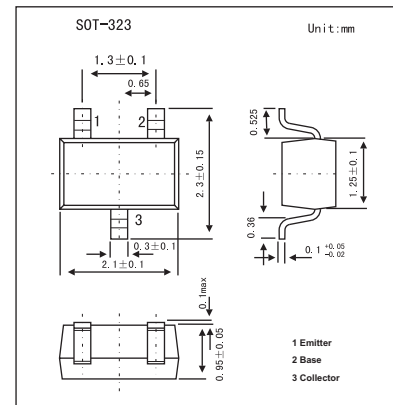


## Silicon NPN Epitaxial

## 2SC4116

## ■ Features

- High voltage and high current:  $V_{CE0} = 50\text{ V}$ ,  $I_C = 150\text{ mA}$  (max).
- Excellent hFE linearity:  $h_{FE}(I_C = 0.1\text{ mA})/h_{FE}(I_C = 2\text{ mA}) = 0.95$  (typ).
- High hFE:  $h_{FE} = 70\sim 700$ .
- Low noise:  $NF = 1\text{ dB}$  (typ.),  $10\text{ dB}$  (max).
- Small package.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	60	V
Collector-emitter voltage	$V_{CE0}$	50	V
Emitter-base voltage	$V_{EB0}$	5	V
Collector current	$I_C$	150	mA
Base current	$I_B$	30	mA
Collector power dissipation	$P_C$	100	mW
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +125	$^\circ\text{C}$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cut-off current	$I_{CBO}$	$V_{CB} = 60\text{ V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5\text{ V}$ , $I_C = 0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE} = 6\text{ V}$ , $I_C = 2\text{ mA}$	70		700	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100\text{ mA}$ , $I_B = 10\text{ mA}$		0.1	0.25	V
Transition frequency	$f_T$	$V_{CE} = 10\text{ V}$ , $I_C = 1\text{ mA}$	80			MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10\text{ V}$ , $I_E = 0$ , $f = 1\text{ MHz}$		2.0	3.5	pF
Collector-emitter on resistance	NF	$V_{CE} = 6\text{ V}$ , $I_C = 0.1\text{ mA}$ , $f = 1\text{ kHz}$ , $R_g = 10\text{ k}\Omega$		1.0	10	dB

## ■ hFE Classification

Marking	LO	LY	LG	LL
hFE	70~140	120~240	200~400	350~700