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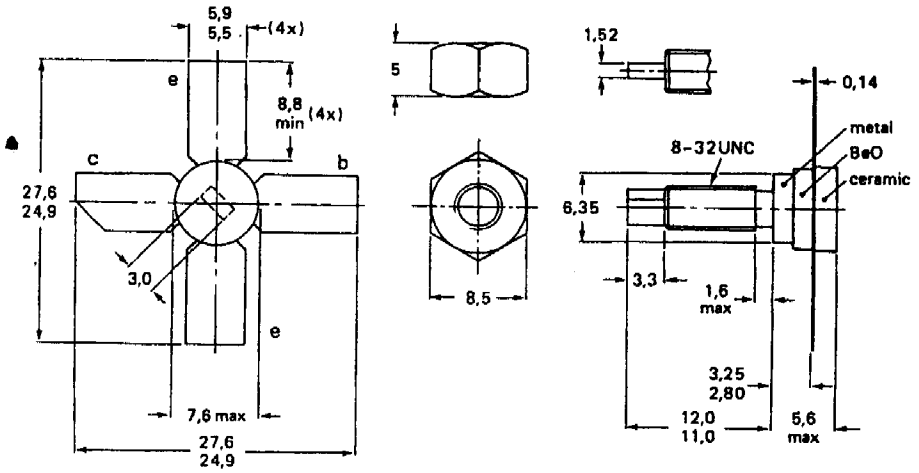
BFQ54

MECHANICAL DATA

Dimensions in mm

Fig. 1 SOT122.



Torque on nut: min. 0.75 Nm (7.5 kg cm)
max. 0.85 Nm (8.5 kg cm)

diameter of clearance hole in heatsink: max. 4.2 mm
mounting hole to have no burrs at either end.
de-burrings must leave surface flat; do not chamfer or countersink either end of the hole.

When locking is required an adhesive is preferred instead of a lock washer.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134).

Collector-base voltage (open emitter)	$-V_{CBO}$	max.	25 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	18 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	2 V
Collector current (DC)	$-I_C$	max.	150 mA
Total power dissipation up to T_{mb} = 125 °C	P_{tot}	max.	2.25 W
Storage temperature range	T_{stg}		−65 to +150 °C
Operating junction temperature	T_j	max.	200 °C

THERMAL RESISTANCE

From junction to mounting base	$R_{th\ j\text{-}mb}$	=	28 K/W
From mounting base to heatsink	$R_{th\ mb\text{-}h}$	=	0.6 K/W

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified

Collector cut-off current $I_E = 0$; $-V_{CB} = 15$ V	I_{CBO}	max.	50 μA
DC current gain $-I_C = 150$ mA; $-V_{CE} = 15$ V	h_{FE} h_{FE}	min. typ.	25 75
Transition frequency at f = 500 MHz (note 1) $-I_C = 150$ mA; $-V_{CE} = 15$ V	f_T	typ.	4.5 GHz
Collector capacitance at f = 1 MHz $I_E = i_e = 0$; $-V_{CB} = 15$ V	C_c	typ.	2.0 pF
Emitter capacitance at f = 1 MHz $I_C = i_c = 0$; $-V_{EB} = 0.5$ V	C_e	typ.	6.5 pF
Feedback capacitance at f = 1 MHz $I_C = 0$ mA; $V_{CE} = 15$ V	C_{re}	typ.	1.3 pF
Collector-stud capacitance	C_{cs}	typ.	1.2 pF
Maximum unilateral power gain (S12 assumed to be zero) $-I_C = 120$ mA; $-V_{CE} = 15$ V; f = 500 MHz $G_{UM} = 10 \log \frac{\lvert S21\rvert^2}{(1-\lvert S11\rvert^2)(1-\lvert S22\rvert)^2}$	G_{UM}	typ.	16 dB
Output voltage at d_{im} = −60 dB (DIN 45005B, para 6.3: 3-tone) $-I_C = 120$ mA; $-V_{CE} = 15$ V; $R_L = 75\ \Omega$ $V_p = V_o$ at d_{im} = −60 dB; f_p = 795.25 MHz $V_q = V_o$ −6 dB; f_q = 803.25 MHz $V_r = V_o$ −6 dB; f_r = 805.25 MHz measured at $f_{(p+q-r)}$ = 793.25 MHz	V_o	typ.	900 mV

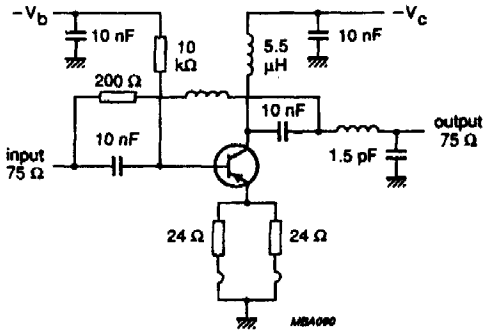


Fig. 2 MATV-test circuit F = 40 to 860 MHz

Note

1. Measured under pulse conditions.