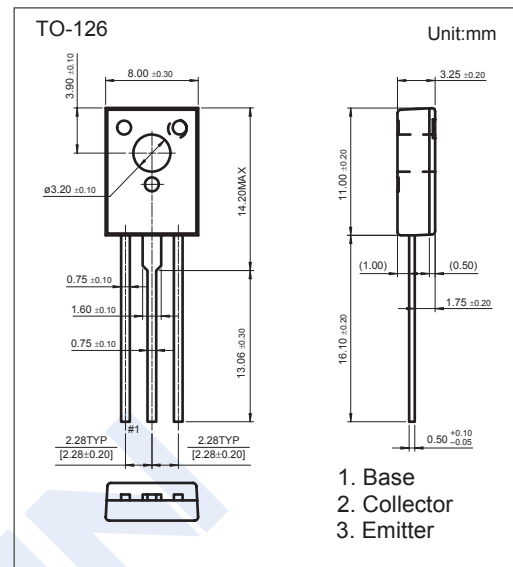


NPN Transistors

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_{CBO}	600	V
Collector - Emitter Voltage	V_{CEO}	400	
Emitter - Base Voltage	V_{EBO}	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_{CBO}	$I_C = 1\text{mA}, I_E = 0$	600			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = 10\text{mA}, I_B = 0$	400			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 1\text{mA}, I_C = 0$	9			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 600\text{V}, I_E = 0$			100	μA
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	μs
Falling Time	t_f				0.8	