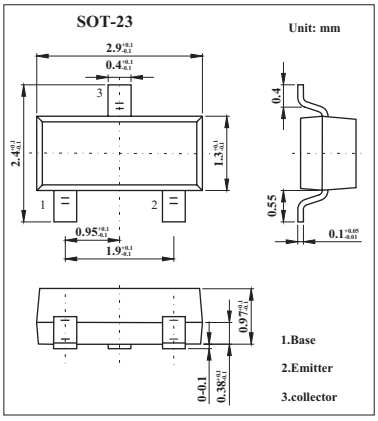
Silicon NPN Triple Diffused Type

2SC3138



Features

- High voltage. V_{CBO} = 200 V (max)
  V_{CEO} = 200 V (max)
- Small flat package.

Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	200	V
Collector-emitter voltage	V_{CEO}	200	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	50	mA
Base current	I_B	20	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	125	℃
Storage temperature	T_{stg}	-55 to +125	℃

Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 200 V, I_E = 0			0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 5 V, I_C = 0			0.1	μA
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = 0.1 mA, I_E = 0	200			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 1 mA, I_B = 0	200			V
DC current gain	h_{FE}	V_{CE} = 3 V, I_C = 10 mA	70		240	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = 10 mA, I_B = 1 mA		0.1	0.5	V
Base-emitter saturation voltage	$V_{BE\ (sat)}$	I_C = 10 mA, I_B = 1 mA		0.75	1.5	V
Transition frequency	f_T	V_{CE} = 10 V, I_C = 2 mA	50	100		MHz
Collector output capacitance	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		2	4	pF
Turn-on time	ton	pulse width = 5μs,duty cycle≤2%		0.3		μs
Storage time	tstg	I_{B1}=-I_{B2}=0.6 mA		2		μs
Fall time	tf	V_{CC}=50V,I_C=6mA		0.4		μs

h_{FE} Classification

Marking	NO	NY
Rank	O	Y
hFE	70～140	120～240