SILICON PLANAR TRANSISTORS

N-P-N transistors in a plastic SOT-23 package.

Primarily intended for a.m. mixers and i.f. amplifiers in a.m./f.m. receivers using SMD technology.

QUICK REFERENCE DATA

			BF840 | BF841	
Collector-base voltage (open emitter)	V_{CBO}	max.	40	V
Collector-emitter voltage (open base)	V_{CEO}	max.	40	V
Collector current (d.c.)	I_C	max.	25	mA
Base current I_C = 1 mA; V_{CE} = 10 V	I_B		4,5–15 | 8–28	μA
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	max.	250	mW
Junction temperature	T_j	max.	150	°C
Feedback capacitance at f = 1 MHz I_C = 1 mA; V_{CE} = 10 V	C_{re}	typ.	0,3	pF

MECHANICAL DATA

Fig. 1 SOT-23.

Dimensions in mm

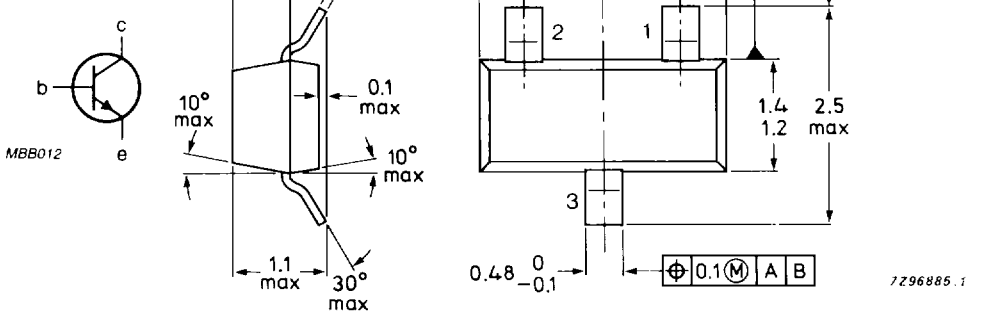
Marking code:

BF840 : NCp

BF841 : NDp

Pinning:

1 = base
2 = emitter
3 = collector



TOP VIEW

RATINGS

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

Collector-base voltage (open emitter)	V_{CBO}	max.	40	V
Collector-emitter voltage (open base)	V_{CEO}	max.	40	V
Emitter-base voltage (open collector)	V_{EBO}	max.	4	V
Collector current (d.c.)	I_C	max.	25	mA
Total power dissipation up to T_{amb} = 25 °C*	P_{tot}	max.	250	mW
Storage temperature	T_{stg}		−65 to +150	°C
Junction temperature	T_j	max.	150	°C

THERMAL RESISTANCE

From junction to ambient*	$R_{th\ j\text{-}a}$	=	500	K/W

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

Collector cut-off current					
I_E = 0; V_{CB} = 20 V	I_{CBO}	max.	100		nA
Base-emitter voltage					
I_C = 1 mA; V_{CE} = 10 V	V_{BE}	typ.	700		mV
			650 to 740		mV
			BF840	BF841	
Base current					
I_C = 1 mA; V_{CE} = 10 V	I_B		4,5–15	8–28	μA
Transition frequency at f = 100 MHz					
I_C = 1 mA; V_{CE} = 10 V	f_T	typ.	380	380	MHz
Feedback capacitance at f = 1 MHz					
I_C = 1 mA; V_{CE} = 10 V	C_{re}	typ.	0,3	0,3	pF
Noise figure					
I_C = 1 mA; V_{CE} = 10 V; f = 0,2 MHz; R_S = 200 Ω	F	typ.	1,5	2,0	dB

* Mounted on a ceramic substrate of 8 mm x 10 mm x 0,7 mm.