

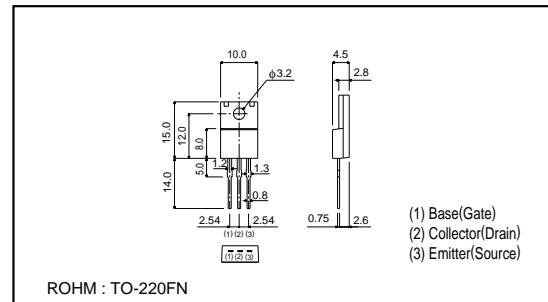
# High-speed Switching Transistor (–60V, –12A)

## 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	$\mu\text{A}$	$V_{CB} = -100\text{V}$
Emitter cutoff current	$I_{EBO}$	-	-	-10	$\mu\text{A}$	$V_{EB} = -5\text{V}$
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	$\mu\text{s}$	$I_c = -6\text{A}$ , $R_L = 5\Omega$
Storage time	$t_{stg}$	-	-	1.5	$\mu\text{s}$	$I_{B1} = -I_{B2} = -0.3\text{A}$
Fall time	$t_f$	-	-	0.3	$\mu\text{s}$	$V_{CC} = -30\text{V}$