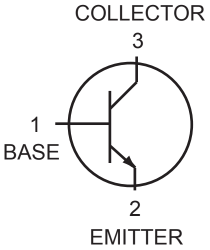
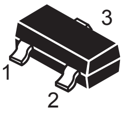
WEITRON

2SC3838

High-Frequency Amplifier Transistor NPN Silicon

Ⓟ Lead(Pb)-Free





SOT-23

MAXIMUM RATINGS (Ta=25ºC)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	11	V
Collector-Base Voltage	V_{CBO}	20	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current-Continuous	I_C	50	mA

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Total Device Dissipation FR-5 Board (1) T_A =25°C	P_D	150	mW
Thermal Resistance, Junction Ambient	$R_{\theta JA}$	625	°C/W
Junction and Storage, Temperature	T_J, Tstg	-55 to +150	°C

Device Marking

2SC3838=AD

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage(I_C =1mA, I_B=0)	$V_{(BR)CEO}$	11	-	V
Collector-Base Breakdown Voltage(I_C =10μA, I_E=0)	$V_{(BR)CBO}$	20	-	V
Emitter-Base Breakdown Voltage(I_E =10μA, I_C =0)	$V_{(BR)EBO}$	3.0	-	V
Collector Cufoff Current(V_{CB} =10V, I_E=0)	I_{CBO}	-	0.5	μA
Emitter Cufoff Current(V_{EB} =2V, I_C=0)	I_{EBO}	-	0.5	μA

1. FR-5=1.0×0.75×0.062 in

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted) (Countinued)

Characteristics	Symbol	Min	TYP	Max	Unit

ON CHARACTERISTICS

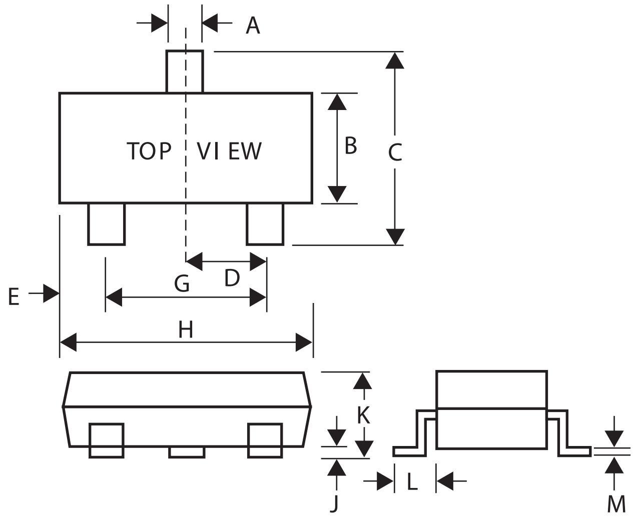
DC Current Gain V_{CE}=10V ,I_C= 5mA	h_{FE}	27	-	270	-
Transition Frequency V_{CE}=10V ,I_C= 10mA, f=500MHz	f_T	1.4	-	-	GHz
Collector-Emitter Saturation Voltage I_C=-10 mA, I_B=5mA	$V_{CE(sat)}$	-	-	0.5	V
Noise Factor V_{CE}=6V, I_C=2mA, f=500MHz	F	-	-	4.0	dB

CLASSIFICATION OF h_{FE}

Rank	N	P
Range	56-120	82-180

SOT-23 Package OutlineDimensions

Unit:mm



Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25