

2SD2607

- 1) Darlington connection for high DC current gain.
- 2) Built-in resistor between base and emitter.
- 3) Built-in damper diode.
- 4) Complements the 2SB1668.

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	100	V
Collector-emitter voltage	V_{CE0}	100	V
Emitter-base voltage	V_{EB0}	7	V
Collector current	I_C	8	A (DC)
		10	A (Pulse) *
Power dissipation	P_C	2	W
		30	W ($T_C = 25^\circ\text{C}$)
Junction temperature	T_J	150	$^\circ\text{C}$
Storage temperature	T_{Stg}	$-55 \sim +150$	$^\circ\text{C}$

The drawing shows the mechanical specifications of the TO-220FN package. The top view includes dimensions for the base (10.0 mm), collector/drain (12.0 mm), and emitter/source (14.0 mm) regions, along with a central hole diameter of $\phi 3.2$ mm. The side view shows the package height (4.5 mm) and the distance from the base to the collector/drain (2.8 mm). The bottom view shows the mounting tab dimensions (2.54 mm) and the distance between them (2.54 mm). The package is labeled with the ROHM logo and the part number TO-220FN.

ROHM : TO-220FN

- (1) Base(Gate)
- (2) Collector(Drain)
- (3) Emitter(Source)

Type	2SD2607
Package	TO-220FN
h _{FE}	1k~20k
Code	-
Basic ordering unit (pieces)	500

Figure 10-10 is a schematic diagram of a common-emitter amplifier circuit. The circuit includes a base resistor R_1 (5k Ω), a collector resistor R_2 (300k Ω), and a load resistor (10k Ω). The input signal is applied to the base through a coupling capacitor, and the output is taken from the collector through another coupling capacitor. The emitter is connected to ground. The circuit is powered by a 10V supply.

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	100	-	-	V	$I_C = 50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	100	-	-	V	$I_C = 5mA$
Collector cutoff current	I_{CBO}	-	-	10	μA	$V_{CB} = 100V$
Emitter cutoff current	I_{EBO}	-	-	3	mA	$V_{EB} = 5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	1.5	V	$I_C/I_B = 3A/6mA$
DC current transfer ratio	h_{FE}	1000	-	20000	-	$V_{CE}/I_C = 3V/2A$
Transition frequency	f_T	-	40	-	MHz	$V_{CE} = 5V, I_E = -0.2A, f = 10MHz$
Output capacitance	C_{ob}	-	50	-	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

*2 Transition frequency of the device.