

2SB937, 2SB937A

Silicon PNP epitaxial planar type Darlington

For power amplification and switching

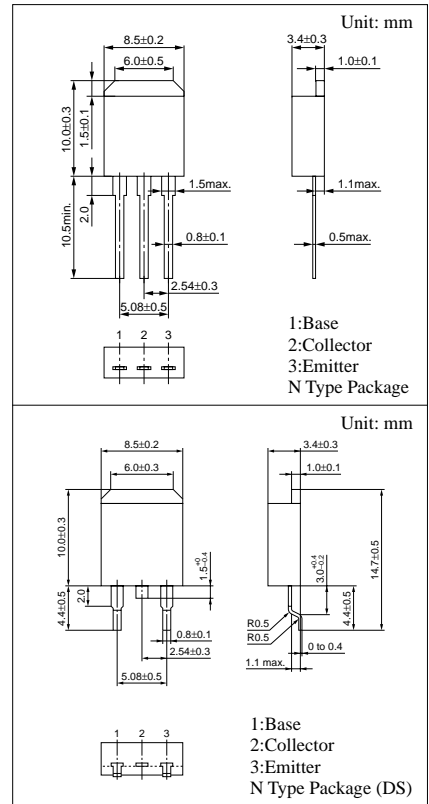
Complementary to 2SD1260 and 2SD1260A

Features

- High forward current transfer ratio h_{FE}
- High-speed switching
- N type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

Absolute Maximum Ratings ($T_C=25^\circ C$)

Parameter	Symbol	Ratings	Unit	
Collector to base voltage	V _{CBO}	-60	V	
2SB937A		-80		
Collector to emitter voltage	V _{CEO}	-60	V	
2SB937A		-80		
Emitter to base voltage	V _{EBO}	-5	V	
Peak collector current	I _{CP}	-4	A	
Collector current	I _C	-2	A	
Collector power dissipation	P _C	T _C =25°C	35	W
		T _a =25°C	1.3	
Junction temperature	T _j	150	°C	
Storage temperature	T _{stg}	-55 to +150	°C	



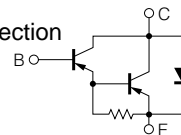
Electrical Characteristics ($T_C=25^\circ C$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I _{CBO}	V _{CB} = -60V, I _E = 0			-1	mA
		V _{CB} = -80V, I _E = 0			-1	
Collector cutoff current	I _{CEO}	V _{CE} = -30V, I _B = 0			-2	mA
		V _{CE} = -40V, I _B = 0			-2	
Emitter cutoff current	I _{EBO}	V _{EB} = -5V, I _C = 0			-2	mA
Collector to emitter voltage	V _{CEO}	I _C = -30mA, I _B = 0	-60			V
			-80			
Forward current transfer ratio	h _{FE1}	V _{CE} = -4V, I _C = -1A	1000			
	h _{FE2} *	V _{CE} = -4V, I _C = -2A	2000		10000	
Base to emitter voltage	V _{BE}	V _{CE} = -4V, I _C = -2A			-2.8	V
Collector to emitter saturation voltage	V _{CE(sat)}	I _C = -2A, I _B = -8mA			-2.5	V
Transition frequency	f _T	V _{CE} = -10V, I _C = -0.5A, f = 1MHz		20		MHz
Turn-on time	t _{on}	I _C = -2A, I _{B1} = -8mA, I _{B2} = 8mA		0.4		μs
Storage time	t _{stg}			1.5		μs
Fall time	t _f				0.5	

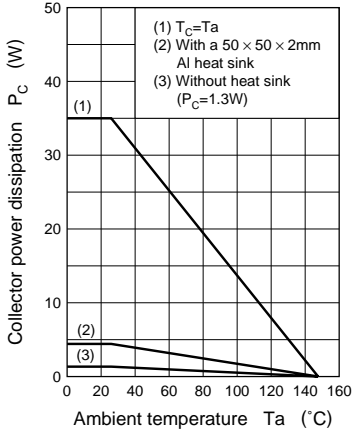
*h_{FE2} Rank classification

Rank	Q	P
h _{FE2}	2000 to 5000	4000 to 10000

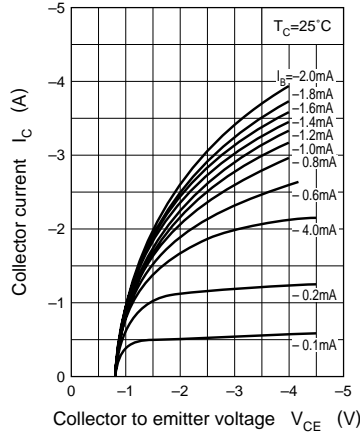
Internal Connection



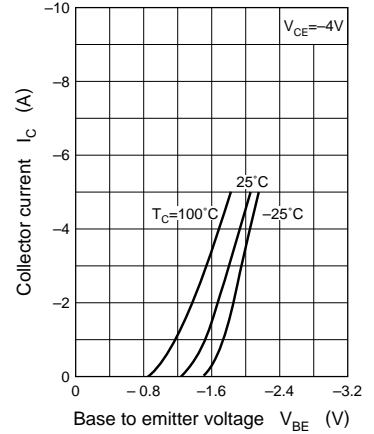
$P_C - T_a$



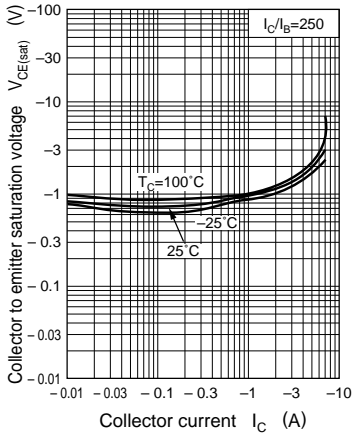
$I_C - V_{CE}$



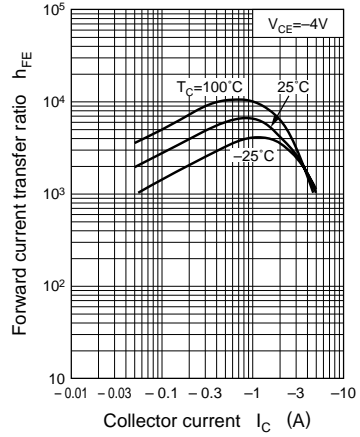
$I_C - V_{BE}$



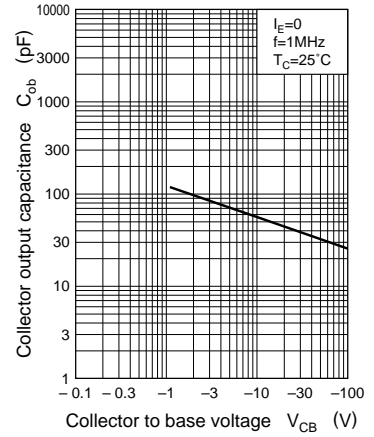
$V_{CE(sat)} - I_C$



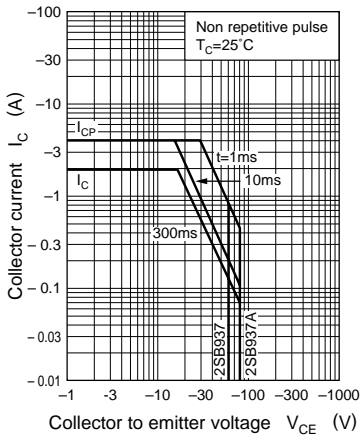
$h_{FE} - I_C$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)



$R_{th(t)} - t$

