EVVOSEMI®
THINK CHANGE DO

ESD TVS MOS LDO Diode Sensor DC-DC

Product Specification

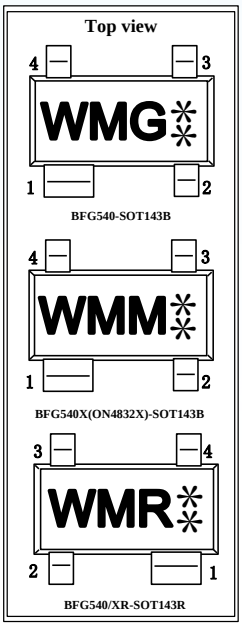
Domestic Part Number	BFG540
Overseas Part Number	BFG540
Equivalent Part Number	BFG540

BFG540 系列 NPN 微波低噪声晶体管

BFG540; BFG540/X(ON4832/X);BFG540/XR NPN TRANSISTOR

MICROWAVE LOW NOISE AMPLIFIER NPN SILICON EPITAXIAL TRANSISTOR

1. 简述：



本芯片采用硅外延工艺制造，具有高功率增益、低噪声系数、较宽的转换频率、低漏电流、金材质引出结构，具有较高的可靠性；

- 主要应用于超高频微波、VHF、UHF 和 CATV 高频宽带低噪声放大器中，如数字有线电视机顶盒、卫星电视调谐器、CATV 放大器、模拟数字无绳电话、射频模块和光纤传输中的中继放大器等产品；
- 集电极-发射极击穿电压：BV_{CEO}=15V，最大集电极电流：I_C=120mA，集电极耗散功率：P_C=400mW，特征频率：f_T=9GHz；
- 4 引脚（宽集电极引脚与双发射极引脚）的 SOT143B 或者 SOT143R 表面贴塑封；
- ON4832/X 同 BFG540/X 的性能、封装、丝印等完全一样，只是标签型号不同。

2. 封装形式和引脚定义：

型号(Model)	BFG540	BFG540/X（ON4832/X）	BFG540/XR
封装形(Package)	SOT143B	SOT143B	SOT143R
本体丝印(Marking)	WMG	WMM	WMR
引脚(Pin)1	collector	collector	collector
引脚(Pin)2	base	emitter	emitter
引脚(Pin)3	emitter	base	base
引脚(Pin)4	emitter	emitter	emitter

3. 极限参数（Tamb=25℃）：

参数名称	符号	额定值	单位
集电极-基极击穿电压	BV_{CBO}	20	V
集电极-发射极击穿电压	BV_{CEO}	15	V
发射极-基极击穿电压	BV_{EBO}	2.5	V
集电极电流	I_C	120	mA
耗散功率	P_T	400	mW
最高结温	T_J	150	℃
储存温度	T_{stg}	-65～+150	℃

4. 电参数及规格（Tamb=25℃）：

参数名称	符号	测试条件	最小值	典型值	最大值	单位
集电极截止电流	I_{CBO}	V_{CB}=6V,I_E=0	-	-	0.05	μA
直流电流放大系数	h_{FE}	V_{CE}=8V,I_C=40mA	60	120	250	
特征频率	f_T	I_C=40mA V_{CE}=8V, f=1MHz, T_{amb}=25℃	-	9	-	GHz
反馈电容	Cre	I_C=i_c=0,V_{CB}=8V,f=1MHz	-	0.5	-	pF

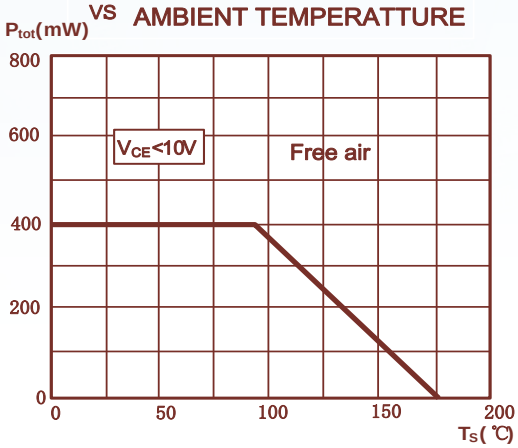
集电极电容	Cc	$I_E=i_e=0,V_{CB}$=8V,f=1MHz	-	0.9	-	pF
发射极电容	Ce	$I_C=i_C=0,V_{EB}$=0.5V,f=1MHz	-	2.0	-	pF
插入功率增益	$\|S_{21}\|^2$	I_C=40mA,V_{CE}=8V,f=900MHz, T_{amb}=25℃	15	16	-	dB
噪声系数	NF	V_{CE}=8V,I_C=10mA,f=900MHz, T_{amb}=25℃	-	1.3	1.8	dB
		V_{CE}=8V,I_C=40mA,f=900MHz, T_{amb}=25℃	-	1.9	2.4	dB
		V_{CE}=8V,I_C=10mA,f=2GHz, T_{amb}=25℃	-	2.1	-	dB
最大单边功率增益	G_{UM}*	I_C=40mA,V_{CE}=8V,f=900MHz, T_{amb}=25℃	-	18	-	dB
		I_C=40mA,V_{CE}=8V,f=2GHz ， T_{amb}=25℃	-	11	-	dB
第三阶截取点	ITO	I_C=40mA,V_{CE}=8V,R_L=50Ω,f_p =900MHz,f_q=902MHz,T_{amb}= 25℃	-	34	-	dBm
输出电压	V_O	V_O=275mV,I_C=40mA,V_{CE}=8 V,z_s=z_L=75Ω,f_p=795.25MHz, f_q=803.25MHz,f_r=803.25MHz ,T_{amb}=25℃dim=-60dB	-	500	-	mV
输出功率在 1dB 的增益压缩	P_{L1}	I_C=40mA,V_{CE}=8V,R_L=50Ω,f= 900MHz, T_{amb}=25℃	-	21	-	dBm
二阶互调失真	d_2	V_O=275mV,I_C=40mA,V_{CE}=8 V,f_p=250MHz,f_q=560MHz, T_{amb}=25℃	-	-50	-	dB

* $G_{UM}=10\log\frac{|S_{21}|^2}{(1-S_{11})^2(1-S_{22})^2}dB$

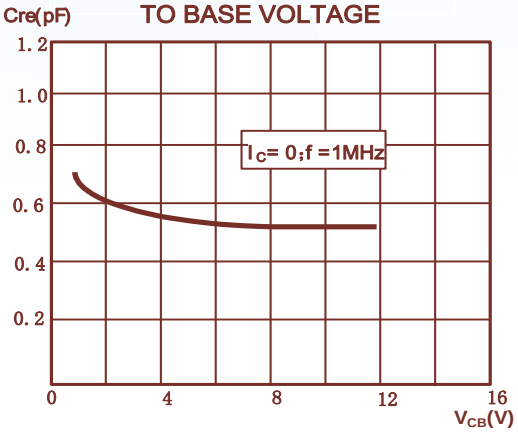
5. 典型特征曲线：

TYPICAL CHARACTERISTICS
(T_A=25℃,unless otherwise specified)

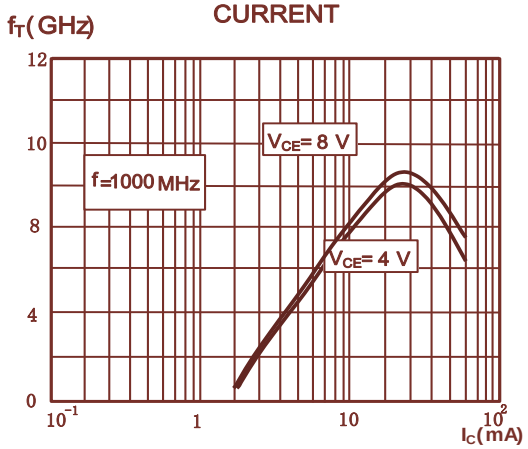
TOTAL POWER DISSIPATION VS AMBIENT TEMPERATTURE



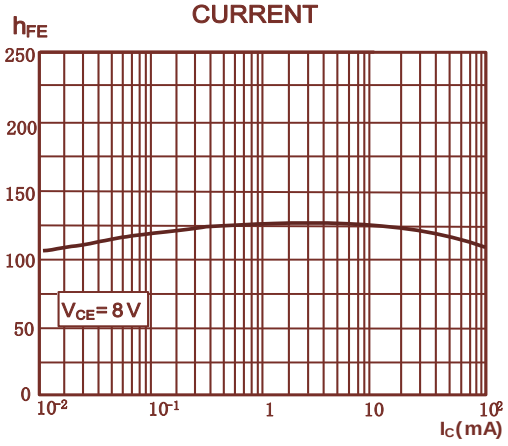
REVERSE TRANSFER CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



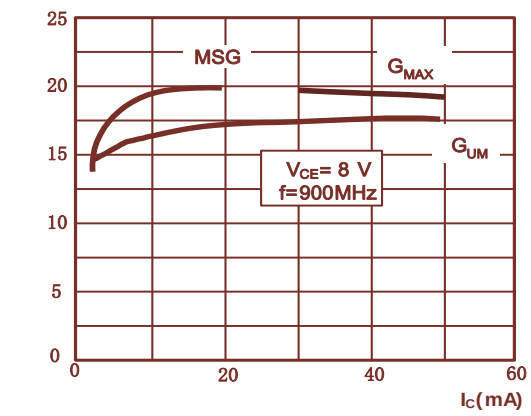
FREQUENCY VS. COLLECTOR CURRENT



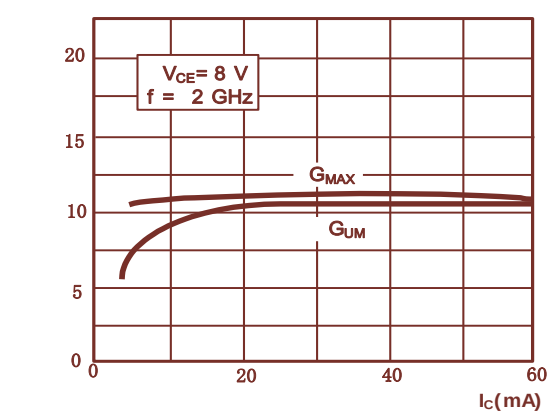
DC CURRENTVS. COLLECTOR CURRENT



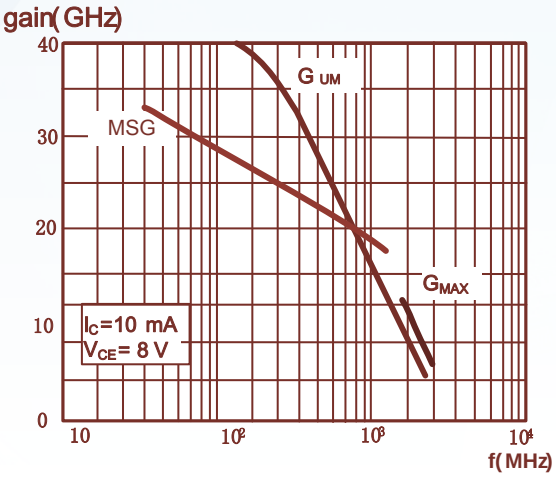
GAINVS. FUNCTION of COLLECTOR CURRENT



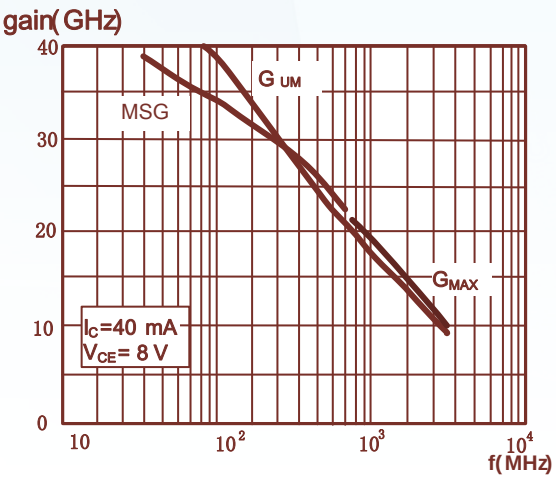
GAINVS. FUNCTION of COLLECTOR CURRENT



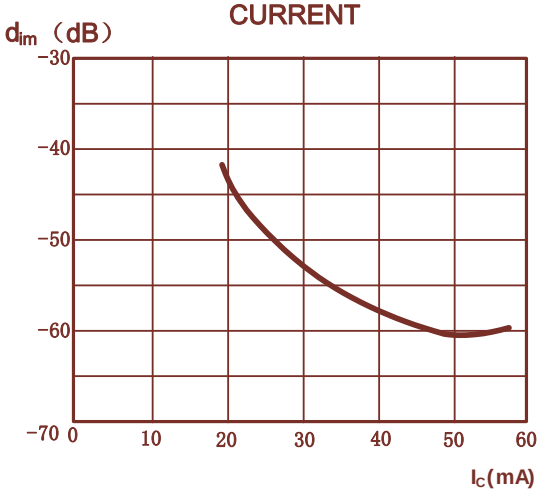
GAINvs. FUNCTION of FREQUENCY



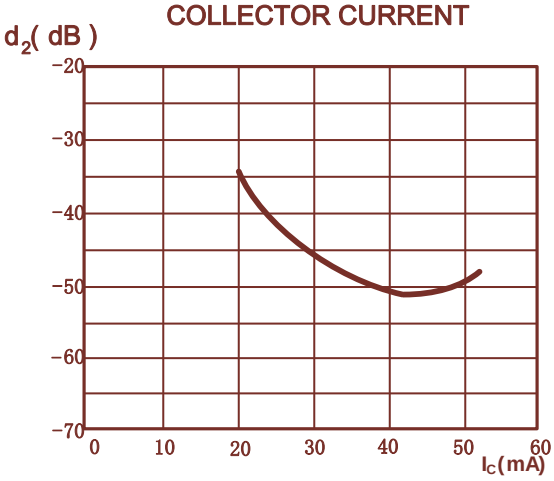
GAINvs. FUNCTION of FREQUENCY



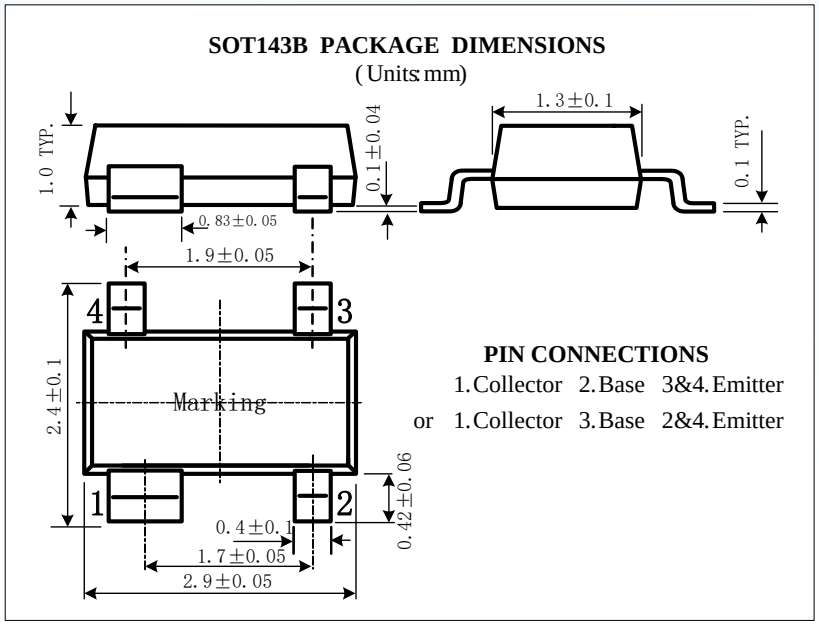
INTERMODULATION DISTORTION vs. FUNCTION of COLLECTOR CURRENT

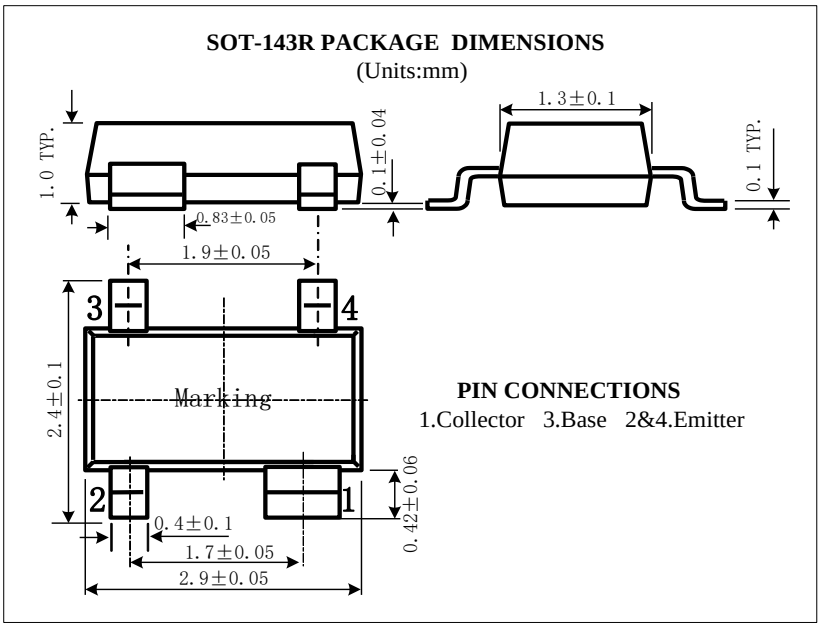


SECOND ORDER INTERMODULATION DISTORTION vs. FUNCTION of COLLECTOR CURRENT



6. 封装尺寸示意图：





7. 包装信息：

PACKAGE INFORMATION

封装形式 Package	数量/盘 Shipping	盘/中盒 Inner Box	中盒/箱 Carton
SOT143B	3000pcs/Tape&Reel	5Tape&Reel	8-16 Inner Box
SOT143R	3000pcs/Tape&Reel	5Tape&Reel	8-16 Inner Box

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