

2SD0946, 2SD0946A, 2SD0946B (2SD946, 2SD946A, 2SD946B)

Silicon NPN epitaxial planar type darlington

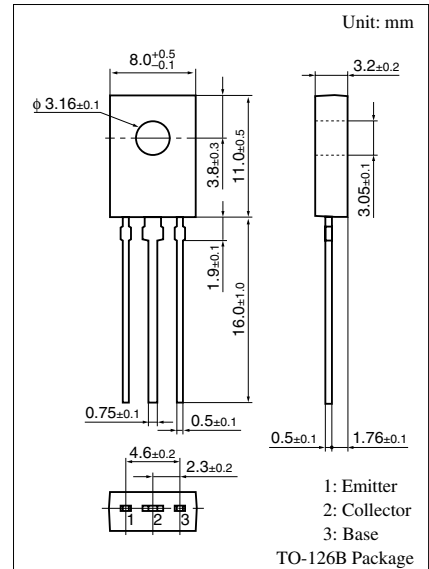
For low-frequency amplification

■ Features

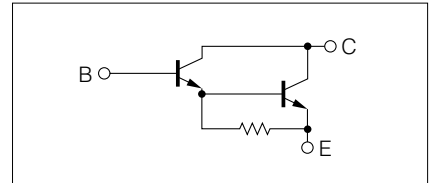
- Forward current transfer ratio h_{FE} is designed high, which is appropriate to the driver circuit of motors and printer hammer
- A shunt resistor is omitted from the driver

■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit	
Collector to base voltage	2SD0946 2SD0946A 2SD0946B	V_{CBO}	30	V
			60	
			100	
Collector to emitter voltage	2SD0946 2SD0946A 2SD0946B	V_{CEO}	25	V
			50	
			80	
Emitter to base voltage	V_{EBO}	5	V	
Peak collector current	I_{CP}	1.5	A	
Collector current ($T_C = 25^\circ\text{C}$)	I_C	1	A	
Collector power dissipation	P_C	1.2	W	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	



Internal Connection



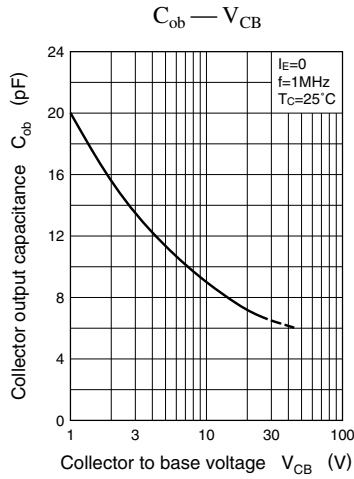
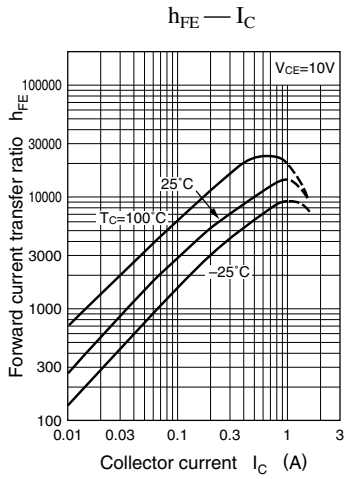
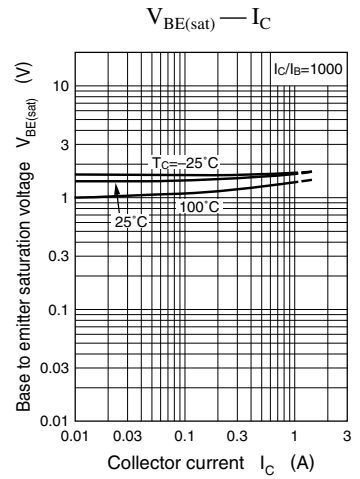
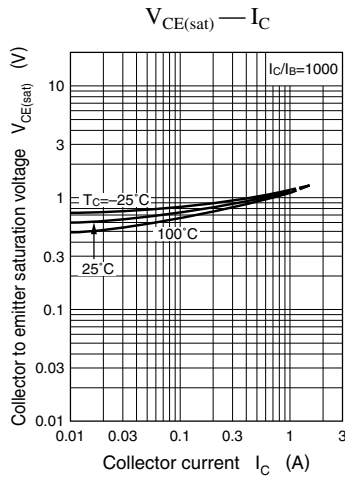
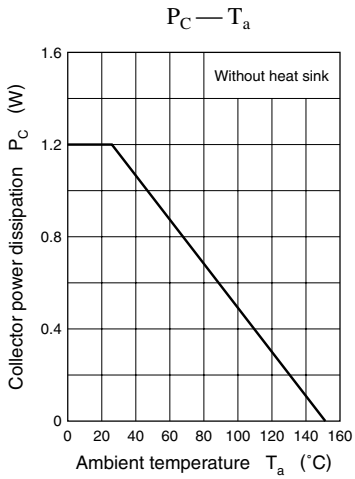
■ Electrical Characteristics $T_C = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit	
Collector cutoff current	I_{CBO}	$V_{CB} = 25\text{ V}, I_E = 0$			100	nA	
Emitter cutoff current	I_{EBO}	$V_{EB} = 4\text{ V}, I_C = 0$			100	nA	
Collector to base voltage	2SD0946 2SD0946A 2SD0946B	V_{CBO}	$I_C = 100\ \mu\text{A}, I_E = 0$	30			V
				60			
				100			
Collector to emitter voltage	2SD0946 2SD0946A 2SD0946B	V_{CEO}	$I_C = 1\text{ mA}, I_B = 0$	25			V
				50			
				80			
Emitter to base voltage	V_{EBO}	$I_E = 100\ \mu\text{A}, I_C = 0$	5			V	
Forward current transfer ratio *	h_{FE}	$V_{CE} = 10\text{ V}, I_C = 1\text{ A}$	4 000		40 000		
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1\text{ A}, I_B = 1\text{ mA}$			1.8	V	
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1\text{ A}, I_B = 1\text{ mA}$			2.2	V	
Transition frequency	f_T	$V_{CB} = 10\text{ V}, I_E = -50\text{ mA}, f = 200\text{ MHz}$		150		MHz	

Note) *: Rank classification

Rank	Q	R	S
h_{FE}	4 000 to 10 000	8 000 to 20 000	16 000 to 40 000

Note.) The Part numbers in the Parenthesis show conventional part number.



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