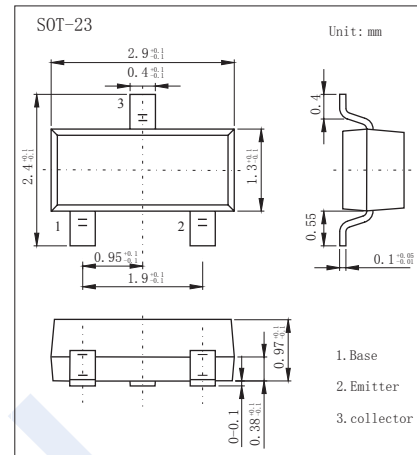


NPN Transistors

2SD602A-HF

■ Features

- Low Collector to Emitter Saturation Voltage
- Mini Type Package
- Complimentary to 2SB710A-HF
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish

■ 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_{CBO}	$V_{CB} = 50 \text{ V}, I_E = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 \text{ V}, I_C = 0$			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-HF	2SD602A-R-HF	2SD602A-S-HF
Range	85-170	120-240	170-340
Marking	XQ _F	XR _F	XS _F