

NPN Transistors

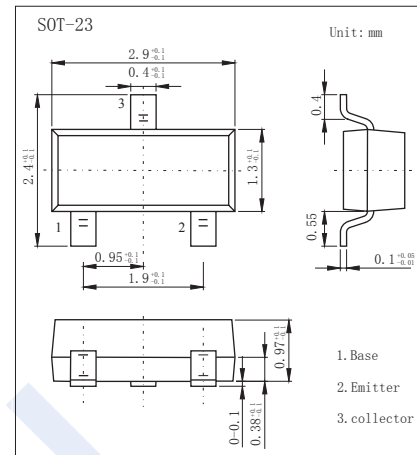
2SD601A

■ Features

- High h_{FE}
- Low $V_{CE(sat)}$
- For general amplification
- Complimentary to 2SB709A

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	60	V
Collector - Emitter Voltage	V_{CEO}	50	
Emitter - Base Voltage	V_{EBO}	7	
Collector Current - Continuous	I_C	100	mA
Collector Power Dissipation	P_C	200	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	



■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = 100 \mu\text{A}, I_E = 0$	60			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = 2 \text{ mA}, I_B = 0$	50			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu\text{A}, I_C = 0$	7			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 50 \text{ V}, I_E = 0$			0.1	μA
Collector-emitter cut-off current	I_{CEO}	$V_{CE} = 30 \text{ V}, I_B = 0$			100	
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100 \text{ mA}, I_B = 10 \text{ mA}$			0.3	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 100 \text{ mA}, I_B = 10 \text{ mA}$			1.2	
DC current gain	$h_{FE(1)}$	$V_{CE} = 2 \text{ V}, I_C = 100 \text{ mA}$	90			
	$h_{FE(2)}$	$V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$	160		460	
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		3.5		pF
Transition frequency	f_T	$V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}, f = 200 \text{ MHz}$		150		MHz

■ Classification of $h_{FE(2)}$

Type	2SD601A-Q	2SD601A-R	2SD601A-S
Range	160-260	210-340	290-460
Marking	ZQ	ZR	ZS