isc Silicon NPN RF Transistor — BFR93AW

DESCRIPTION

- High Power Gain
- High Current Gain Bandwidth Product
- Low Noise Figure
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

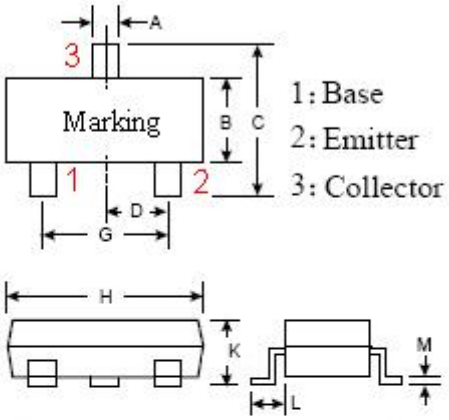
APPLICATIONS

- Designed for use in RF wideband amplifiers and oscillators.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	20	V
V_{CES}	Collector-Emitter Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	12	V
V_{EBO}	Emitter-Base Voltage	2	V
I_C	Collector Current-Continuous	50	mA
I_B	Base Current-Continuous	6	mA
P_C	Collector Power Dissipation @T_C=25℃	0.3	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature Range	-65~150	℃

SOT-323 package



DIM	mm	
	MIN	MAX
A	0.30	0.40
B	1.15	1.35
C	2.00	2.40
D	0.65	
H	1.80	2.20
K	0.80	1.00
M	0.10	0.25

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C= 1mA ; I_B= 0	12			V
I_{CES}	Collector Cutoff Current	V_{CE}= 20V; V_{BE}= 0			100	μA
I_{CBO}	Collector Cutoff Current	V_{CB}= 10V; I_E= 0			100	nA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 2V; I_C= 0			10	μA
h_{FE}	DC Current Gain	I_C= 30mA ; V_{CE}= 8V	50		200	
f_T	Current-Gain—Bandwidth Product	I_C= 30mA ; V_{CE}= 8V; f= 500MHz	4.5	6		GHz
C_{OB}	Output Capacitance	I_E= 0 ; V_{CB}= 10V; f= 1MHz		0.62	0.9	pF
NF	Noise Figure	I_C= 5mA ; V_{CE}= 8V; f= 900MHz		2		dB
NF	Noise Figure	I_C= 5mA ; V_{CE}= 8V; f= 1.8GHz		3.3		dB
PG	Power Gain	I_C= 30mA ; V_{CE}= 8V; f= 900MHz		15		dB
PG	Power Gain	I_C= 30mA ; V_{CE}= 8V; f= 1.8GHz		10		dB
$\lvert S_{21e} \rvert^2$	Insertion Power Gain	I_C= 30mA ; V_{CE}= 8V; f= 900MHz		13		dB
$\lvert S_{21e} \rvert^2$	Insertion Power Gain	I_C= 30mA ; V_{CE}= 8V; f= 1.8GHz		7.5		dB