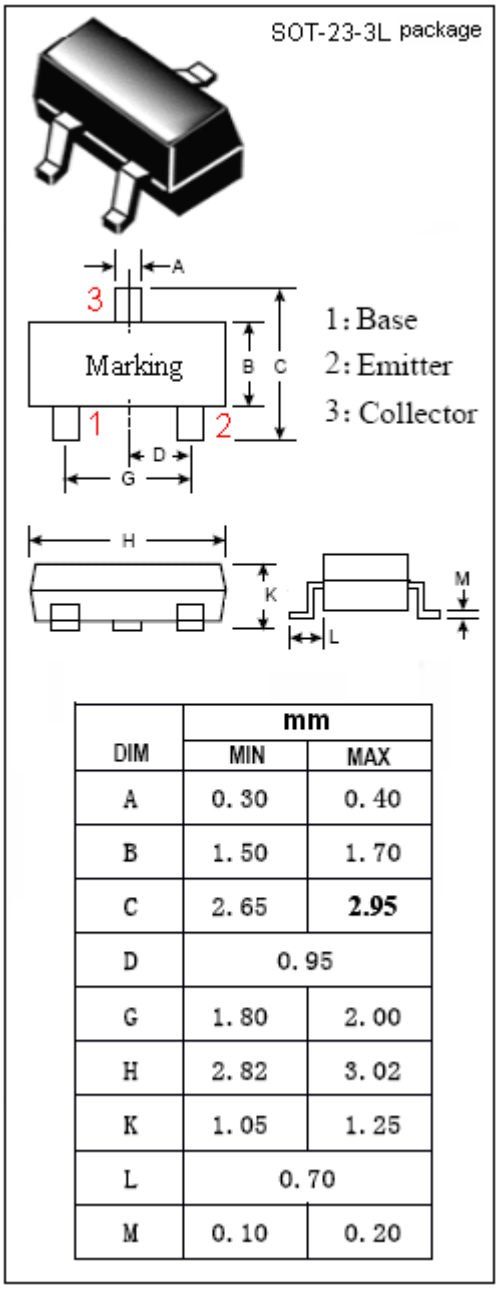
isc Silicon NPN RF Transistor 2SC3838

DESCRIPTION

- Low Noise
  NF = 3.5 dB TYP. @V_{CE} = 6 V, I_C = 2 mA, f = 500 MHz
- High Current-Gain Bandwidth Product
  f_T = 3.2 GHz TYP. @V_{CE} = 10 V, I_C = 10 mA, f = 500 MHz

APPLICATIONS

- Designed for use in low-noise and small signal amplifiers from VHF ~ UHF band.



DIM	mm MIN	mm MAX
A	0.30	0.40
B	1.50	1.70
C	2.65	**2.95**
D	0.95	
G	1.80	2.00
H	2.82	3.02
K	1.05	1.25
L	0.70	
M	0.10	0.20

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	11	V
V_{EBO}	Emitter-Base Voltage	3	V
I_C	Collector Current-Continuous	50	mA
P_C	Collector Power Dissipation @T_C=25℃	0.2	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-55~150	℃

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C= 10μA ; I_E= 0	20			V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 1mA ; R_{BE}= ∞	11			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E= 10μA ; I_C= 0	3			V
I_{CBO}	Collector Cutoff Current	V_{CB}= 10V; I_E= 0			0.5	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 2V; I_C= 0			0.5	μA
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C= 10mA ; I_B= 5mA			0.5	V
h_{FE}	DC Current Gain	I_C= 5mA ; V_{CE}= 10V	56		180	
f_T	Current-Gain—Bandwidth Product	I_C= 10mA; V_{CE}= 10V,f= 500MHz	1.4	3.2		GHz
C_{OB}	Output Capacitance	I_E= 0 ; V_{CB}= 10V;f= 1.0MHz		0.8	1.5	pF
$r_{bb'} \cdot C_C$	Base Time Constant	I_C= 10mA; V_{CB}= 10V;f= 31.8MHz		4	12	ps
NF	Noise Figure	I_C= 2mA ; V_{CE}= 6V;f= 500MHz; Rg= 50Ω		3.5		dB