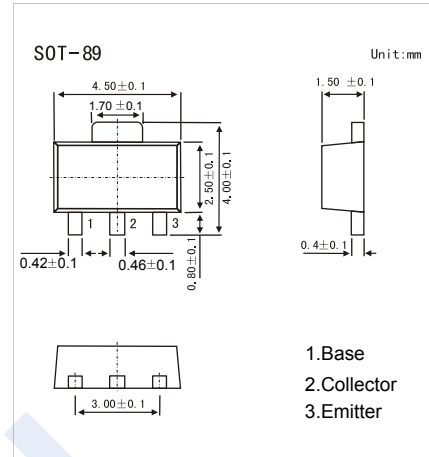
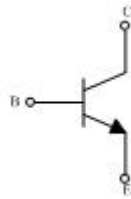


NPN Transistors

3DD13002-HF

■ Features

- Collector Current Capability $I_C=1A$
- Collector Emitter Voltage $V_{CEO}=400V$
- Power Switching Applications
- Pb-Free Package May be Available.
The G-Suffix Denotes a Pb-Free Lead Finish

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	600	V
Collector - Emitter Voltage	V_{CE0}	400	
Emitter - Base Voltage	V_{EB0}	6	
Collector Current - Continuous	I_C	1	A
Collector Power Dissipation	P_C	0.5	W
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CB0}	$I_C = 100 \mu A, I_E = 0$	600			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = 1 mA, I_B = 0$	400			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu A, I_C = 0$	6			
Collector-base cut-off current	I_{CB0}	$V_{CB} = 600 V, I_E = 0$			100	μA
Collector- emitter cut-off current	I_{CE0}	$V_{CE} = 400 V, I_E = 0$			100	
Emitter cut-off current	I_{EB0}	$V_{EB} = 7 V, I_C = 0$			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 200 mA, I_B = 40 mA$			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 200 mA, I_B = 40 mA$			1.1	
DC current gain	$h_{FE(1)}$	$V_{CE} = 10 V, I_C = 200 mA$	10		40	
	$h_{FE(2)}$	$V_{CE} = 10 V, I_C = 0.25 mA$	5			
Fall time	t_f	$I_C = 1 A, I_{B1} = -I_{B2} = 0.2 A$			0.5	μS
Storage time	t_s	$V_{CC} = 100 V$			2.5	
Transition frequency	f_T	$V_{CE} = 10 V, I_C = 100 mA, f = 1 MHz$	5			MHz

■ Classification of $h_{FE(1)}$

Type	3DD13002A-HF	3DD13002B-HF	3DD13002C-HF	3DD13002D-HF	3DD13002E-HF	3DD13002F-HF
Range	10-15	15-20	20-25	25-30	35-35	35-40
Type	13002A _F	13002B _F	13002C _F	13002D _F	13002E _F	13002F _F

NPN Transistors

3DD13002-HF

■ Typical Characteristics

