

/ Descriptions

TO-92 NPN Silicon NPN transistor in a TO-92 Plastic Package.

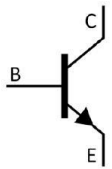
/ Features

High total power dissipation, low $V_{CE(sat)}$ and high h_{FE} .

/ Applications

Output stage of portable radio and cassette type tape recorder, general purpose applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	M	L	K
h_{FE} Range	90~180	135~270	200~400

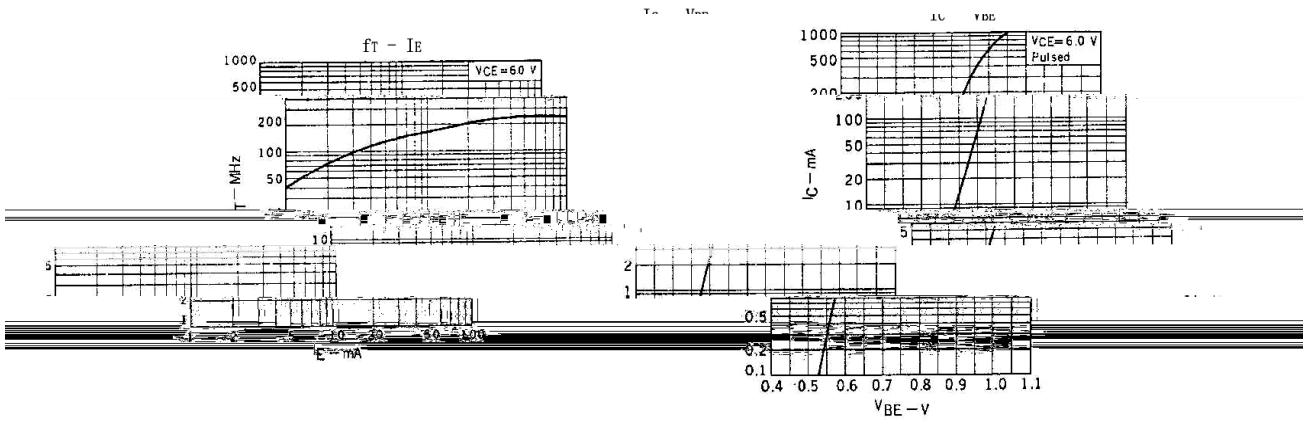
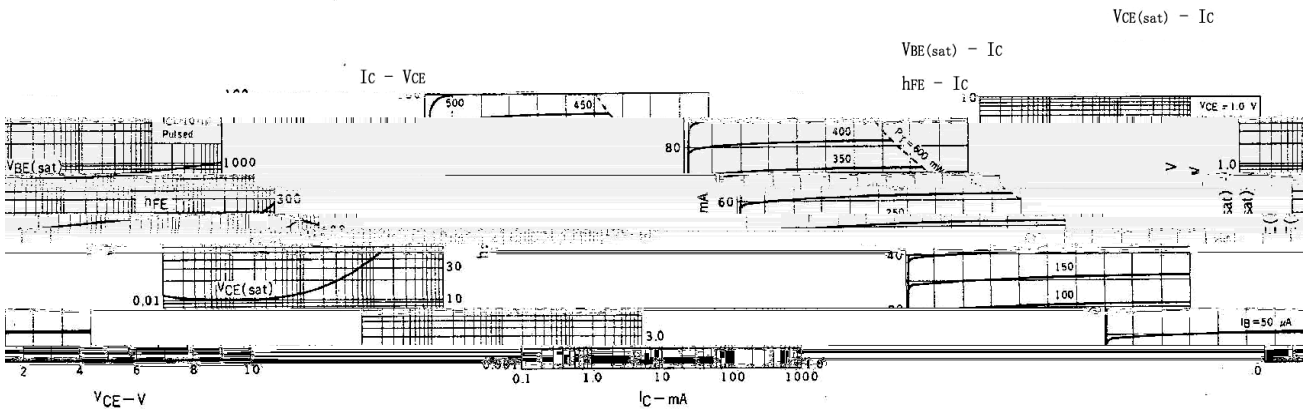
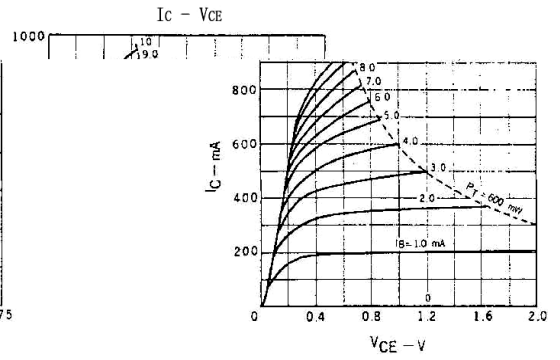
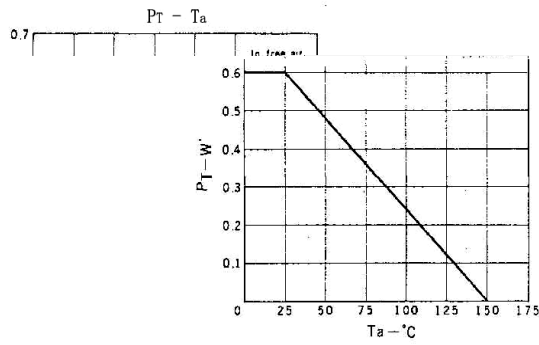
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	25	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	700	mA
Base Current - Continuous	I_B	150	mA
Collector Power Dissipation	P_C	600	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55~150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut-Off Current	I_{CBO}	$V_{CB}=30V$ $I_E=0$			0.1	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5.0V$ $I_C=0$			0.1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=1.0V$ $I_C=100mA$	90		400	
	$h_{FE(2)}$	$V_{CE}=1.0V$ $I_C=700mA$	50			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=700mA$ $I_B=70mA$		0.2	0.6	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=700mA$ $I_B=70mA$		0.95	1.2	V
Collector to Emitter Voltage	V_{BE}	$V_{CE}=6.0V$ $I_C=10mA$		0.64	0.7	V
Transition Frequency	f_T	$V_{CE}=6.0V$ $I_C=10mA$	50	170		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=6.0V$ $I_E=0$ $f=1.0MHz$		13	25	pF

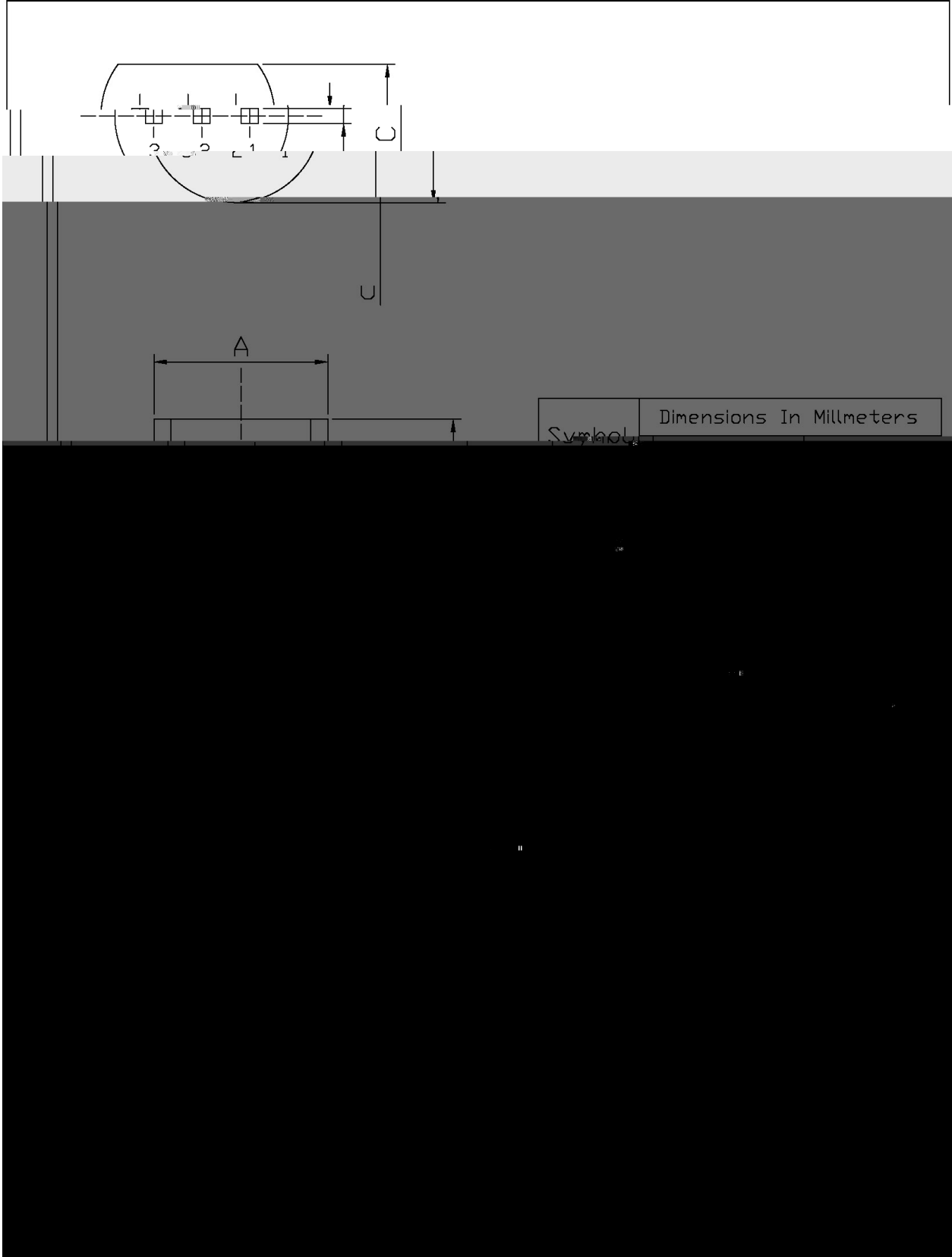
/ Electrical Characteristic Curve



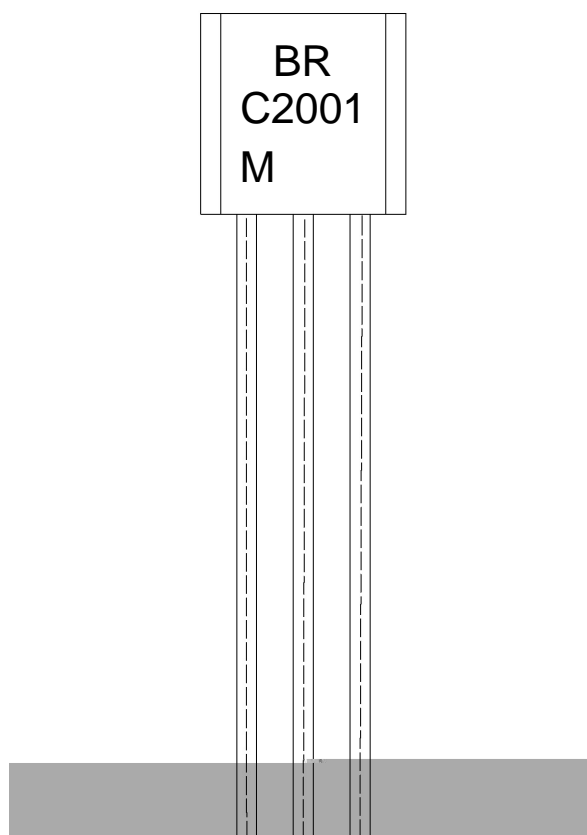
/ Package Dimensions

TO-92

Unit: mm



/ Marking Instructions



BR:

C2001

M: h_{FE}

Note:

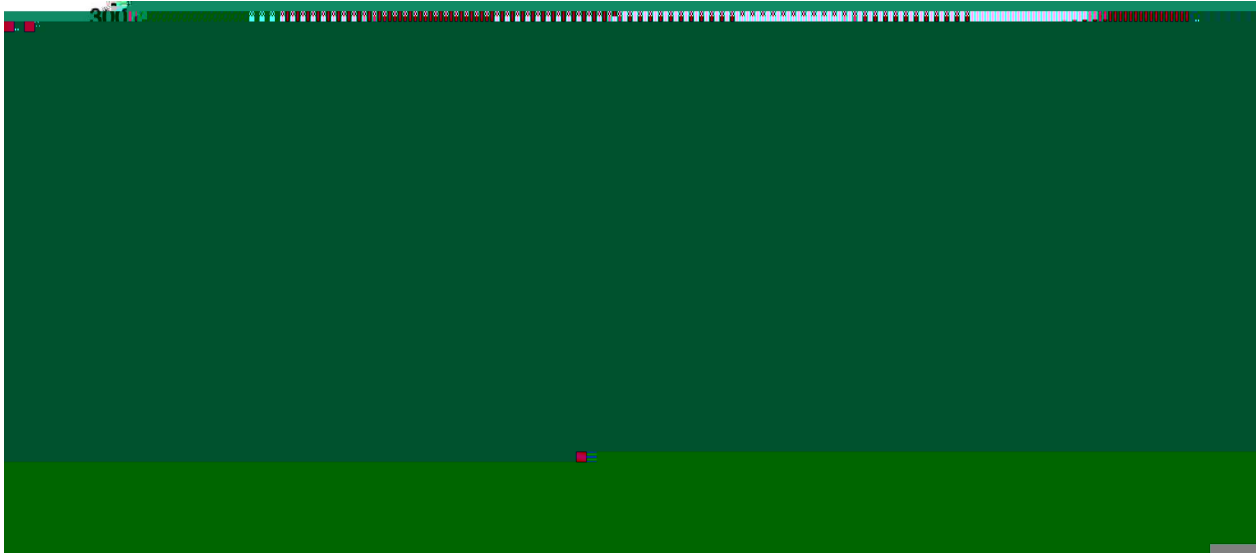
BR: Company Code.

C2001: 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 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)		
	只袋	袋盒	只盒	盒箱	只箱	袋	盒	箱

/ AMMO

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm3)	
	只纸带	纸带盒	纸带层盒	盒箱	只箱	盒	箱
							小箱 大箱

/ Notices