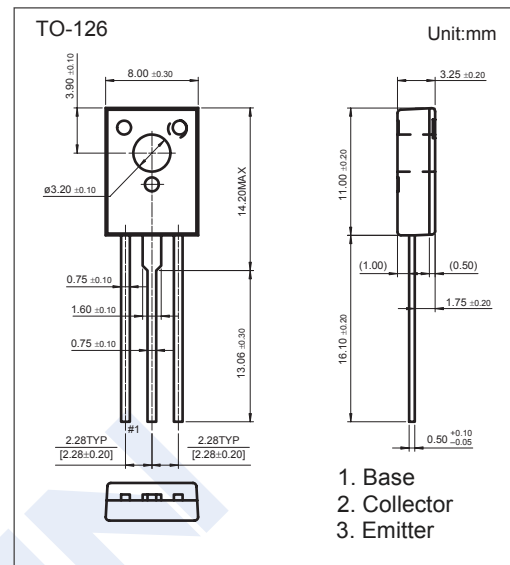


## NPN Transistors

## NJM13003-1.63

### ■ Features

- High voltage capability
- High speed switching
- Wide SOA
- ROHS compliant



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	600	V
Collector - Emitter Voltage	$V_{CE0}$	400	
Emitter - Base Voltage	$V_{EB0}$	9	
Collector Current - Continuous	$I_C$	1.5	A
Collector Power Dissipation	$P_C$	30	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 to 150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_C = 1\text{mA}, I_E = 0$	600			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_C = 10\text{mA}, I_B = 0$	400			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 1\text{mA}, I_C = 0$	9			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = 600\text{V}, I_E = 0$			100	$\mu\text{A}$
Collector- emitter cut-off current	$I_{CEO}$	$V_{CE} = 400\text{V}, I_E = 0$			250	
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 8\text{V}, I_C = 0$			10	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 0.5\text{A}, I_B = 0.1\text{A}$			0.35	V
		$I_C = 1.5\text{A}, I_B = 0.5\text{A}$			0.85	
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 0.5\text{A}, I_B = 0.1\text{A}$			1.2	
DC current gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	7			
		$V_{CE} = 10\text{V}, I_C = 0.1\text{A}$	10		40	
		$V_{CE} = 5\text{V}, I_C = 1.5\text{A}$	5			
Storage Time	$t_s$	$V_{CC} = 5\text{V}, I_C = 0.25\text{A}$	1.5		3	$\mu\text{s}$
Falling Time	$t_f$				0.8	