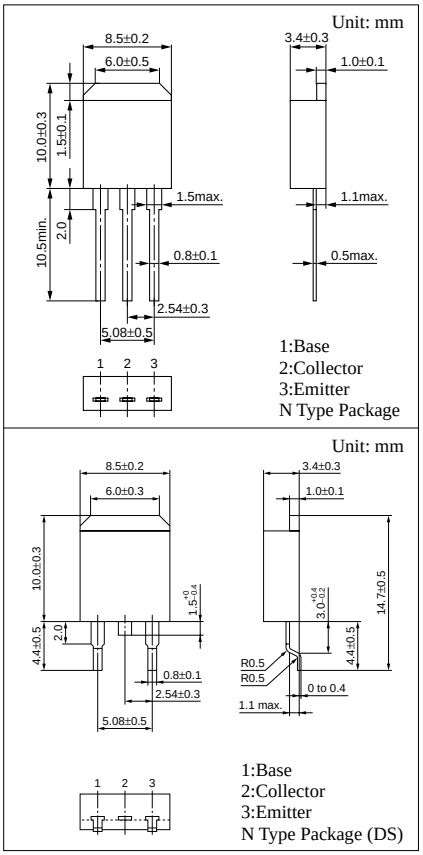
2SD1251, 2SD1251A

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_C=25˚C)

Parameter		Symbol	Ratings	Unit
Collector to base voltage	2SD1251	V_{CBO}	60	V
	2SD1251A		80	
Collector to emitter voltage	2SD1251	V_{CEO}	60	V
	2SD1251A		80	
Emitter to base voltage		V_{EBO}	8	V
Peak collector current		I_{CP}	6	A
Collector current		I_C	4	A
Base current		I_B	1	A
Collector power dissipation	T_C=25°C	P_C	30	W
	Ta=25°C		1.3	
Junction temperature		T_j	150	˚C
Storage temperature		T_{stg}	–55 to +150	˚C

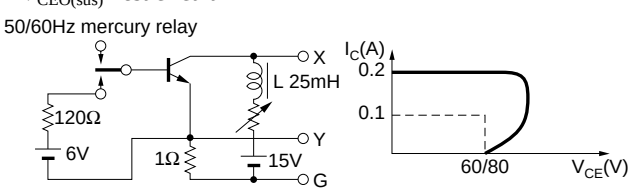
Electrical Characteristics (T_C=25˚C)

Parameter		Symbol	Conditions	min	typ	max	Unit
Collector cutoff current		I_{CBO}	V_{CB} = 20V, I_E = 0			30	μA
Emitter cutoff current		I_{EBO}	V_{EB} = 8V, I_C = 0			1	mA
Collector to emitter voltage	2SD1251	$V_{CEO(sus)}$ *2	I_C = 0.2A, L = 25mH	60			V
	2SD1251A			80			
Forward current transfer ratio		h_{FE1}	V_{CE} = 3V, I_C = 0.1A	40			
		h_{FE2} *1	V_{CE} = 3V, I_C = 1A	30		160	
Base to emitter voltage		V_{BE}	V_{CE} = 3V, I_C = 1A			1.2	V
Collector to emitter saturation voltage		$V_{CE(sat)}$	I_C = 2A, I_B = 0.4A			1	V
Transition frequency		f_T	V_{CE} = 10V, I_C = 0.2A, f = 0.5MHz		1		MHz

*1 h_{FE2} Rank classification

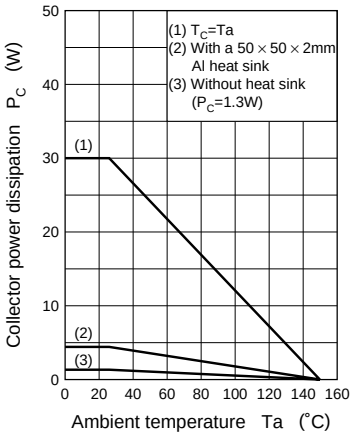
Rank	Q	P	O
h_{FE2}	30 to 60	50 to 100	80 to 160

*2 $V_{CEO(sus)}$ Test circuit

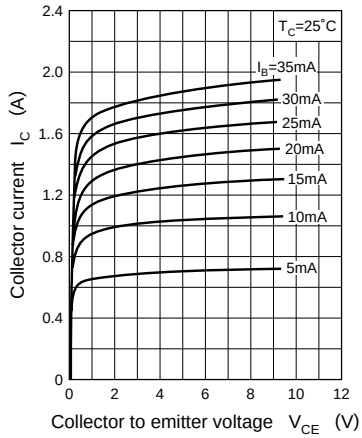


Note: Ordering can be made by the common rank (OP rank h_{FE2} = 50 to 160) in the rank classification.

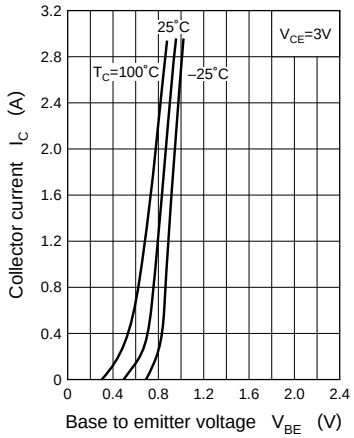
P_C — Ta



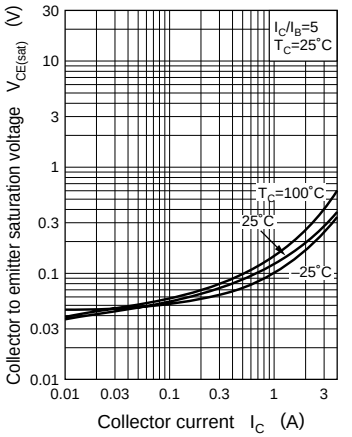
I_C — V_{CE}



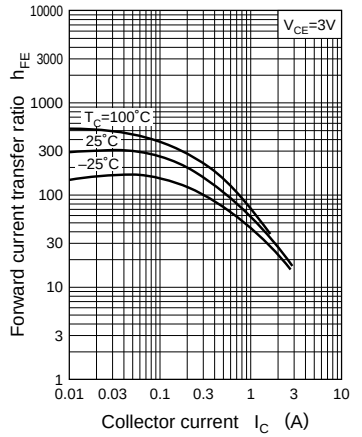
I_C — V_{BE}



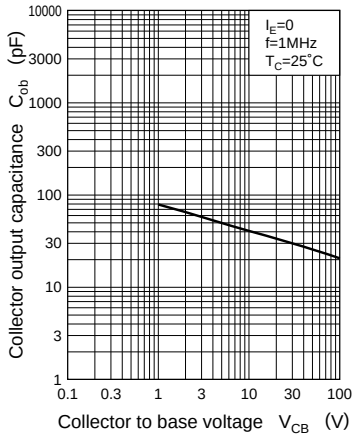
$V_{CE(sat)}$ — I_C



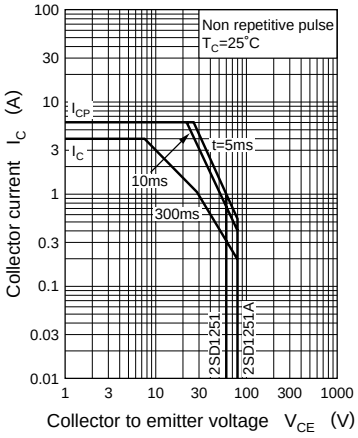
h_{FE} — I_C



C_{ob} — V_{CB}



Area of safe operation (ASO)



$R_{th(t)}$ — t