

2SD1259, 2SD1259A

Silicon NPN triple diffusion planar type

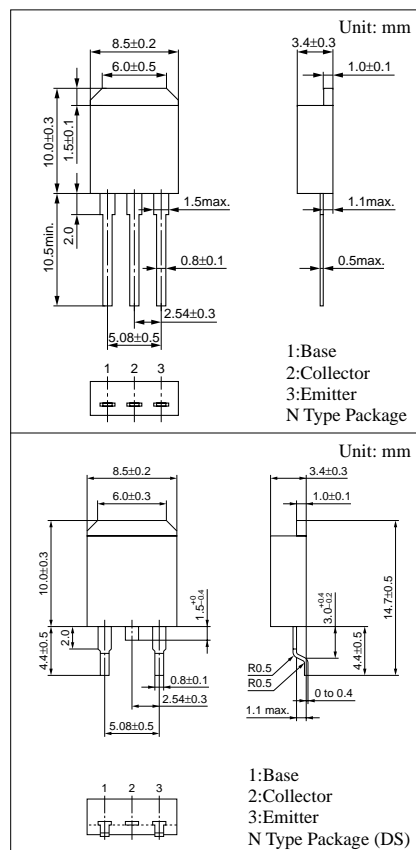
For power amplification with high forward current transfer ratio

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	Ratings	Unit
Collector to base voltage	2SD1259	V_{CBO}	80	V
	2SD1259A		100	
Collector to emitter voltage	2SD1259	V_{CEO}	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	$T_C=25^{\circ}\text{C}$	P_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	$^{\circ}\text{C}$



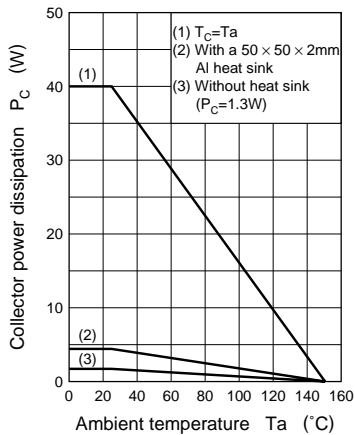
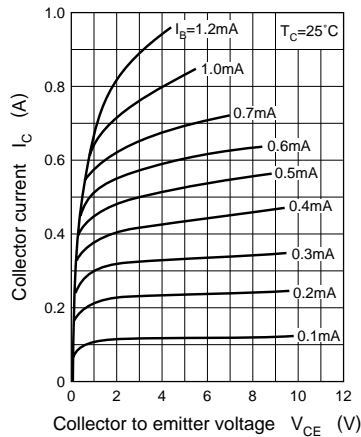
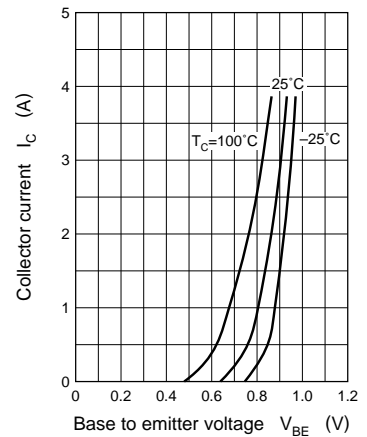
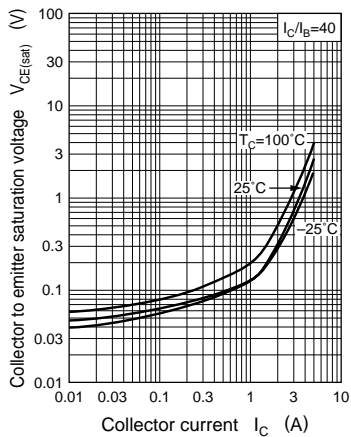
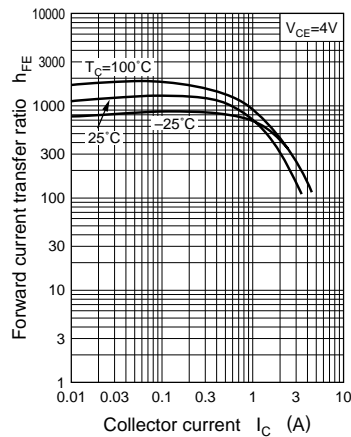
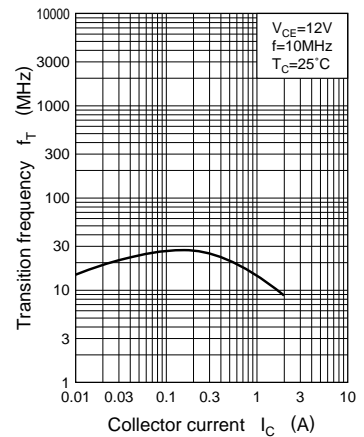
Electrical Characteristics ($T_C=25^\circ\text{C}$)

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

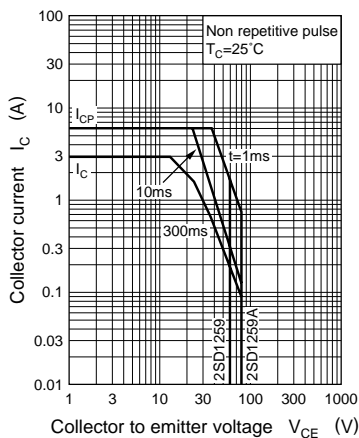
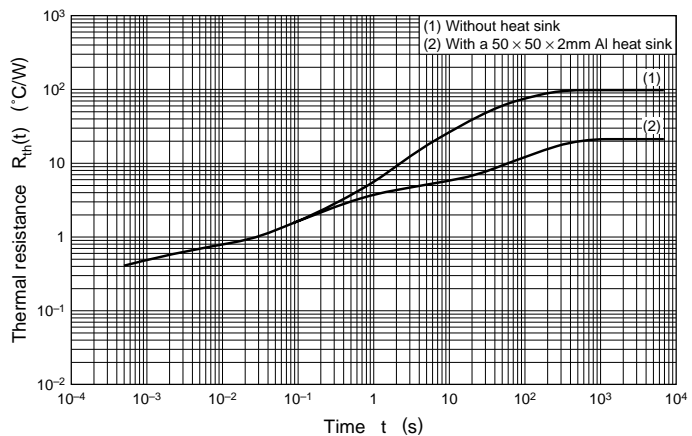
* h_{FE} Rank classification

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)

 $R_{th(t)} - t$ 

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