

# 2SD1251, 2SD1251A

Silicon NPN triple diffusion junction type

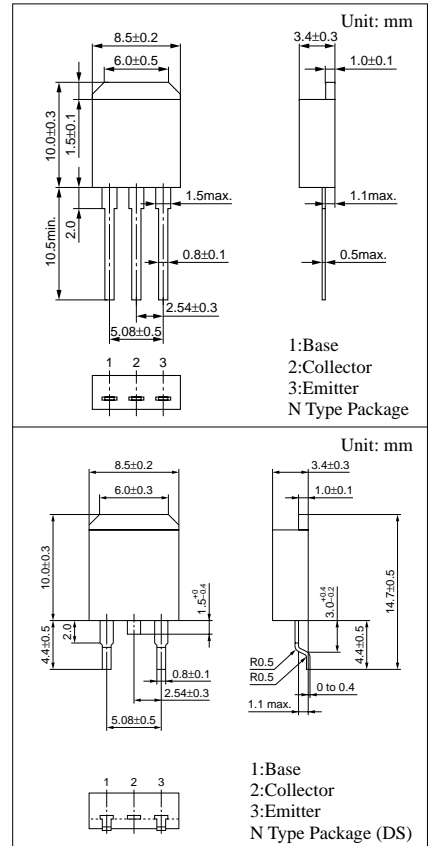
For power amplification

### Features

- Wide area of safe operation (ASO)
- N type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

### Absolute Maximum Ratings (T<sub>C</sub>=25°C)

Parameter	Symbol	Rated	Unit
Collector to base voltage	V <sub>CB0</sub>	60	V
Collector to emitter voltage	V <sub>CEO</sub>	60	V
Emitter to base voltage	V <sub>EBO</sub>	8	V
Peak collector current	I <sub>CP</sub>	6	A
Collector current	I <sub>C</sub>	4	A
Base current	I <sub>B</sub>	1	A
Collector power dissipation	P <sub>C</sub>	30	W
		1.3	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C



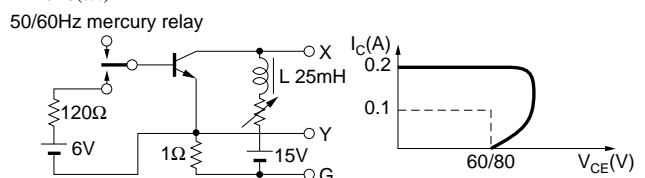
### Electrical Characteristics (T<sub>C</sub>=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I <sub>CB0</sub>	V <sub>CB</sub> = 20V, I <sub>E</sub> = 0			30	μA
Emitter cutoff current	I <sub>EBO</sub>	V <sub>EB</sub> = 8V, I <sub>C</sub> = 0			1	mA
Collector to emitter voltage	V <sub>CEO(sus)</sub> <sup>*2</sup>	I <sub>C</sub> = 0.2A, L = 25mH	60			V
			80			
Forward current transfer ratio	h <sub>FE1</sub>	V <sub>CE</sub> = 3V, I <sub>C</sub> = 0.1A	40			
	h <sub>FE2</sub> <sup>*1</sup>	V <sub>CE</sub> = 3V, I <sub>C</sub> = 1A	30		160	
Base to emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = 3V, I <sub>C</sub> = 1A			1.2	V
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 2A, I <sub>B</sub> = 0.4A			1	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.2A, f = 0.5MHz		1		MHz

<sup>\*1</sup>h<sub>FE2</sub> Rank classification

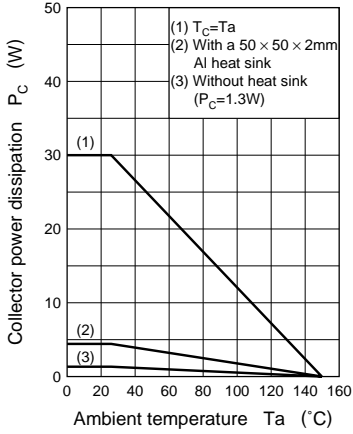
Rank	Q	P	O
h <sub>FE2</sub>	30 to 60	50 to 100	80 to 160

<sup>\*2</sup>V<sub>CEO(sus)</sub> Test circuit

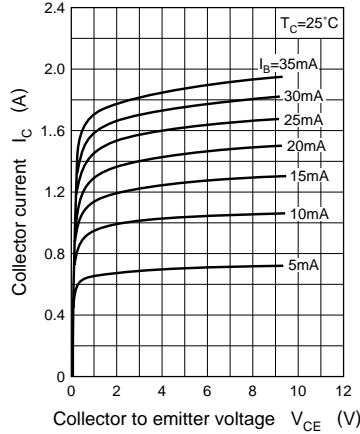


Note: Ordering can be made by the common rank (OP rank h<sub>FE2</sub> = 50 to 160) in the rank classification.

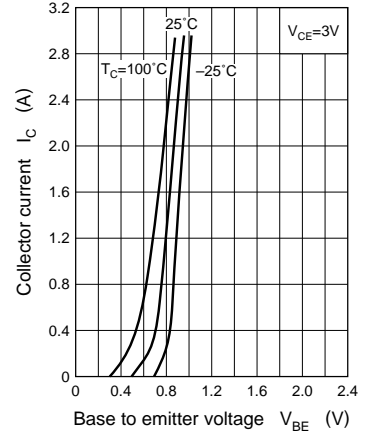
$P_C - T_a$



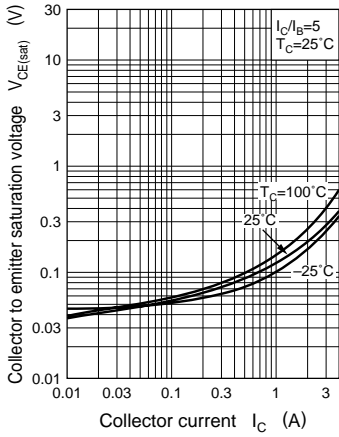
$I_C - V_{CE}$



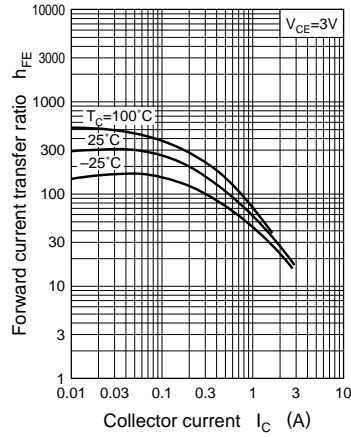
$I_C - V_{BE}$



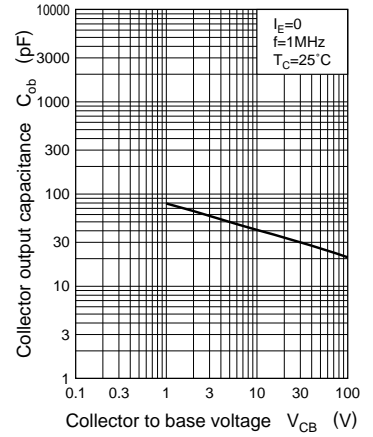
$V_{CE(sat)} - I_C$



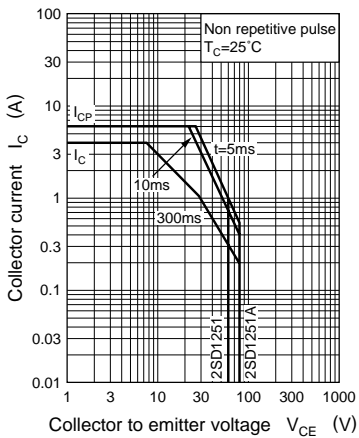
$h_{FE} - I_C$



$C_{ob} - V_{CB}$



Area of safe operation (ASO)



$R_{th(t)} - t$

