BFX30

FEATURES

- High current (max.600 mA)
- Low voltage (max. 65 V).

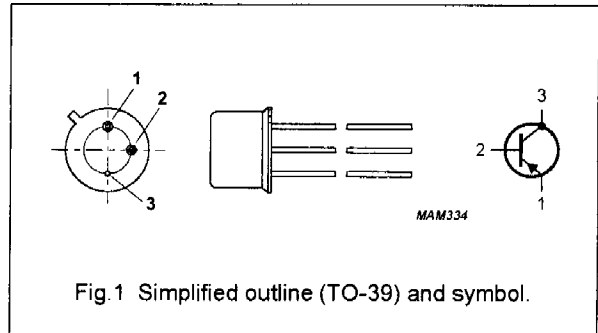## APPLICATIONS

- Switching applications.

DESCRIPTION

PNP transistor in a TO-39 metal package.

PINNING

PIN	DESCRIPTION
1	emitter
2	base
3	collector, connected to case

Fig.1 Simplified outline (TO-39) and symbol.

QUICK REFERENCE DATA

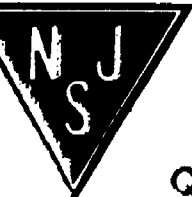| SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	–	–65	V
V_{CEO}	collector-emitter voltage	open base	–	–	–65	V
I_C	collector current (DC)		–	–	–600	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\ °C$	–	–	600	mW
h_{FE}	DC current gain	$I_C = -10\ mA;\ V_{CE} = -400\ mV$	50	90	200	
f_T	transition frequency	$I_C = -50\ mA;\ V_{CE} = -10\ V;\ f = 100\ MHz$	100	–	–	MHz
t_{off}	turn-off time	$I_{Con} = -150\ mA;\ I_{Bon} = -15\ mA;\ I_{Boff} = 10\ mA$	–	–	300	ns

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	–65	V
V_{CEO}	collector-emitter voltage	open base	–	–65	V
V_{EBO}	emitter-base voltage	open collector	–	–5	V
I_C	collector current (DC)		–	–600	mA
I_{CM}	peak collector current		–	–600	mA
I_{BM}	peak base current		–	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\ °C$	–	600	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	200	°C
T_{amb}	operating ambient temperature		–65	+150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	in free air	300	K/W

Quality Semi-Conductors

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0$; $V_{CB} = -65$ V	–	–	–500	nA
		$I_E = 0$; $V_{CB} = -50$ V	–	–	–50	nA
		$I_E = 0$; $V_{CB} = -50$ V; $T_j = 100$ °C	–	–	–2	μA
I_{EBO}	emitter cut-off current	$I_C = 0$; $V_{EB} = -5$ V	–	–	–500	nA
		$I_C = 0$; $V_{EB} = -3$ V	–	–	–100	nA
h_{FE}	DC current gain	$I_C = -1$ mA; $V_{CE} = -400$ mV	40	–	–	
		$I_C = -10$ mA; $V_{CE} = -400$ mV	50	90	200	
		$I_C = -50$ mA; $V_{CE} = -400$ mV	20	–	–	
		$I_C = -150$ mA; $V_{CE} = -400$ mV	10	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -150$ mA; $I_B = -15$ μA	–	–	–400	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -30$ mA; $I_B = -1$ mA	–	–	–900	mV
		$I_C = -150$ mA; $I_B = -15$ mA	–	–	–1.3	V
C_c	collector capacitance	$I_E = i_e = 0$; $V_{CB} = -10$ V; $f = 1$ MHz	–	6	–	pF
C_e	emitter capacitance	$I_C = i_c = 0$; $V_{EB} = -2$ V; $f = 1$ MHz	–	18	–	pF
f_T	transition frequency	$I_C = -50$ mA; $V_{CE} = -10$ V; $f = 100$ MHz	100	–	–	MHz
Switching Times (between 10% and 90% levels); see Fig.2						
t_{on}	turn-on time	$I_{Con} = -150$ mA; $I_{Bon} = -15$ mA; $I_{Boff} = 15$ mA	–	–	45	ns
t_d	delay time		–	–	15	ns
t_r	rise time		–	–	35	ns
t_{off}	turn-off time		–	–	300	ns
t_s	storage time		–	–	250	ns
t_f	fall time		–	–	50	ns

scale: 0 — 5 — 10 mm
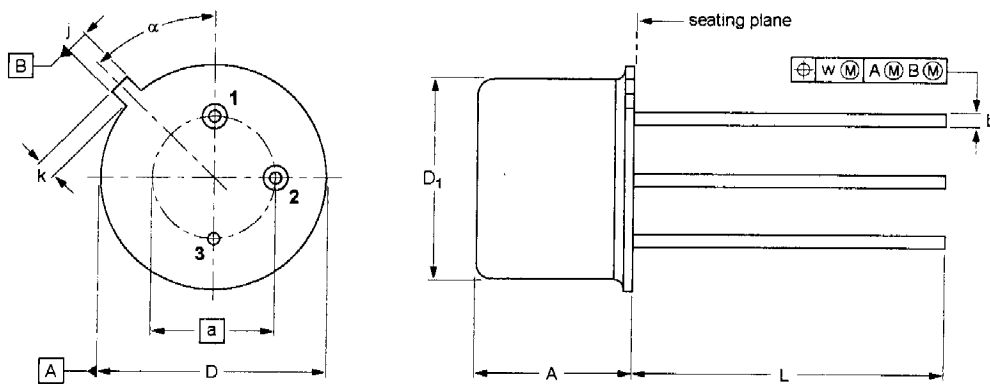
DIMENSIONS (mm are the original dimensions)

UNIT	A	a	b	D	D₁	j	k	L	w	α
mm	6.60 / 6.35	5.08	0.48 / 0.41	9.39 / 9.08	8.33 / 8.18	0.85 / 0.75	0.95 / 0.75	14.2 / 12.7	0.2	45°