-V_{CB} = 10\text{ V}$ ;  $f = 800\text{ MHz}$ ; $R_g = 60\text{ }\Omega$ )Min. interference voltage<sup>1)</sup>( $-V_{CC} = 12\text{ V}$ ;  $R_{CC} = 1\text{ k}\Omega$ ; $f_M = 200\text{ MHz}$ ;  $R_g = 75\text{ }\Omega$  $R_L = 900\text{ }\Omega$ )

$f_T$	950	MHz
$C_{12b}$	50	fF
$-C_{CBO}$	0.4	pF
$G_{pb}$	19	dB
$G_{pb}$	12.5	dB
$I_{CGpbmax}$	>3	mA
NF	3.4 (<4.5)	dB
$V_{int1\%}$	20	mV

1)  $V_{int} 1\%$  is the rms value of half the EMF of a 100% sine-wave modulated TV carrier with a generator resistance of  $75\text{ }\Omega$  which causes 1% amplitude modulation on the signal carrier.