

Transistors

For Audio Amplifier output - TV Velocity Modulation ($-160V$, $-1.5A$)

2SA2005

●Structure

PNP Silicon Epitaxial Planar Transistor

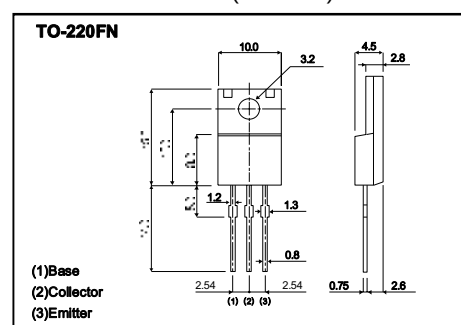
●Features

- 1) Electrical characteristics of DC current gain h_{FE} is flat.
- 2) High breakdown voltage. ($V_{CE0} = -160V(\text{Min.})$), at $I_C = -1mA$)
- 3) High fr. (Typ. 150MHz, at $V_{CE} = -10V$, $I_E = 0.2A$, $f = 100MHz$)
- 4) Wide SOA.

●Applications

- Power amplifier
- Velocity modulation

■External dimensions (Unit : mm)



●Complements

PNP	NPN
2SA2005	2SC5511

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	-160	V
Collector-emitter voltage		V_{CEO}	-160	V
Emitter-base voltage		V_{EBO}	-5	V
Collector current	DC	I_C	-1.5	A
	Pulse	I_{CP}	-3	A ^{*1}
Collector power dissipation		P_C	2	W($T_a=25^{\circ}C$)
			20	W($T_c=25^{\circ}C$)
Junction temperature		T_j	150	$^{\circ}C$
Storage temperature		T_{stg}	-55 to +150	$^{\circ}C$

*1 $t=100\text{ms}$

●Packaging specifications and h_{FE}

Type	hFE	Package	Taping
		Code	—
		Basic ordering unit (pieces)	500
2SC5511E			Q

h_{FE} values are classified as follows:

Item	E
h_{FE}	100 to 200

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CEO}	-160	—	—	V	$I_C = -1\text{mA}$
Collector-base breakdown voltage	BV_{CBO}	-160	—	—	V	$I_C = -50\mu\text{A}$
Emitter-base breakdown voltage	BV_{EBO}	-5	—	—	V	$I_E = -50\mu\text{A}$
Collector cutoff current	I_{CBO}	—	—	-1.0	μA	$V_{CB} = -160\text{V}$
Emitter cutoff current	I_{EBO}	—	—	-1.0	μA	$V_{EB} = -4\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	-1.0	V	$I_C/I_B = -1\text{A}/-0.1\text{A}$
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5V		$I_C/I_B = -1\text{A}/-0.1\text{A}$
DC current gain	h_{FE}	100	—	200	—	$V_{CE} = -5\text{V}$, $I_C = -0.1\text{A}$
Transition frequency	f_T	—	150	—	MHz	$V_{CE} = -10\text{V}$, $I_E = 0.2\text{A}$, $f = 100\text{MHz}$
Collector output capacitance	C_{ob}	—	35	—	pFV	$C_B = -10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$

Appendix

Notes

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