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BFX87
BFX88

SILICON PLANAR EPITAXIAL TRANSISTORS

PNP transistors in TO-39 metal envelopes for general industrial applications.

QUICK REFERENCE DATA

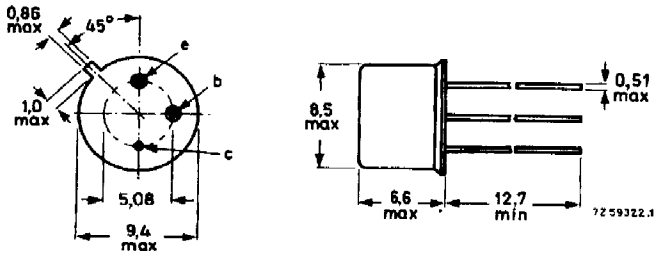
			BFX87	BFX88	
Collector-base voltage (open emitter)	$-V_{CBO}$	max.	50	40	V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	50	40	V
Collector current (peak value)	$-I_{CM}$	max.	600	600	mA
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	max.	600	600	mW
DC current gain					
$-I_C$ = 10 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	40	40	
		typ.	125	125	
Transition frequency at f = 100 MHz					
$-I_C$ = 50 mA; $-V_{CE}$ = 10 V	f_T	min.	100	100	MHz

MECHANICAL DATA

Dimensions in mm

Fig.1 TO-39.

Collector connected to case



Maximum lead diameter is guaranteed only for 12.7 mm.

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RATINGS

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

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Collector-base voltage (open emitter)	$-V_{CBO}$	max.	50	40	V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	50	40	V
Collector current (DC)	$-I_C$	max.	600		mA
Collector current (peak value)	$-I_{CM}$	max.	600		mA
Emitter current	I_{EM}	max.	600		mA
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	max.	600		mW
Storage temperature range	T_{stg}		−65 to + 150		°C
Junction temperature	T_j	max.	+ 200		°C

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\,j\text{-}a}$	=	300	K/W

CHARACTERISTICS

			BFX87	BFX88	
Collector cut-off current					
$-V_{CB}$ = 50 V; I_E = 0	$-I_{CBO}$	typ.	1.0	—	nA
		max.	500	—	nA
$-V_{CB}$ = 40 V; I_E = 0	$-I_{CBO}$	typ.	0.5	1.0	nA
		max.	50	500	nA
$-V_{CB}$ = 30 V; I_E = 0	$-I_{CBO}$	typ.	—	0.5	nA
		max.	—	50	nA
$-V_{CB}$ = 40 V; I_E = 0; T_j = 100 °C	$-I_{CBO}$	typ.	0.03	—	μA
		max.	2.0	—	μA
$-V_{CB}$ = 30 V; I_E = 0; T_j = 100 °C	$-I_{CBO}$	typ.	—	0.03	μA
		max.	—	2.0	μA
Emitter cut-off current					
$-V_{EB}$ = 4.0 V; I_C = 0	$-I_{EBO}$	typ.	2.0		nA
		max.	500		nA
$-V_{EB}$ = 3.0 V; I_C = 0	$-I_{EBO}$	typ.	1.0		nA
		max.	100		nA

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DC current gain				
$-I_C$ = 1.0 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	40	
		typ.	105	
$-I_C$ = 10 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	40	
		typ.	125	
$-I_C$ = 150 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	40	
		typ.	90	
$-I_C$ = 500 mA; $-V_{CE}$ = 10 V	h_{FE}	min.	25	
		typ.	40	
Collector-emitter saturation voltage				
$-I_C$ = 150 mA; $-I_B$ = 15 mA	$-V_{CE(sat)}$	typ.	0.15	V
		max.	0.40	V
Base-emitter saturation voltage				
$-I_C$ = 30 mA; $-I_B$ = 1.0 mA	$-V_{BE(sat)}$	typ.	0.77	V
		max.	0.90	V
$-I_C$ = 150 mA; $-I_B$ = 15 mA	$-V_{BE(sat)}$	typ.	1.05	V
		max.	1.30	V
Collector capacitance				
$-V_{CB}$ = 10 V; $I_E = I_e$ = 0; f = 1.0 MHz	C_c	typ.	6.0	pF
		max.	12	pF
Emitter capacitance				
$-V_{EB}$ = 2.0 V; $I_C = I_c$ = 0; f = 1.0 MHz	C_e	typ.	18	pF
		max.	30	pF
Transition frequency				
$-I_C$ = 50 mA; $-V_{CE}$ = 10 V; f = 100 MHz; T_{amb} = 25 °C	f_T	min.	100	MHz
		typ.	360	MHz
Saturated switching times				
Turn-on time	t_{on}	typ.	25	ns
		max.	60	ns
Turn-off time	t_{off}	typ.	55	ns
		max.	150	ns
h-parameters				
Measured at $-I_C$ = 10 mA; $-V_{CE}$ = 10 V; f = 1.0 kHz; T_{amb} = 25 °C				
Input impedance	h_{ie}	typ.	600	Ω
Voltage feedback ratio	h_{re}	typ.	1.50×10^{-4}	
Forward current transfer ratio	h_{fe}	typ.	155	
Output admittance	h_{oe}	typ.	104	μmho