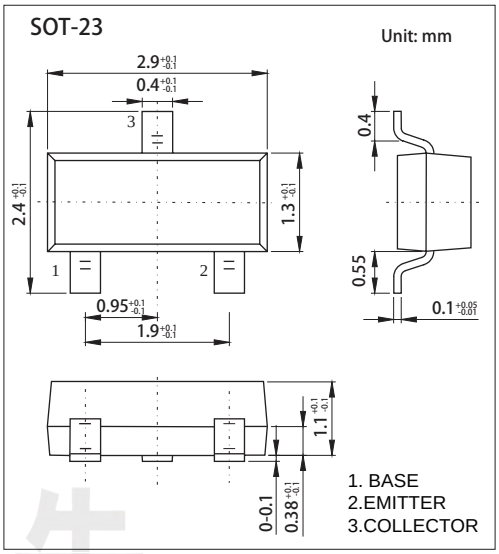
NPN Transistors

2SC3838



■ Features

- High transition frequency.
- Small rbb'·Cc and high gain.
- Small NF.

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	20	V
Collector - Emitter Voltage	V_{CEO}	11	
Emitter - Base Voltage	V_{EBO}	3	
Collector Current - Continuous	I_C	50	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	150	℃
Storage Temperature	T_{stg}	-55 to 150	

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collecto- base breakdown voltage	V_{CBO}	I_C= 10 μA， I_E=0	20			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= 1 mA， I_B=0	11			
Emitter - base breakdown voltage	V_{EBO}	I_E= 10 μA， I_C=0	3			
Collector cut-off current	I_{CBO}	V_{CB}= 10 V , I_E=0			0.5	μA
Emitter cut-off current	I_{EBO}	V_{EB}= 2V , I_C=0			0.5	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10 mA, I_B= 5mA			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	I_C=10 mA, I_B= 5mA			1.2	
DC current gain	h_{FE}	V_{CE}= 10V, I_C= 5mA	56		400	
Noise factor	NF	V_{CE}=6V, I_C=2mA, f=500MHz, R_g=50Ω		3		dB
Collector-base time constant	rbb'·Cc	V_{CB}=10V, I_C=10mA, f=31.8MHz			12	ps
Output capacitance	C_{ob}	V_{CB}=10V, I_E=0A, f=1MHz			1.5	pF
Transition frequency	f_T	V_{CE}= 20V, I_C= 10mA,f=30MHz	50			MHz

■ Classification of hFE

Rank	A	B	C	D
Range	56-110	100-170	120-270	250-400
Marking	AD			