

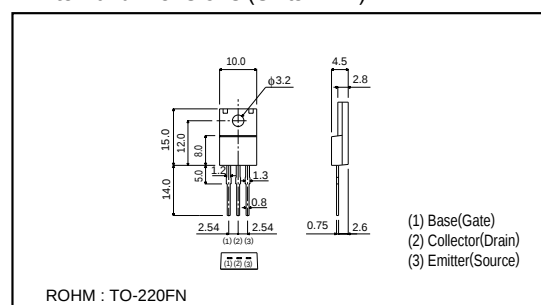
High-speed Switching Transistor (−60V, −12A)

2SA2007

●Features

- 1) High switching speed.
(Typ. $t_f = 0.15\mu\text{s}$ at $I_C = -6\text{A}$)
- 2) Low saturation voltage.
(Typ. $V_{CE(sat)} = -0.2\text{V}$ at $I_C / I_B = -6\text{A} / -0.3\text{A}$)
- 3) Wide SOA. (safe operating area)
- 4) Complements the 2SC5526.

●External dimensions (Units : mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−100	V
Collector-emitter voltage	V_{CEO}	−60	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−12	A
		−20	A(Pulse)
Collector power dissipation	P_C	2	W
		25	W(Tc=25°C)
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 ~ +150	°C

●Packaging specifications and hFE

Type	2SA2007
Package	TO-220FN
hFE	F
Code	—
Basic ordering unit (pieces)	500

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−100	—	—	V	$I_C = -50\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CEO}	−60	—	—	V	$I_C = -1\text{mA}$
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	$I_E = -50\mu\text{A}$
Collector cutoff current	I_{CBO}	—	—	−10	μA	$V_{CB} = -100\text{V}$
Emitter cutoff current	I_{EBO}	—	—	−10	μA	$V_{EB} = -5\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−0.3	V	$I_C/I_B = -6\text{A}/-0.3\text{A}$
		—	—	−0.5	V	$I_C/I_B = -8\text{A}/-0.4\text{A}$
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.2	V	$I_C/I_B = -6\text{A}/-0.3\text{A}$
		—	—	−1.5	V	$I_C/I_B = -8\text{A}/-0.4\text{A}$
DC current transfer ratio	h_{FE}	160	—	320	—	$V_{CE} = -2\text{V}$, $I_C = -2\text{A}$
Transition frequency	f_T	—	80	—	MHz	$V_{CE} = -10\text{V}$, $I_E = 1\text{A}$, $f = 30\text{MHz}$
Output capacitance	C_{ob}	—	250	—	pF	$V_{CB} = -10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$
Turn-on time	t_{on}	—	—	0.3	μs	$I_C = -6\text{A}$, $R_L = 5\Omega$
Storage time	t_{stg}	—	—	1.5	μs	$I_{B1} = -I_{B2} = -0.3\text{A}$
Fall time	t_f	—	—	0.3	μs	$V_{CC} = -30\text{V}$

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