

2SD661, 2SD661A

Silicon NPN epitaxial planer type

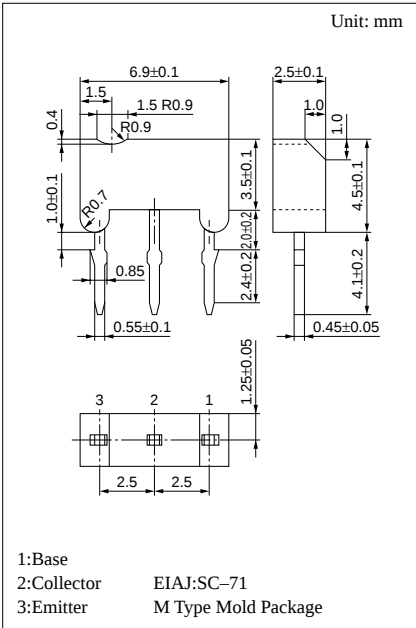
For low-frequency and low-noise amplification

Features

- Low noise voltage NV.
- High foward current transfer ratio h_{FE} .
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	35	V
2SD661A		55	
Collector to emitter voltage	V_{CEO}	35	V
2SD661A		55	
Emitter to base voltage	V_{EBO}	7	V
Peak collector current	I_{CP}	200	mA
Collector current	I_C	100	mA
Collector power dissipation	P_C	400	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

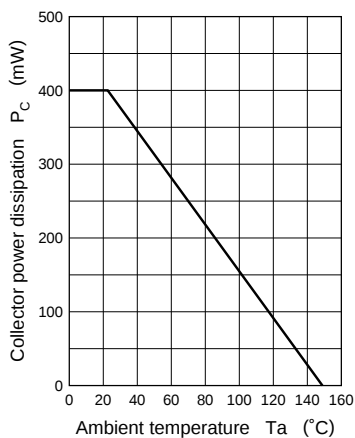
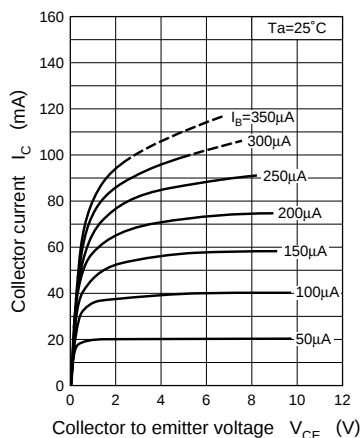
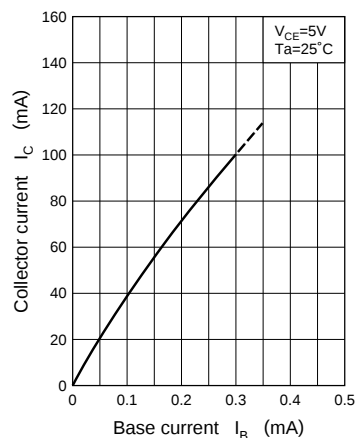
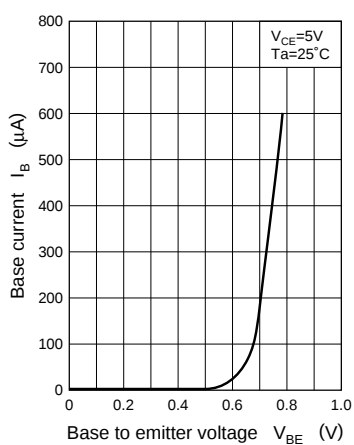
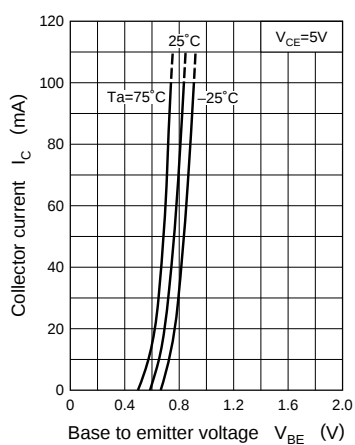
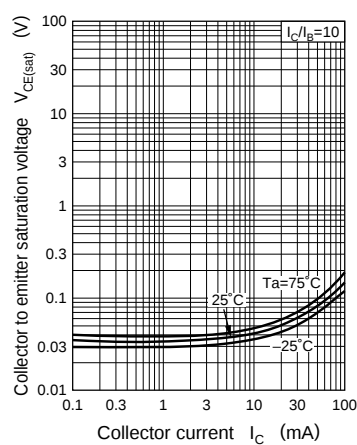
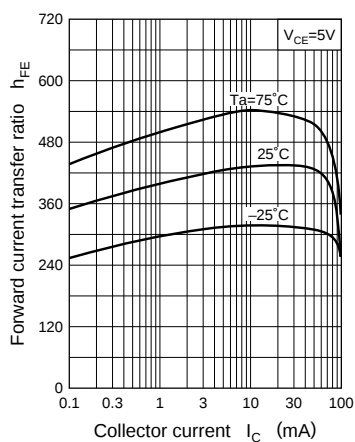
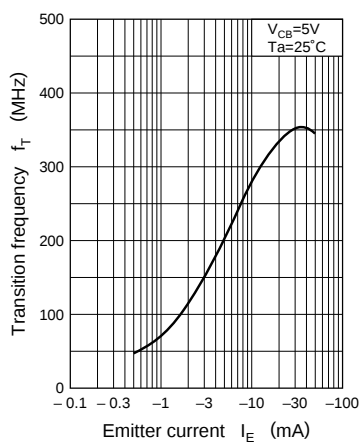
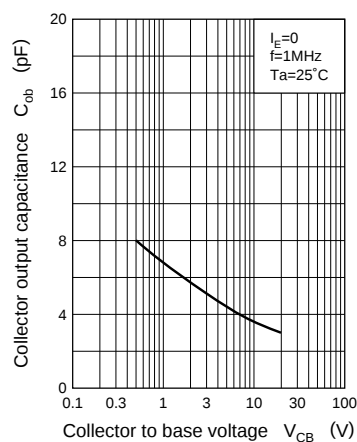


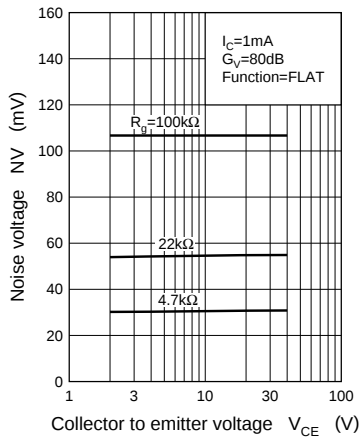
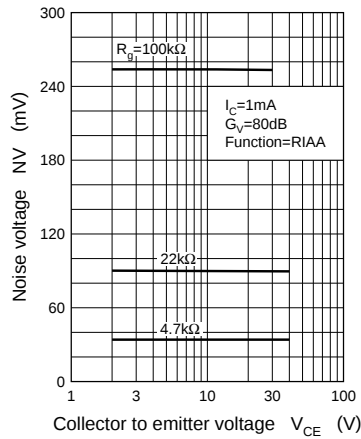
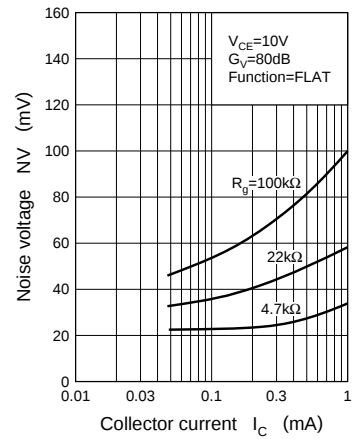
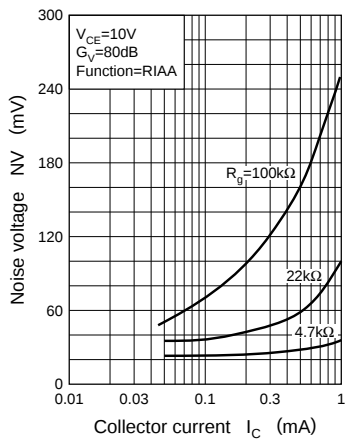
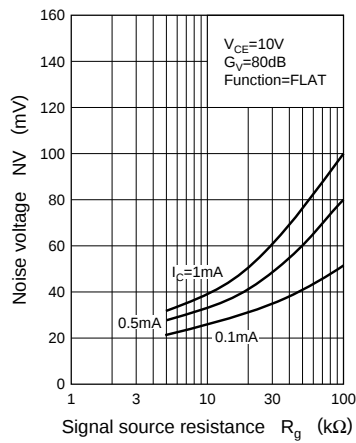
Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 20V, I_E = 0$			0.1	μA
	I_{CEO}	$V_{CE} = 20V, I_B = 0$			1	μA
Collector to base voltage	V_{CBO}	$I_C = 10\mu A, I_E = 0$	35			V
			55			
Collector to emitter voltage	V_{CEO}	$I_C = 2mA, I_B = 0$	35			V
			55			
Emitter to base voltage	V_{EBO}	$I_E = 10\mu A, I_C = 0$	7			V
Forward current transfer ratio	h_{FE}^*	$V_{CE} = 10V, I_C = 2mA$	210		650	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100mA, I_B = 10mA$			1	V
Transition frequency	f_T	$V_{CB} = 10V, I_E = -2mA, f = 200MHz$		200		MHz
Noise voltage	NV	$V_{CE} = 10V, I_C = 1mA, G_V = 80dB$ $R_g = 100k\Omega, \text{Function} = \text{FLAT}$			150	mV

* h_{FE} Rank classification

Rank	R	S	T
h_{FE}	210 ~ 340	290 ~ 460	360 ~ 650

$P_C - T_a$  $I_C - V_{CE}$  $I_C - I_B$  $I_B - V_{BE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $C_{ob} - V_{CB}$ 

NV — V_{CE} NV — V_{CE} NV — I_C NV — I_C NV — R_g NV — R_g 