



THE DATASHEET OF 2SA2007E



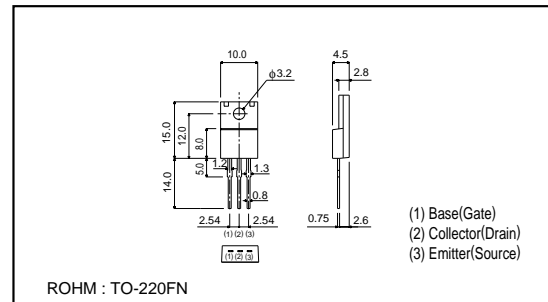
High-speed Switching Transistor (–60V, –12A)

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($T_c = 25^\circ\text{C}$)
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 - +150	$^\circ\text{C}$

●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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