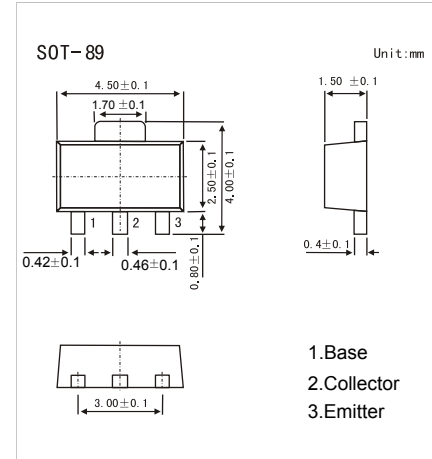


**NPN Transistors**

**2SD1119**

■ Features

- Collector Current Capability  $I_c=3$  A
- Collector Emitter Voltage  $V_{CE0}=25$  V



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	40	V
Collector - Emitter Voltage	$V_{CE0}$	25	
Emitter - Base Voltage	$V_{EB0}$	7	
Collector Current - Continuous	$I_c$	3	A
Collector Power Dissipation	$P_c$	500	mW
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	$V_{CB0}$	$I_c = 100 \mu\text{A}, I_E = 0$	40			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_c = 1 \text{ mA}, I_B = 0$	25			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = 100 \mu\text{A}, I_c = 0$	7			
Collector-base cut-off current	$I_{CB0}$	$V_{CB} = 40 \text{ V}, I_E = 0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EB0}$	$V_{EB} = 7 \text{ V}, I_c = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c = 3 \text{ A}, I_B = 100 \text{ mA}$			1	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c = 3 \text{ A}, I_B = 100 \text{ mA}$			1.2	
DC current gain	$h_{FE}$	$V_{CE} = 2 \text{ V}, I_c = 500 \text{ mA}$	230		600	
		$V_{CE} = 2 \text{ V}, I_c = 2 \text{ A}$	150			
Collector output capacitance	$C_{ob}$	$V_{CB} = 20 \text{ V}, I_E = 0, f = 1 \text{ MHz}$			50	pF
Transition frequency	$f_T$	$V_{CE} = 6 \text{ V}, I_c = 50 \text{ mA}, f = 200 \text{ MHz}$		150		MHz

■ Classification of  $h_{fe}(1)$

Type	2SD1119-Q	2SD1119-R
Range	230-380	340-600
Marking	TQ	TR