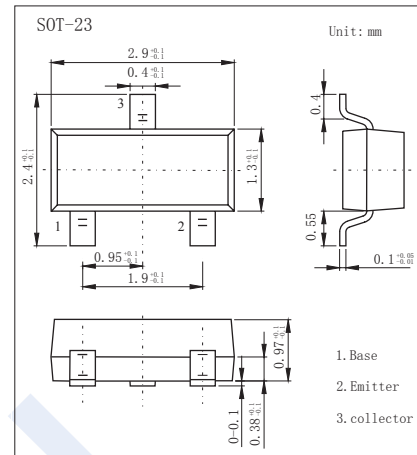


## NPN Transistors

## 2SD602A

## ■ Features

- Low Collector to Emitter Saturation Voltage
- Mini Type Package
- Complimentary to 2SB710A

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	60	V
Collector - Emitter Voltage	$V_{CE0}$	50	
Emitter - Base Voltage	$V_{EB0}$	5	
Collector Current - Continuous	$I_C$	500	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	$V_{CB0}$	$I_C = 100 \mu\text{A}, I_E = 0$	60			V
Collector-emitter breakdown voltage	$V_{CE0}$	$I_C = 10 \text{mA}, I_B = 0$	50			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 100 \mu\text{A}, I_C = 0$	5			
Collector-base cut-off current	$I_{CB0}$	$V_{CB} = 50 \text{V}, I_E = 0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EB0}$	$V_{EB} = 5 \text{V}, I_C = 0$			0.1	
Collector-emitter saturation voltage (Note.1)	$V_{CE(sat)}$	$I_C = 300 \text{mA}, I_B = 30 \text{mA}$			0.6	V
Base - emitter saturation voltage (Note.1)	$V_{BE(sat)}$	$I_C = 300 \text{mA}, I_B = 30 \text{mA}$			1.2	
DC current gain (Note.1)	$h_{FE(1)}$	$V_{CE} = 10 \text{V}, I_C = 150 \text{mA}$	85		340	
	$h_{FE(2)}$	$V_{CE} = 10 \text{V}, I_C = 500 \text{mA}$	40			
Collector output capacitance	$C_{ob}$	$V_{CB} = 10 \text{V}, I_E = 0, f = 1 \text{MHz}$			15	pF
Transition frequency	$f_T$	$V_{CE} = 10 \text{V}, I_C = 50 \text{mA}, f = 200 \text{MHz}$		200		MHz

Note.1: Pulse test : Pulse width  $\leq 350 \mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

■ Classification of  $h_{FE(1)}$ 

Type	2SD602A-Q	2SD602A-R	2SD602A-S
Range	85-170	120-240	170-340
Marking	XQ	XR	XS