NPN 12 GHz wideband transistor crystal

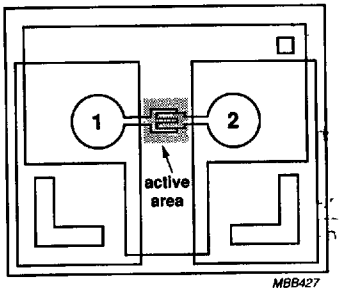
T-31-90

X3A-BFQ33

DESCRIPTION

NPN crystal used in BFQ33C (SOT173) and BFG33 (SOT143). Crystals are supplied as whole wafer, fully tested but unsawn.

ELEMENT LAYOUT



Active area: 10 µm around metallization pattern.

Fig.1 X3A-BFQ33 crystal.

MECHANICAL DATA

Crystal	
Top metallization	Au 1.15 µm
Back metallization	AuAs 0.35 µm
Passivation	Si_3N_4 0.5 µm
Base bond pad 1	dia. 50 µm
Emitter bond pad 2	dia. 50 µm
Collector contact	on underside of crystal
Wafer	
Diameter	76.1 mm (3 inches)
Crystal pitch	350 x 300 µm
Separation lane	70 µm
Sawing lane	50 µm
Slice thickness	160 ±15 µm
Average number of good elements per wafer	10 000
Faulty devices	inked out
Visual inspection	to URV-3-5-52/733

LIMITING VALUES

In accordance with the Absolute Maximum System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	9	V
V_{CEO}	collector-emitter voltage	open base	7	V
V_{EBO}	emitter-base voltage	open collector	2	V
I_C	DC collector current		20	mA
T_j	junction temperature		150	°C

CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current		–	–	50	nA
h_{FE}	DC current gain		50	90	–	
f_T	transition frequency	I_C = 15 mA; V_{CE} = 5 V; f = 500 MHz	–	12	–	GHz
F	noise figure	I_C = 5 mA; V_{CE} = 5 V; f = 2 GHz	–	3	–	dB