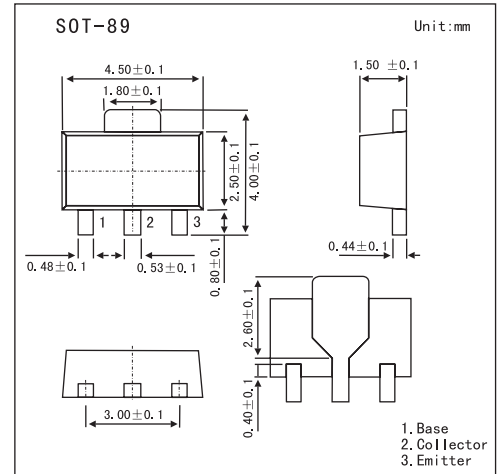


NPN Silicon Transistors

2SC4942



Features

- New package with dimensions in between those of small signal and power signal package
- High voltage
- Fast switching speed

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

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CB0}	600	V
Collector to emitter voltage	V_{CE0}	600	V
Emitter to base voltage	V_{EB0}	7	V
Collector current (DC)	$I_{D(DC)}$	1	A
Collector current (pulse)	$I_{D(pulse)}$ *1	2	A
Total power dissipation	P_T *2	2	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to 150	$^\circ\text{C}$

*1 $PW \leq 10$ ms, duty cycle ≤ 50 %

*2 $7.5\text{ cm}^2 \times 0.7$ mm ceramic board mounted

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 600\text{ V}, I_E = 0$			10	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 7.0\text{ V}, I_C = 0$			10	μA
DC current gain	h_{FE}	$V_{CE} = 5.0\text{ V}, I_C = 0.1\text{ A}$	30	55	120	
		$V_{CE} = 5.0\text{ V}, I_C = 0.5\text{ A}$	5	10		
Collector saturation voltage	$V_{CE(sat)}$	$I_C = 400\text{ mV}, I_B = 80\text{ mA}$		0.35	1.0	V
Base saturation voltage	$V_{BE(sat)}$	$I_C = 400\text{ mV}, I_B = 80\text{ mA}$		0.9	1.2	V
Gain bandwidth product	f_T	$V_{CE} = 5.0\text{ V}, I_E = 750\text{ mA}$		30		MHz
Output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$		15		pF
Turn-on time	t_{ON}	$I_C = 0.5\text{ A}, V_{CC} = 250\text{ V}$		0.1	0.5	μs
Storage time	t_{stg}	$I_{B1} = ? I_{B2} = 0.1\text{ A}$		4.0	5.0	μs
Fall time	t_f	$R_L = 500\Omega$		0.2	0.5	μs

hFE Classification

Marking	AA1	AA2	AA3
hFE	30 to 60	40 to 80	60 to 120