

2SD1259, 2SD1259A

Silicon NPN triple diffusion planar type

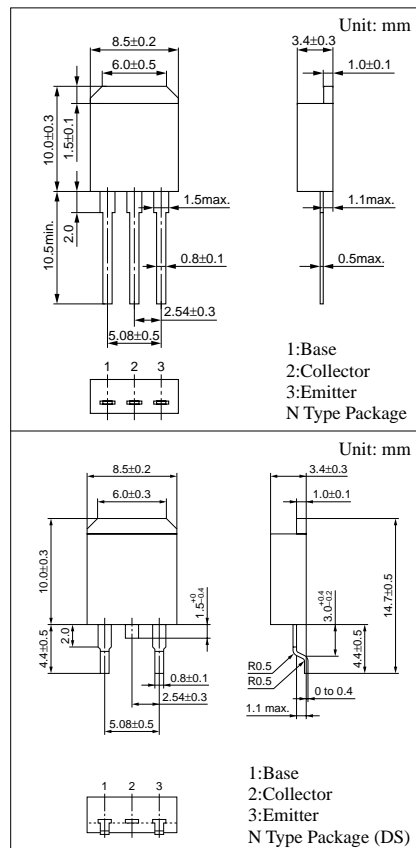
For power amplification with high forward current transfer ratio

Features

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

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

Parameter	Symbol	Rated	Unit
Collector to base voltage	2SD1259	80	V
	2SD1259A	100	
Collector to emitter voltage	2SD1259	60	V
	2SD1259A	80	
Emitter to base voltage	V_{EBO}	6	V
Peak collector current	I_{CP}	6	A
Collector current	I_C	3	A
Base current	I_B	1	A
Collector power dissipation	$T_C=25^\circ\text{C}$	40	W
	$T_a=25^\circ\text{C}$	1.3	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



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

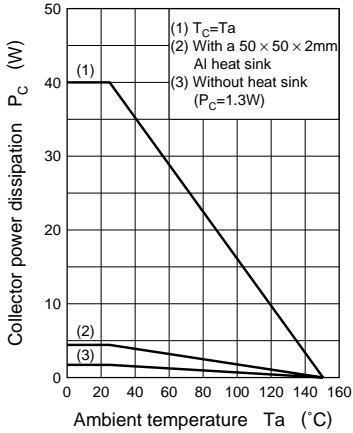
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	2SD1259	$V_{CE} = 80\text{V}, I_E = 0$			100	μA
	2SD1259A					
Collector cutoff current	I_{CEO}	$V_{CE} = 40\text{V}, I_B = 0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{CB} = 6\text{V}, I_C = 0$			100	μA
Collector to emitter voltage	2SD1259	$I_C = 25\text{mA}, I_B = 0$	60			V
	2SD1259A		80			
Forward current transfer ratio	h_{FE}^*	$V_{CE} = 4\text{V}, I_C = 0.5\text{A}$	500		2500	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 2\text{A}, I_B = 0.05\text{A}$			1	V
Transition frequency	f_T	$V_{CE} = 12\text{V}, I_C = 0.2\text{A}, f = 10\text{MHz}$		50		MHz

* h_{FE} Rank classification

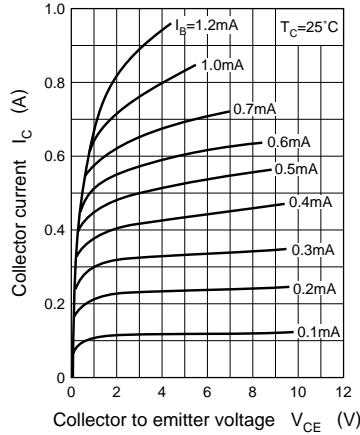
Rank	Q	P	O
h_{FE}	500 to 1000	800 to 1500	1200 to 2500

Note: Ordering can be made by the common rank (PQ rank $h_{FE} = 500$ to 1500) in the rank classification.

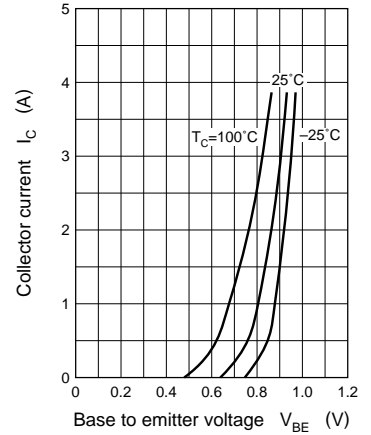
$P_C - T_a$



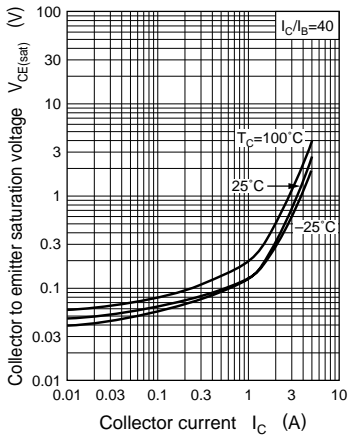
$I_C - V_{CE}$



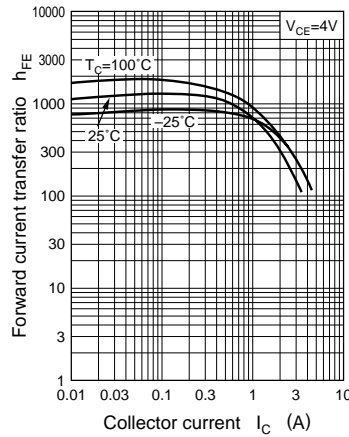
$I_C - V_{BE}$



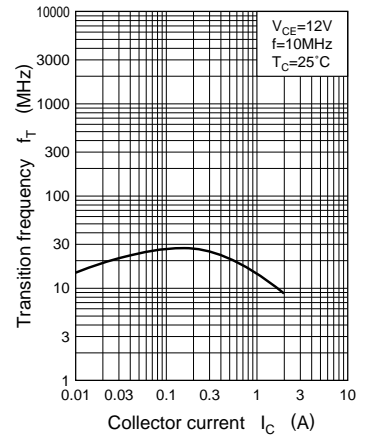
$V_{CE(sat)} - I_C$



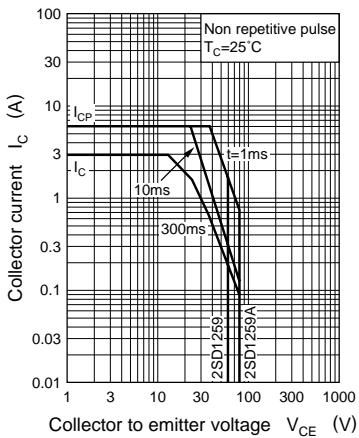
$h_{FE} - I_C$



$f_T - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$

