

# UN7231

## Silicon NPN epitaxial planer transistor

For amplification of the low frequency

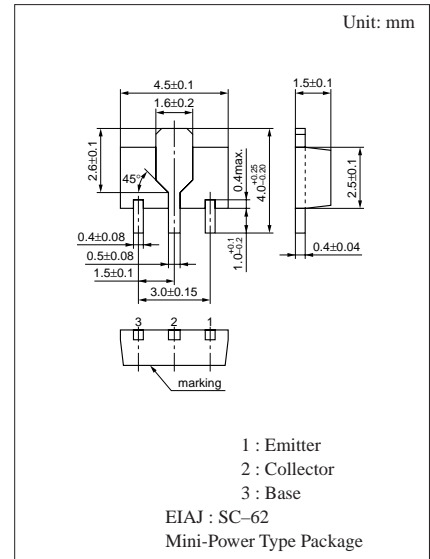
### Features

- High forward current transfer ratio  $h_{FE}$ .
- Costs can be reduced through downsizing of the equipment and reduction of the number of parts.

### Absolute Maximum Ratings (Ta=25°C)

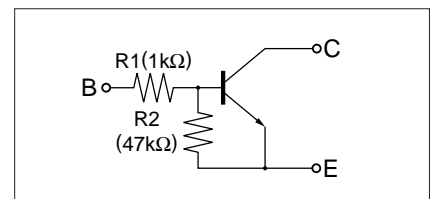
Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	20	V
Collector to emitter voltage	$V_{CEO}$	20	V
Collector current	$I_C$	0.7	A
Peak collector current	$I_{CP}$	1.5	A
Total power dissipation	$P_T^*$	1.0	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

\* Printed circuit board: Copper foil area of 1cm<sup>2</sup> or more and thickness of 1.7mm for the collector portion.



Marking Symbol: IC

Internal Connection

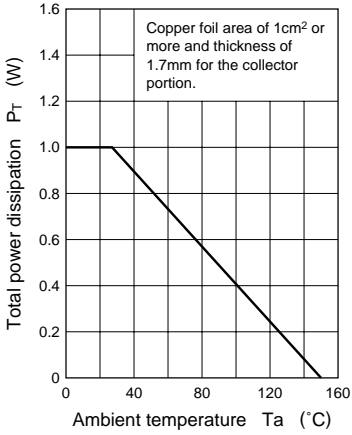


### Electrical Characteristics (Ta=25°C)

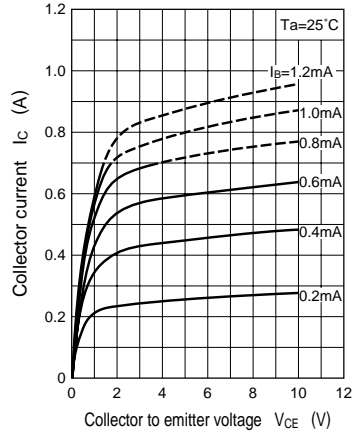
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 15V, I_E = 0$			1	$\mu A$
	$I_{CEO}$	$V_{CE} = 15V, I_B = 0$			10	$\mu A$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 14V, I_C = 0$			0.5	mA
Collector to base voltage	$V_{CBO}$	$I_C = 10\mu A, I_E = 0$	20			V
Collector to emitter voltage	$V_{CEO}$	$I_C = 1mA, I_B = 0$	20			V
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 10V, I_C = 150mA^*$	800		2100	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 5mA^*$			0.4	V
Transition frequency	$f_T$	$V_{CB} = 20V, I_E = -20mA, f = 200MHz$		55		MHz
Input resistance	$R_1$		0.7	1	1.3	k $\Omega$
Resistance ratio	$R_1/R_2$		0.016	0.021	0.025	

\*Pulse measurement

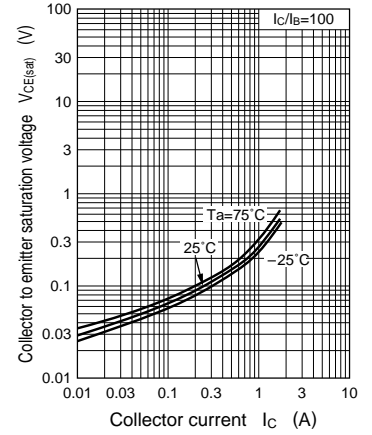
$P_T - T_a$



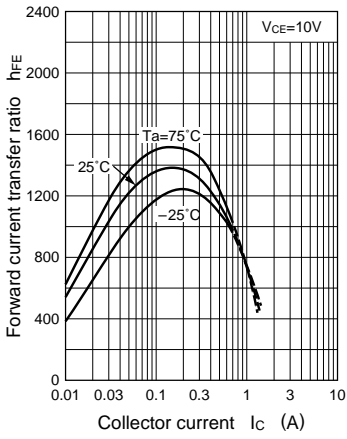
$I_C - V_{CE}$



$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$C_{ob} - V_{CB}$

