PNP Germanium UHF Transistor

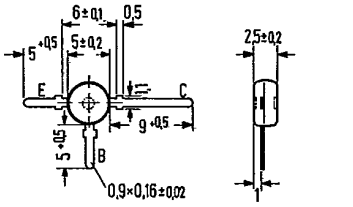
AF 289

SIEMENS AKTIENGESELLSCHAF

T-31-07

AF 289 is a germanium PNP UHF planar transistor with passivated surface in low-capacitance 50 B 3 DIN 41 867 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	$-V_{CEO}$	15	V
Collector-base voltage	$-V_{CBO}$	20	V
Emitter-base voltage	$-V_{EBO}$	0.3	V
Collector current	$-I_C$	10	mA
Emitter current	I_E	11	mA
Base current	$-I_B$	1	mA
Junction temperature	T_j	96	°C
Storage temperature range	T_{stg}	−30 to +75	°C
Total power dissipation	P_{tot}	60	mW

Thermal resistance

Junction to ambient air	R_{thJA}	<600	K/W

Static characteristics (T_{amb} = 25 °C)			
DC current gain ($-I_C$ = 2 mA; $-V_{CE}$ = 10 V)	h_{FE}	30 (> 12)	–
Collector cutoff current ($-V_{CBO}$ = 20 V)	I_{CBO}	< 15	µA
Dynamic characteristics (T_{amb} = 25 °C)			
Transition frequency ($-I_C$ = 3 mA; $-V_{CE}$ = 10 V; f = 100 MHz)	f_T	950	MHz
Reverse transfer capacitance ($-V_{CE}$ = 1 V; f = 1 MHz)	C_{12b}	50	fF
Collector-base capacitance ($-V_{CB}$ = 10 V; f = 1 MHz)	$-C_{CBO}$	0.4	pF
Power gain ($-I_C$ = 3 mA; $-V_{CB}$ = 10 V; f = 800 MHz; R_L = 2 kΩ)	G_{pb}	19	dB
Power gain ($-I_C$ = 3 mA; $-V_{CB}$ = 10 V; f = 800 MHz; R_L = 500 kΩ)	G_{pb}	12.5	dB
Collector current for max. power gain (V_{CC} = 12 V; R_{CC} = 1 kΩ; f = 800 MHz)	$I_{CGpbmax}$	> 3	mA
Noise figure ($-I_C$ = 3 mA; $-V_{CB}$ = 10 V; f = 800 MHz; R_g = 60 Ω)	NF	3.4 (< 4.5)	dB
Min. interference voltage[1] ($-V_{CC}$ = 12 V; R_{CC} = 1 kΩ; f_M = 200 MHz; R_g = 75 Ω R_L = 900 Ω)	$V_{int1\%}$	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 Ω which causes 1% amplitude modulation on the signal carrier.

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