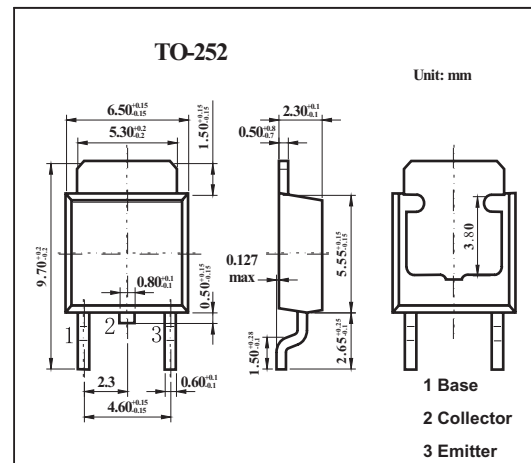


Silicon NPN Epitaxial Planar Type

2SD1257,2SD1257A

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$.
- Satisfactory linearity of forward current transfer ratio hFE.
- Large collector current I_C .

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	2SD1257	130	V
	2SD1257A	150	V
Collector-emitter voltage	2SD1257	80	V
	2SD1257A	100	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	7	A
Peak collector current	I_{CP}	15	A
Collector power dissipation $T_a = 25^\circ\text{C}$	P_C	1.3	W
		40	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

2SD1257,2SD1257A

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-emitter voltage	2SD1257	$I_C = 10 \text{ mA}, I_B = 0$	80			V
	2SD1257A		100			V
Collector-base cutoff current	I_{CBO}	$V_{CB} = 100 \text{ V}, I_E = 0$			10	μA
Emitter-base cutoff current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$			50	μA
Forward current transfer ratio	h_{FE}	$V_{CE} = 2 \text{ V}, I_C = 3 \text{ A}$	90		260	
Forward current transfer ratio		$V_{CE} = 2 \text{ V}, I_C = 0.1 \text{ A}$	45			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 5 \text{ A}, I_B = 0.25 \text{ A}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 5 \text{ A}, I_B = 0.25 \text{ A}$			1.5	V
Transition frequency	f_T	$V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ A}, f = 10 \text{ MHz}$		30		MHz
Turn-on time	t_{on}	$I_C = 3 \text{ A}$		0.5		μs
Storage time	t_{stg}	$I_{B1} = -I_{B2} = 0.3 \text{ A}$		1.5		μs
Fall time	t_f	$V_{CC} = 50 \text{ V}$		0.1		μs

■ hFE Classification

Rank	Q	P
hFE	90~180	130~260