

UTC BD139 NPN EPITAXIAL SILICON TRANSISTOR

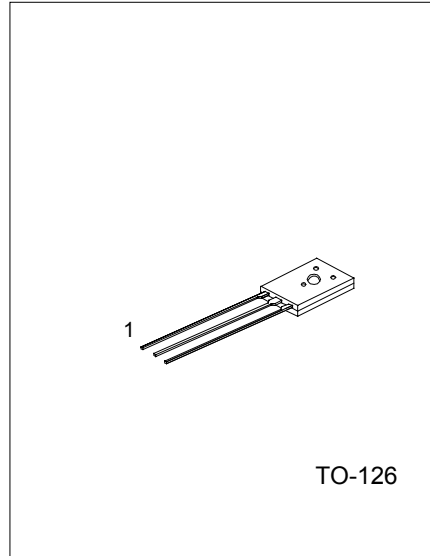
NPN POWER TRANSISTORS

FEATURES

- *High current (max.1.5A)
- *Low voltage (max.80V)

APPLICATION

- *Driver stages in hi-fi amplifiers and television circuits.



1:EMITTER 2:COLLECTOR 3:BASE

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	CONDITIONS	MIN	MAX	UNIT
Collector-base voltage	V _{CB0}	Open emitter	-	100	V
Collector-emitter voltage	V _{CEO}	Open base	-	80	V
Emitter-base voltage	V _{EBO}	Open collector	-	5	V
Collector current(DC)	I _c		-	1.5	A
Peak collector current	I _{cM}		-	2	A
Peak base current	I _{BM}		-	1	A
Total power dissipation	P _{tot}	T _{mb} ≤ 70°C	-	8	W
Storage Temperature	T _{stg}		-65	+150	°C
Junction Temperature	T _j		-	+150	°C
Operating ambient temperature	T _{amb}		-65	+150	°C

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	CONDITIONS	VALUE	UNIT
Thermal resistance from junction to ambient	R _{th j-a}	Note1	100	K/W
Thermal resistance from junction to mounting base	R _{th j-mb}		10	K/W

Note 1: Refer to TO-126 standard mounting conditions.

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ELECTRICAL CHARACTERISTICS (T_j=25°C, unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Collector cut-off current	I _{CBO}	I _E =0, V _{CB} =30V	-	-	100	nA
		I _E =0, V _{CB} =30V, T _j =125°C	-	-	10	μA
Emitter cut-off current	I _{EBO}	I _C =0, V _{EB} =5V	-	-	100	nA
DC current gain	h _{FE}	V _{CE} =2V (See Fig.2)				
		I _C =5mA	40	-	-	
		I _C =150mA	63	-	250	
DC current gain BD139-10 BD139-16	h _{FE}	I _C =500mA	25	-	-	
		I _C =150mA, V _{CE} =2V (See Fig.1)	63	-	160	
BD139-16	h _{FE}	I _C =150mA, V _{CE} =2V (See Fig.1)	100	-	250	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =500 mA, I _B =50mA	-	-	0.5	V
Base-emitter voltage	V _{BE}	I _C =500 mA, V _{CE} =2V	-	-	1	V
Transition frequency	f _T	I _C =500 mA, V _{CE} =5V, f=100MHz	-	190	-	MHz

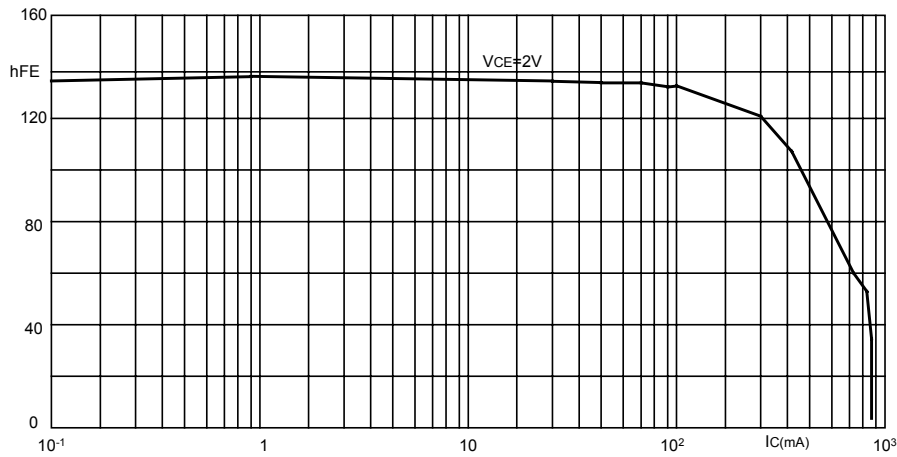


Fig.1 DC current gain; typical values.

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