

Features

Low noise and high gain.

NF = 1.1 dB Typ., $G_a = 11$ dB Typ. @ $V_{CE} = 10$ V, $I_C = 7$ mA, $f = 1.0$ GHz

High power gain.

MAG = 13 dB Typ. @ $V_{CE} = 10$ V, $I_C = 20$ mA, $f = 1.0$ GHz



SOT-23/SOT-23-3L

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

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	20	V
Collector to emitter voltage	V_{CEO}	10	V
Emitter to base voltage	V_{EBO}	3.0	V
Collector current (DC)	I_C	100	mA
Total power dissipation	P_{tot}	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-65 to +150	$^\circ\text{C}$

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

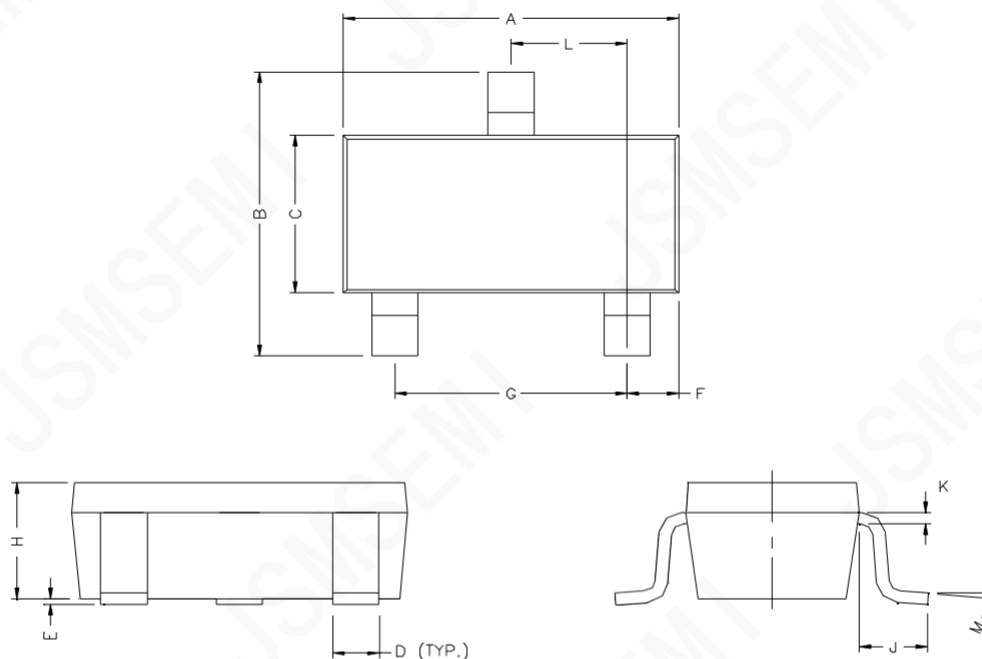
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = 100 \mu\text{A}$, $I_E = 0$	20			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = 1$ mA, $I_B = 0$	12			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu\text{A}$, $I_C = 0$	3			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 10$ V, $I_E = 0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 3$ V, $I_C = 0$			1	
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 50$ mA, $I_B = 5$ mA			0.4	V
Base - emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 50$ mA, $I_B = 5$ mA			1.2	
DC current gain *	h_{FE}	$V_{CE} = 10$ V, $I_C = 20$ mA	50		400	
Insertion power gain	$ S_{21e} ^2$	$V_{CE} = 10$ V, $I_C = 20$ mA, $f = 1$ GHz		11.5		dB
Noise figure	NF	$V_{CE} = 10$ V, $I_C = 7$ mA, $f = 1$ GHz		1.1	2	
Reverse transfer capacitance	C_{re}	$V_{CB} = 10$ V, $I_E = 0$, $f = 1$ MHz		0.55	1	pF
Transition frequency	f_T	$V_{CE} = 10$ V, $I_C = 20$ mA		7		GHz

*. Pulse measurement: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$.

h_{FE} Classification

HFE: 140~250

Package Outline
SOT23-3L

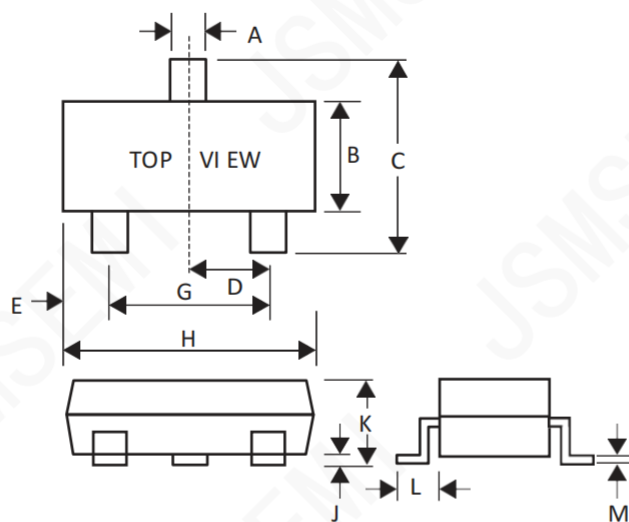


DIMENSIONS (mm are the original dimensions)

UNIT	A	B	C	D	E	F	G	H	K	J	L	M
mm	2.70 3.10	2.65 2.95	1.50 1.70	0.35 0.50	0 0.10	0.45 0.55	1.9	1.00 1.30	0.10 0.20	0.40 -	0.85 1.15	0° 10°

Package Outline

SOT23



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