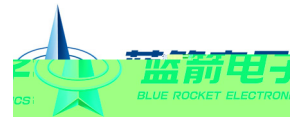


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DATA SHEET

TO-92

NPN

Silicon NPN transistor in a TO-92 Plastic Package.

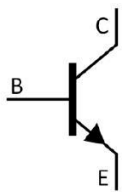
P_C

High P_C .

AM

FM

AM converter, FM low noise figure high frequency amplifier.



PIN1

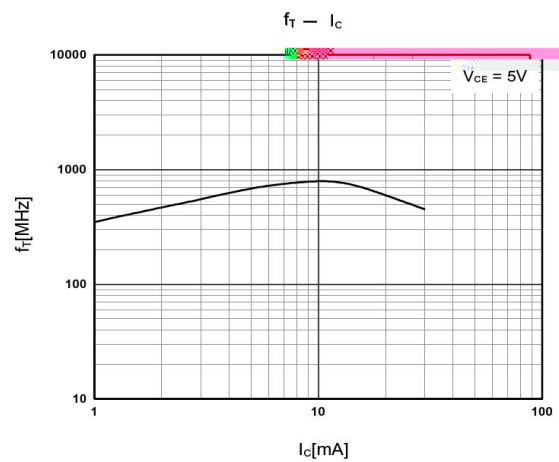
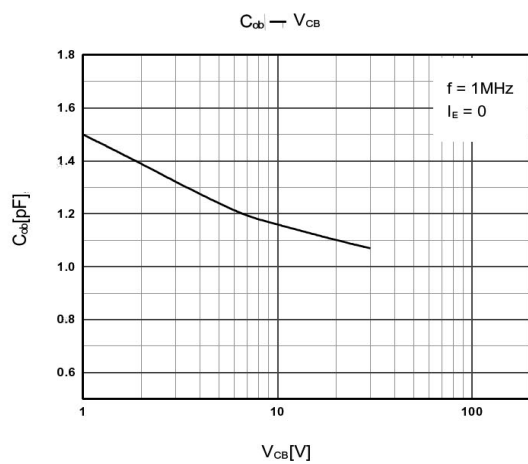
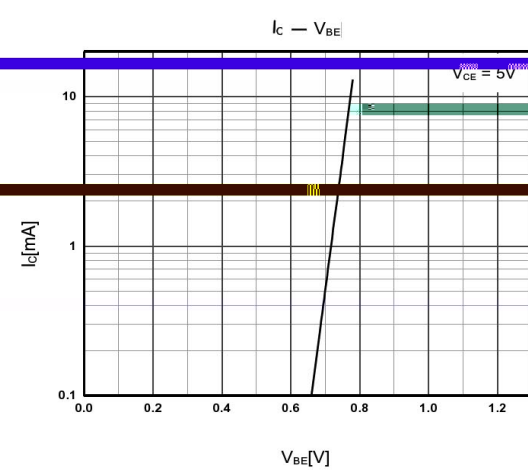
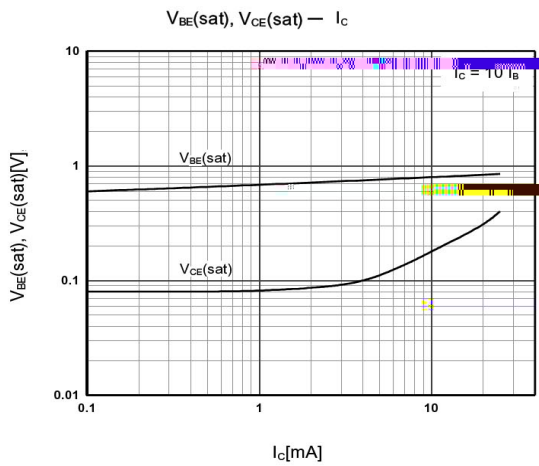
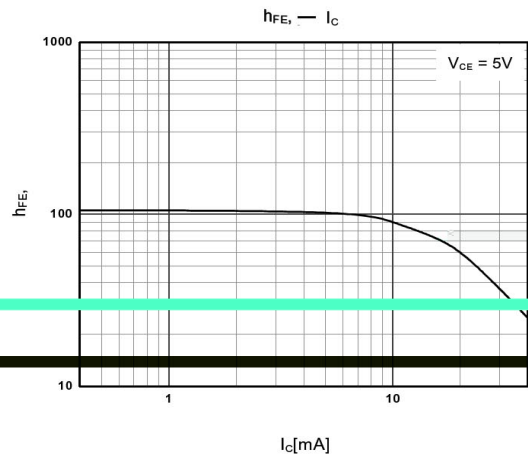
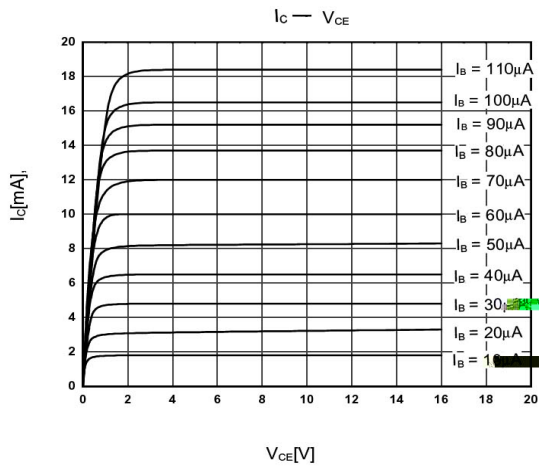
/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	4.0	V
Collector Current - Continuous	I_C	25	mA
Base Current - Continuous	I_B	5.0	mA
Collector Power Dissipation	P_C	400	mW
Junction Temperature	T_J	150	
Storage Temperature Range	T_{stg}	-55 150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=0.1\text{mA}$ $I_E=0$	30			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0\text{mA}$ $I_B=0$	20			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=30\text{V}$ $I_E=0$			0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=3.0\text{V}$ $I_C=0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=5.0\text{V}$ $I_C=1.0\text{mA}$	28		198	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$ $I_B=1.0\text{mA}$		0.1	0.3	V
Base to Emitter Voltage	V_{BE}	$V_{CE}=5.0\text{V}$ $I_C=1.0\text{mA}$		0.72		V
Transition Frequency	f_T	$V_{CE}=5.0\text{V}$ $I_C=1.0\text{mA}$	400	620		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10\text{V}$ $I_E=0$ $f=1.0\text{MHz}$		1.2	1.6	pF
Noise Figure	NF	$V_{CE}=5.0\text{V}$ $R_g=50\Omega$ $I_C=1.0\text{mA}$ $f=100\text{MHz}$		3.0	5.0	dB

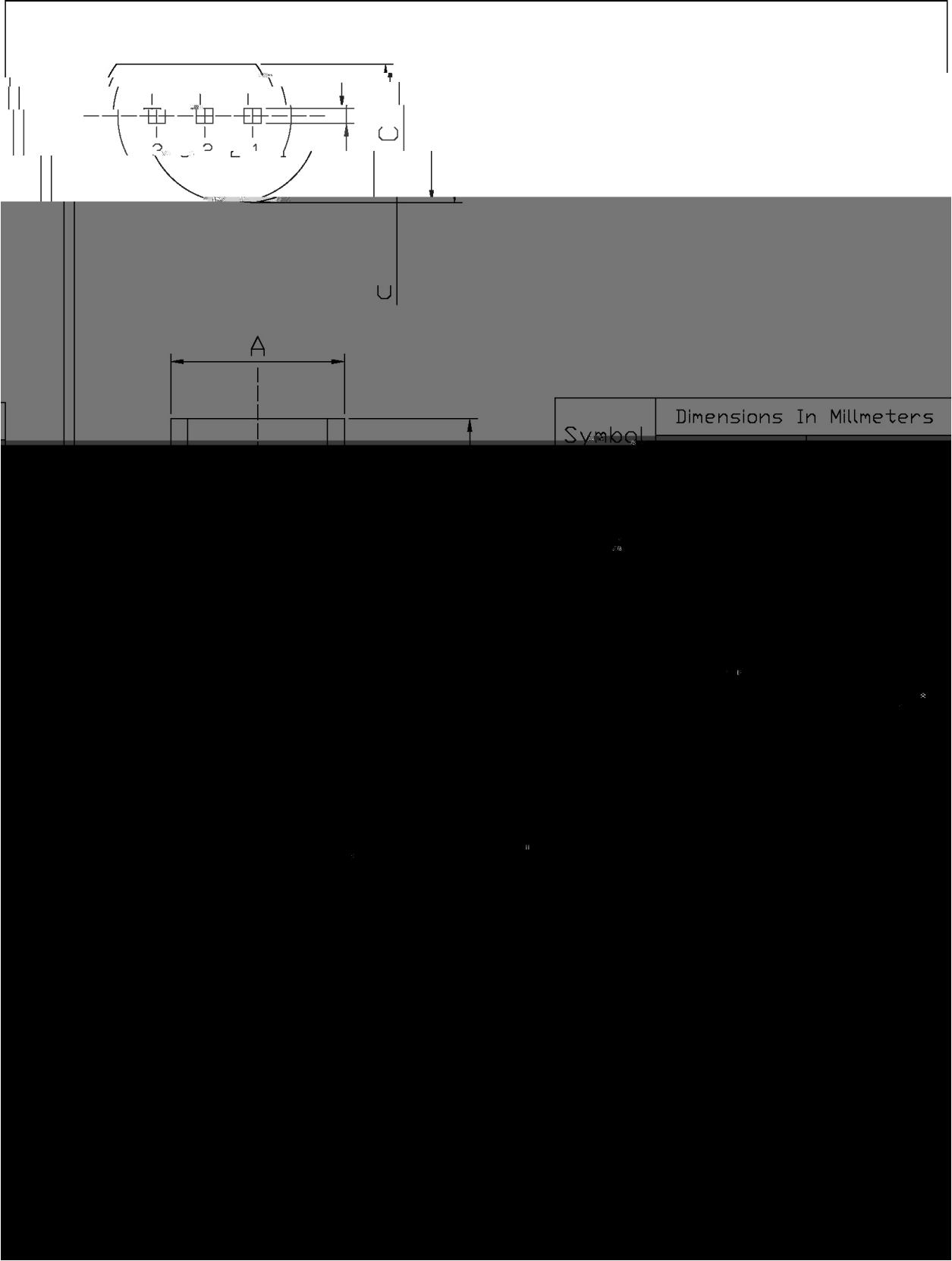
/ Electrical Characteristic Curve



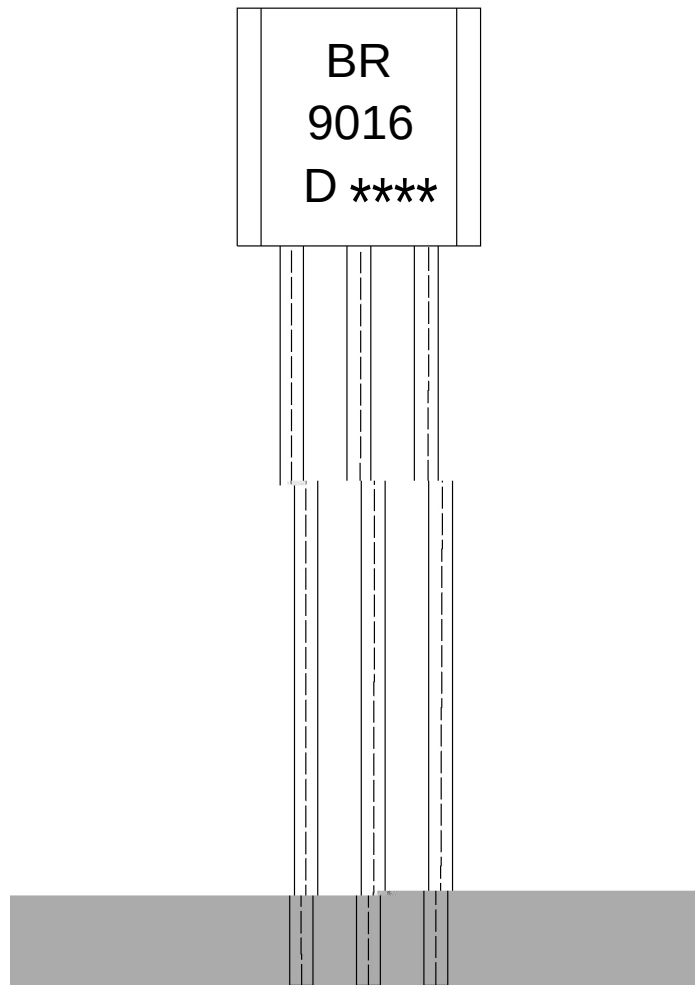
/ Package Dimensions

TO-92

Unit: mm



/ Marking Instructions



BR

9016

D: h_{FE}

Note:

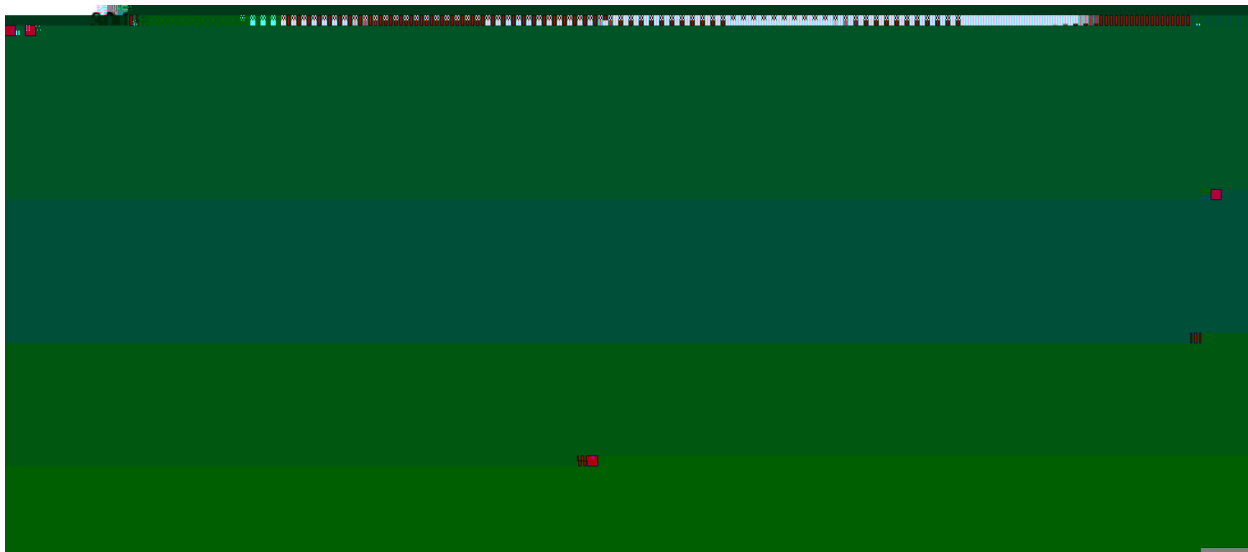
BR: Company Code.

9016: Product Type.

D: h_{FE} Classifications Symbol.

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-------|-----|-----------|---|--------------------------------------|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255±5 | | 5±0.5sec; | 2.Peak Temp.:255±5 , Duration:5±0.5sec. | |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

270±5 10±1 sec. Temp.:270±5 Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)		
	Units/Bag 只/袋	Bags/Inner Box 袋/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Bag 袋	Inner Box 盒	Outer Box 箱
TO-92	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195
	1,000	10	10,000	10	100,000	135×190	237×172×102	560×245×375

/ AMMO

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)	
	Units/tape 只/纸带	Tape/Inner Box 纸带/盒	Rows/Inner Box 纸带层/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Inner Box 盒	Outer Box 箱
TO-92	3,000	1	120	10	30,000	328×230×42	小箱 480×346×235, 大箱 547×407×268

/ Notices