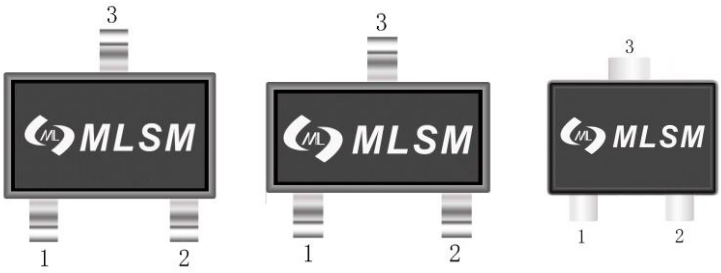
BFR360/360T/360F/360L3

Low Profile Linear NPN Silicon RF Transistor

Features

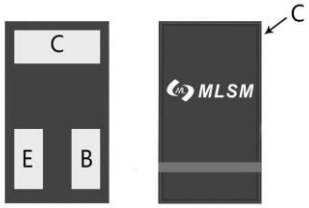
- Low Noise and High Gain
- High Power Gain



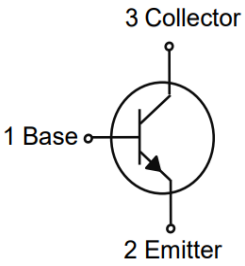
SOT-323 SOT-523 SOT-723

Application

- low noise amplifier at VHF, UHF and CATV band applications



DFN1006-3L



Schematic diagram

Pb-Free RoHS Halogen-Free

Maximum Ratings(Ta=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	15	V
V_{CEO}	Collector-Emitter Voltage	6	V
V_{EBO}	Emitter-Base Voltage	2	V
I_C	Collector Current	35	mA
P_C	Collector Power Dissipation	210	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	595	°C/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-50~+150	°C

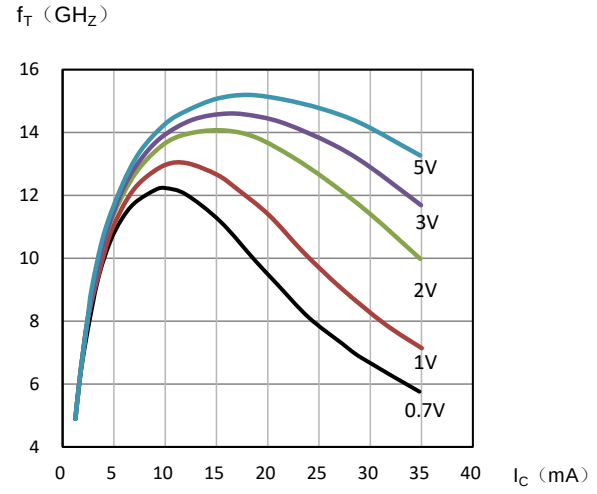
Ordering Information (Example)

Part Number	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
BFR360	SOT-323	FB_S	3,000	45,000	180,000	7"reel
BFR360T	SOT-523	FB_S	3,000	45,000	180,000	7"reel
BFR360F	SOT-723	FB_S	8,000	120,000	480,000	7"reel
BFR360L3	DFN1006-3L	FB	10,000	150,000	600,000	7"reel

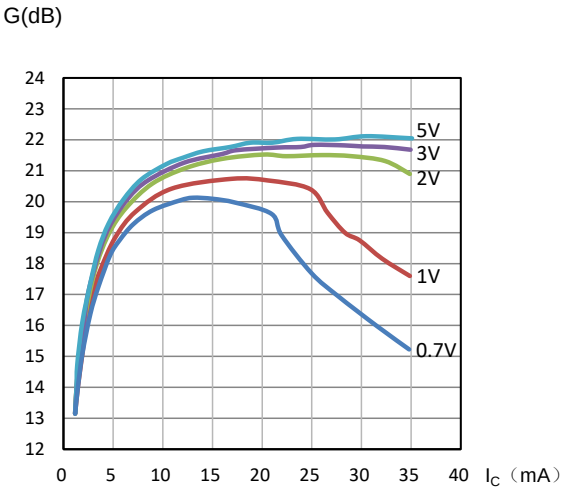
Electrical Characteristics (TJ=25℃ unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=100uA, I_E=0	15	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=1mA, I_B=0	6	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=10μA, I_C=0	2	--	--	V
I_{CBO}	Collector cut-off current	V_{CB}=5 V , I_E=0	--	--	100	nA
I_{EBO}	Emitter cut-off current	V_{EB}= 1V , I_C=0	--	--	1	μA
h_{FE}	DC current gain	V_{CE}=3V, I_C= 15mA	60	--	200	
C_{CB}	Collector Base Capacitance	V_{CB}=5V,V_{BE}=0V, f=1MHz, Emitter Grounded	--	0.32		pF
C_{CE}	Collector Emitter Capacitance	V_{CE}=5V,V_{BE}=0V, f=1MHz, Base Grounded	--	0.2		pF
C_{EB}	Emitter Base Capacitance	V_{EB}=0.5V,V_{CB}=0V, f=1MHz, Collector Grounded		0.4		pF
f_T	Transition frequency	V_{CB}=3V, I_C=15mA, f=1GHz	11	14	--	GHz

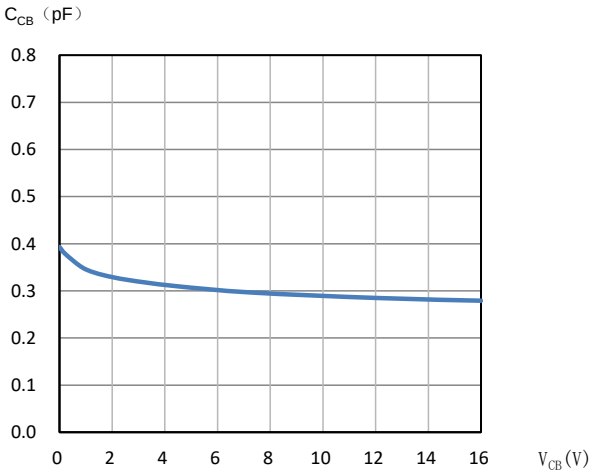
Typical Operating Characteristics



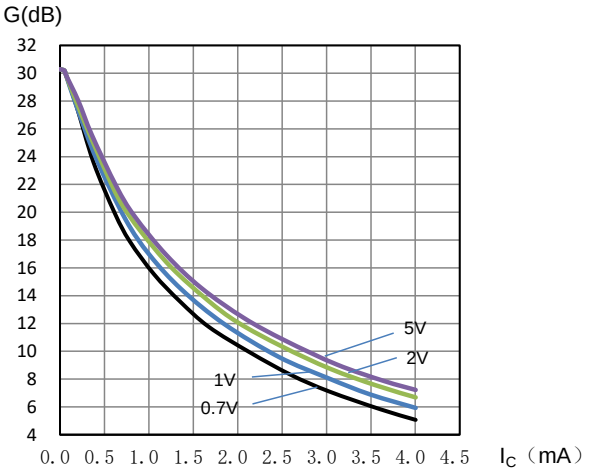
Transition frequency f_T = f(I_C), f = 1 GHz, V_{CE} = parameter



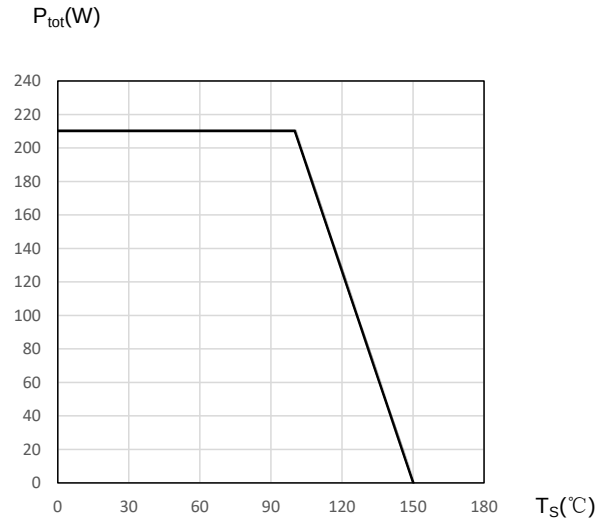
Power gain G_{ma}, G_{ms} = f(I_C),f = 0.9GHz, V_{CE} = parameter



Collector base capacitance C_{CB} = f(V_{CB}), f = 1 MHz

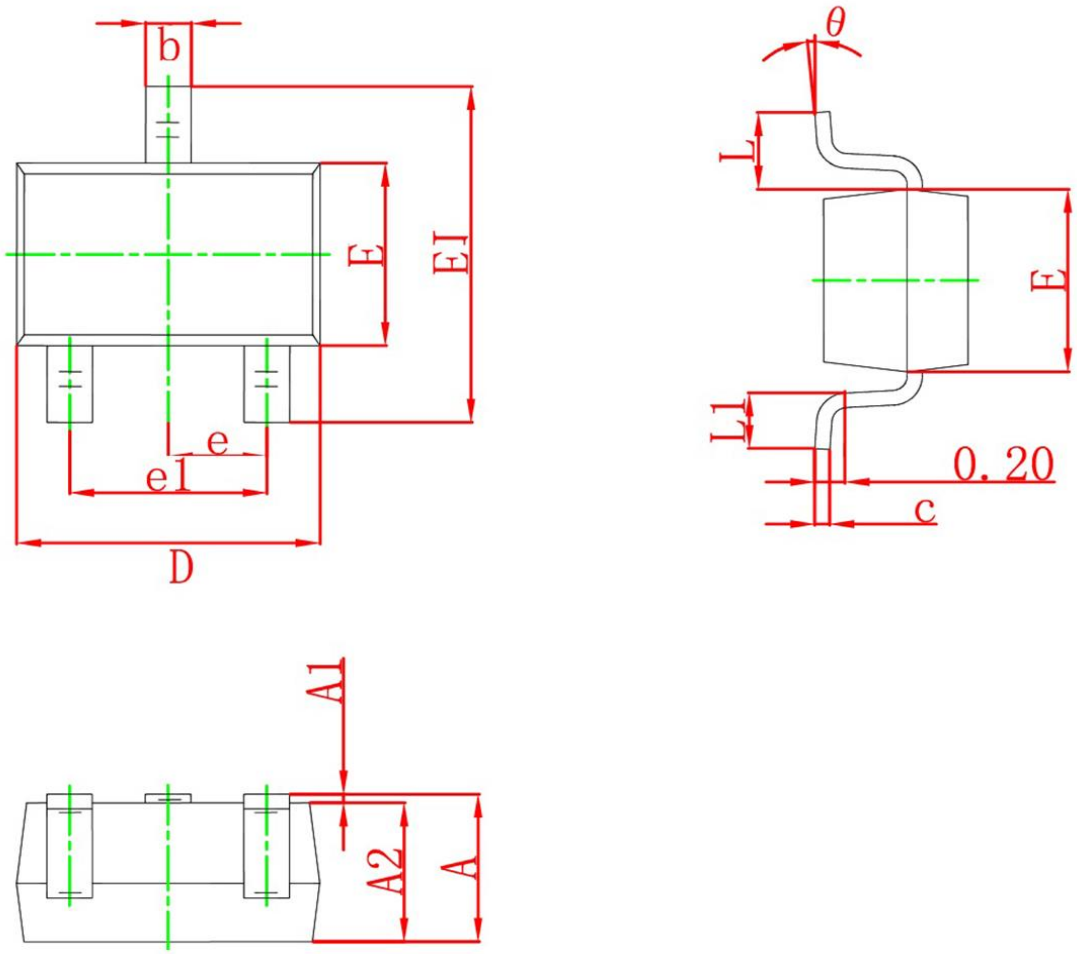


Insertion Power Gain $IS_{21}I^2$ = f(f), I_C = 15 mA, V_{CE} = parameter



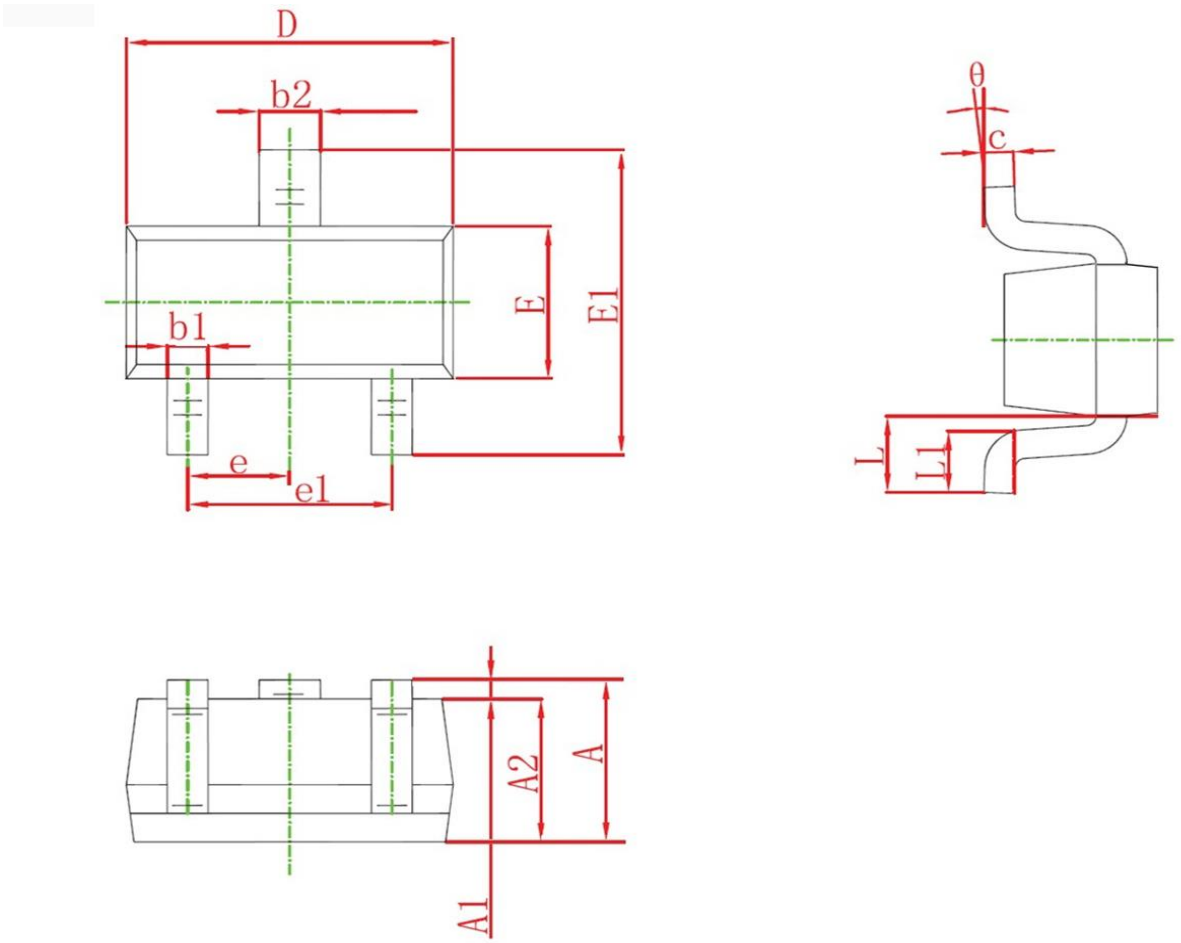
Power derating curve

SOT-323 Package information



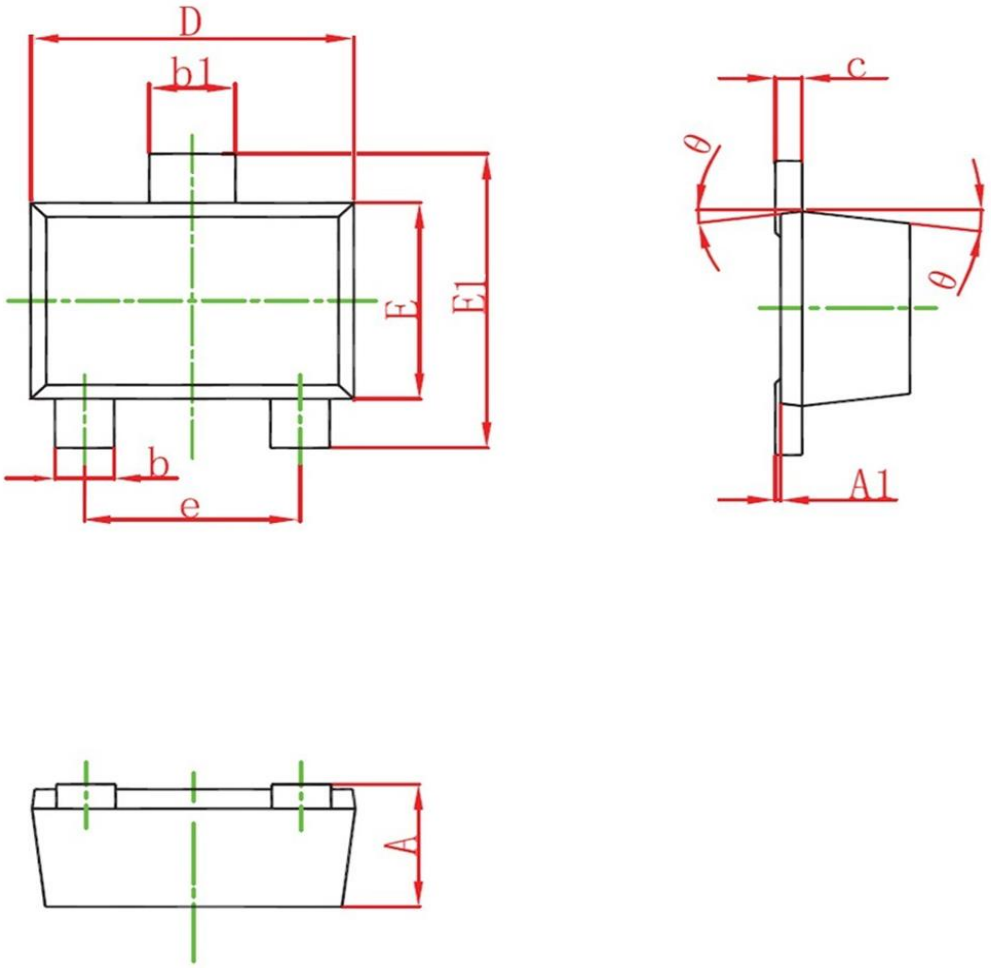
Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523 Package information



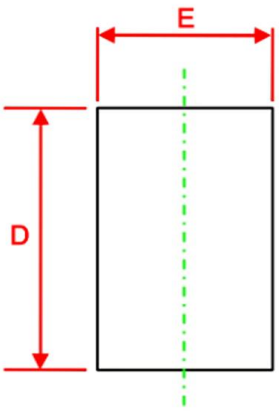
Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500TYP		0.020TYP	
e1	0.900	1.100	0.035	0.043
L	0.400REF		0.016REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

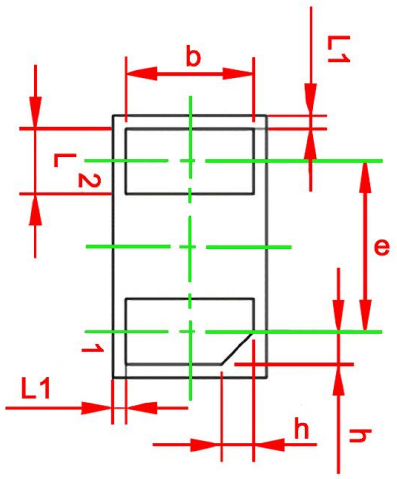
SOT-723 Package information

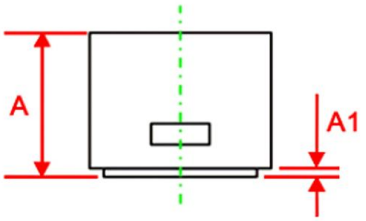


Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.320	0.400	0.012	0.016
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.006	0.010
b1	0.270	0.370	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.046	0.050
E	0.750	0.850	0.030	0.034
E1	1.150	1.250	0.046	0.050
e	0.800TYP		0.020TYP	
θ	7°REF		7°REF	

DFN1006-3L Package information







Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.450	0.550	0.017	0.021
A1	0.000	0.030	0.000	0.001
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.021	0.025
b	0.470	0.550	0.018	0.021
e	0.65TYP		0.025TYP	
e2	0.35TYP		0.013TYP	
L1	0.05TYP		0.001TYP	
L	0.220	0.300	0.008	0.012
b1	0.110	0.190	0.004	0.007