

**/ Descriptions**

Silicon NPN transistor in a TO-92 Plastic Package.

**/ Features**

Small output capacitance, low noise figure.

**/ Applications**

AM converter ,AM/FM IF amplifier and local oscillator of AM/FM tuner.

**/ Equivalent Circuit**



**/ Pinning**



PIN1 Base      PIN 2 Collector      PIN 3 Emitter

**/ hFE Classifications & Marking**

h <sub>FE</sub> Classifications Symbol	M	L	K
h <sub>FE</sub> Range	40~80	60~120	90~180

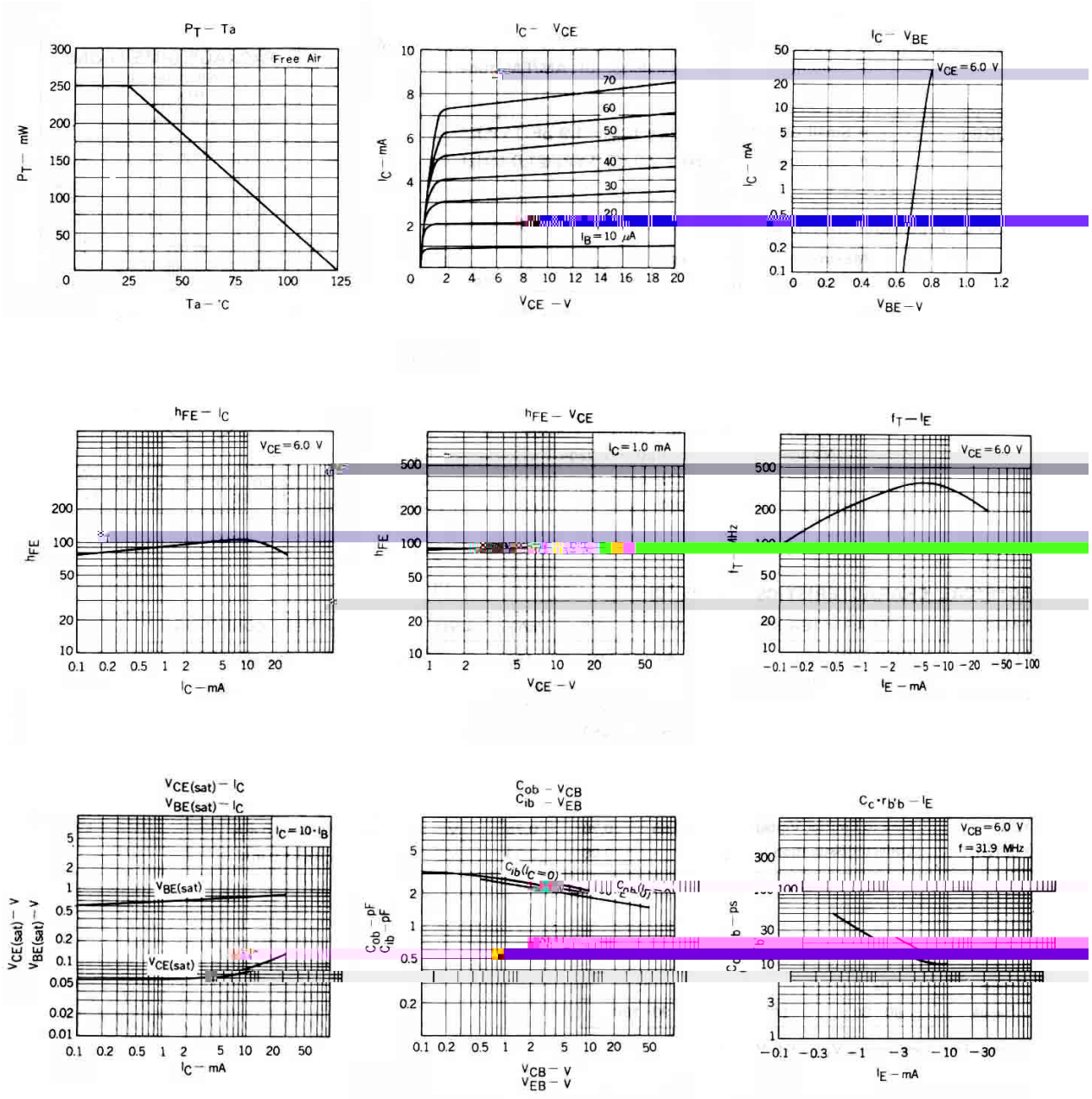
**/ Absolute Maximum Ratings(Ta=25 )**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	50	V
Collector to Emitter Voltage	$V_{CEO}$	30	V
Emitter to Base Voltage	$V_{EBO}$	5.0	V
Collector Current - Continuous	$I_C$	30	mA
Base Current – Continuous	$I_B$	30	mA
Collector Power Dissipation	$P_C$	250	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55 150	°C

**/ Electrical Characteristics(Ta=25 )**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=50V$ $I_E=0$			0.1	A
Collector Cut-Off Current	$I_{CEO}$	$V_{EB}=5.0V$ $I_C=0$			0.1	A
DC Current Gain	$h_{FE}$	$V_{CE}=6.0V$ $I_C=1.0mA$	40	90	180	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA$ $I_B=1.0mA$		0.08	0.3	V
Base to Emitter Voltage	$V_{BE}$	$V_{CE}=6.0V$ $I_C=1.0mA$		0.70	0.75	V
Transition Frequency	$f_T$	$V_{CE}=6.0V$ $I_C=1.0mA$	150	250		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=6.0V$ $I_E=0mA$ $f=1.0MHz$		1.9	2.2	pF
Noise Figure	NF	$V_{CE}=6.0V$ $R_g=500$ $I_E=-1.0mA$ $f=1.0MHz$		2.0	4.0	dB
Collector Base Time Constant	$C_c \cdot r_{bb}'$	$V_{CE}=6.0V$ $I_E=-10mA$ $f=31.9MHz$		10	15	pS

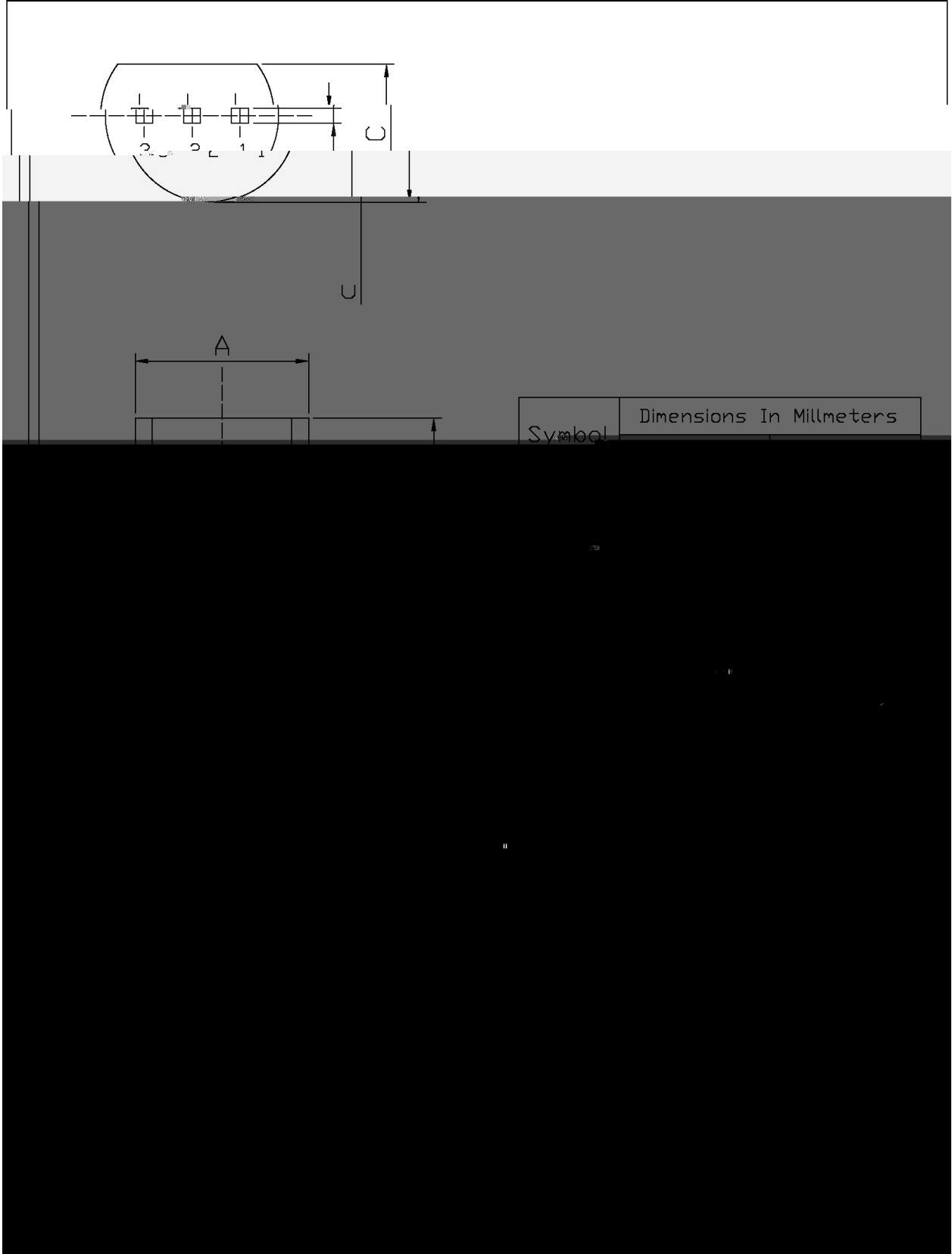
/ Electrical Characteristic Curve



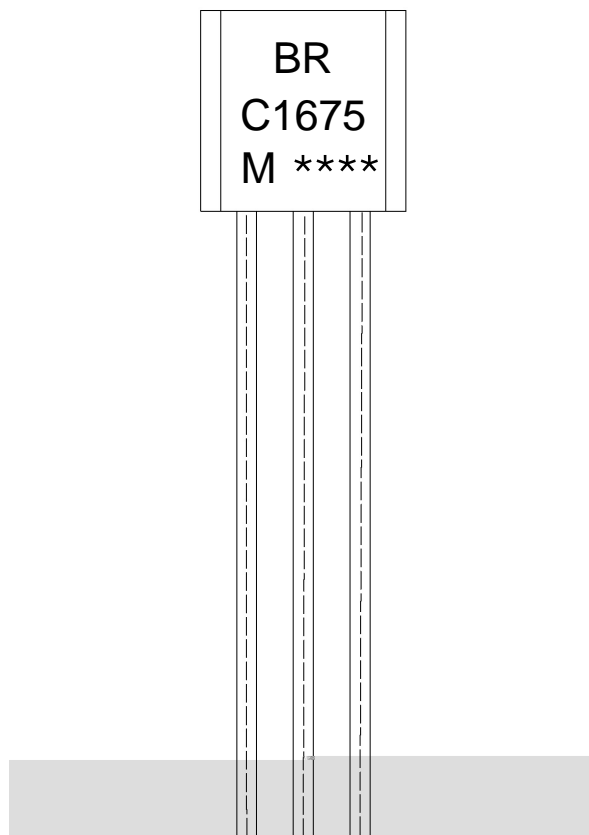
/ Package Dimensions

T0-92

Unit: mm



/ Marking Instructions



$h_{FE}$

Note:

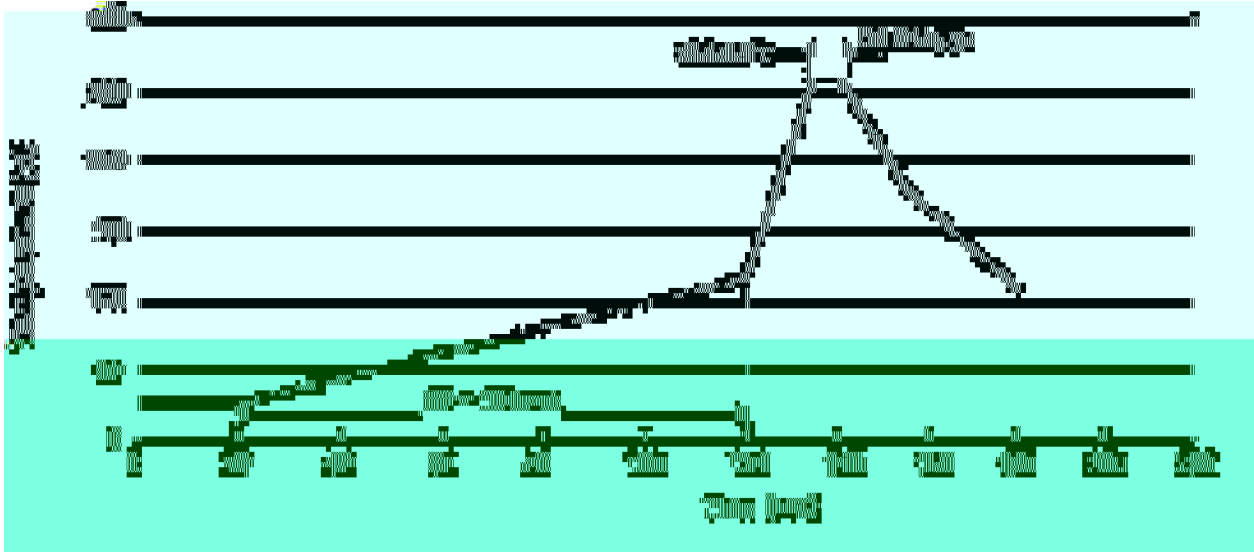
BR: Company Code.

C1675: Product Type.

M:  $h_{FE}$  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°C                      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