

**/ Descriptions**

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

**/ Features**

$V_{CE(sat)}$  ,          2SA 719  
Low  $V_{CE(sat)}$ , complementary pair with 2SA719.

**/ Applications**

Audio frequency power amplifier and driver.

**/ Equivalent Circuit**



**/ Pinning**



PIN1    Base          PIN 2    Collector          PIN 3    Emitter

**/ hFE Classifications & Marking**

$h_{FE}$ Classifications Symbol	Q	R	S
$h_{FE}$ Range	85~170	120~240	170~340

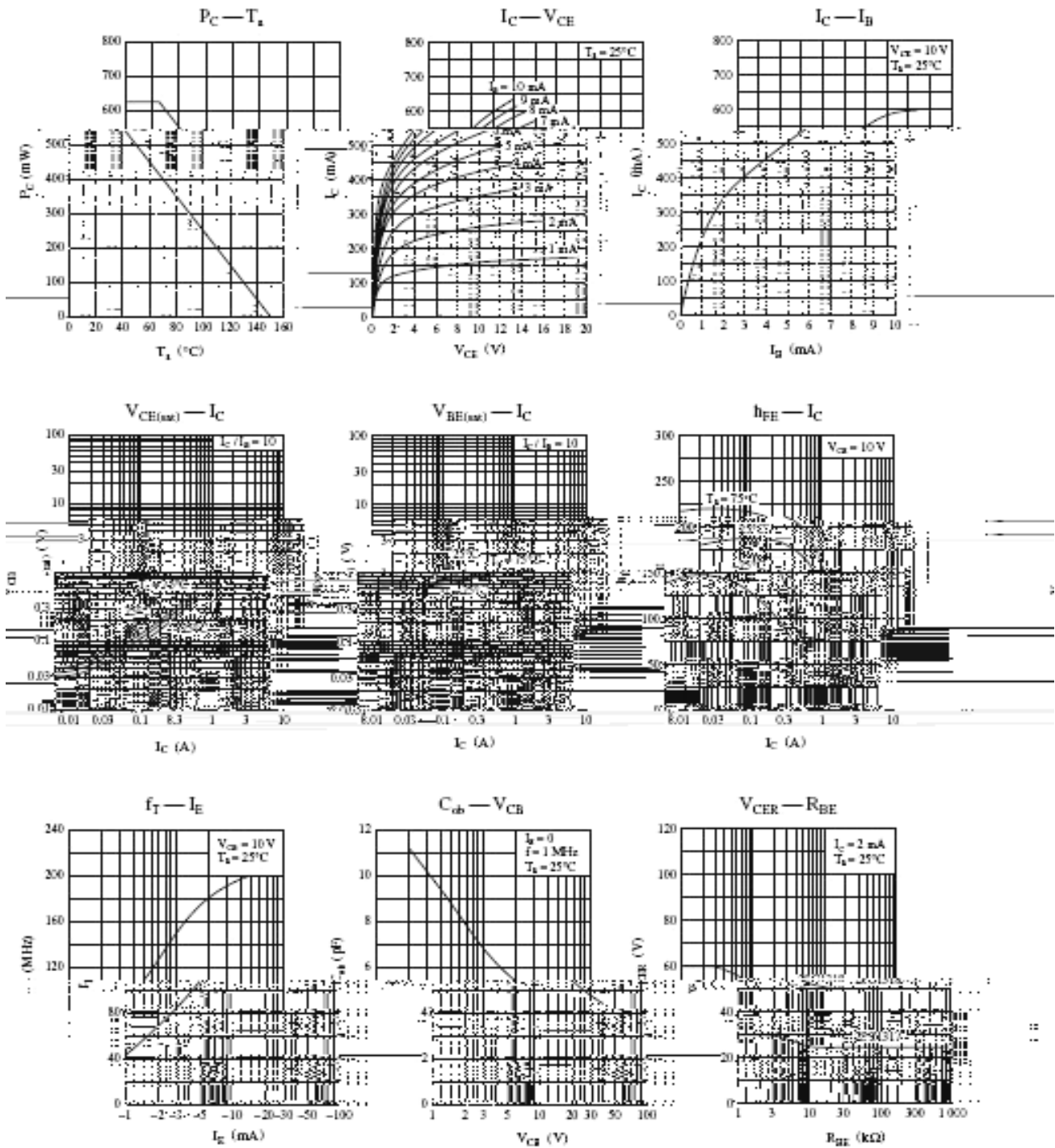
**/ Absolute Maximum Ratings(Ta=25 )**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	30	V
Collector to Emitter Voltage	$V_{CEO}$	25	V
Emitter to Base Voltage	$V_{EBO}$	7.0	V
Collector Current - Continuous	$I_C$	500	mA
Collector Current – Continuous(Pulse)	$I_{CP}$	1.0	A
Collector Power Dissipation	$P_C$	625	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 to Base Breakdown Voltage	$V_{CBO}$	$I_C=10\text{ A}$ $I_E=0$	30			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=10\text{mA}$ $I_B=0$	25			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=10\text{ A}$ $I_C=0$	7.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=20\text{V}$ $I_E=0$			0.1	A
DC Current Gain	$h_{FE(1)}$	$V_{CE}=10\text{V}$ $I_C=150\text{mA}$	85	160	340	
	$h_{FE(2)}$	$V_{CE}=10\text{V}$ $I_C=500\text{mA}$	40	90		
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=300\text{mA}$ $I_B=30\text{mA}$		0.35	0.6	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=300\text{mA}$ $I_B=30\text{mA}$		1.1	1.5	V
Transition Frequency	$f_T$	$V_{CE}=10\text{V}$ $I_C=50\text{mA}$		200		MHz
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ $I_E=0$ $f=1.0\text{MHz}$		6.0	15	pF

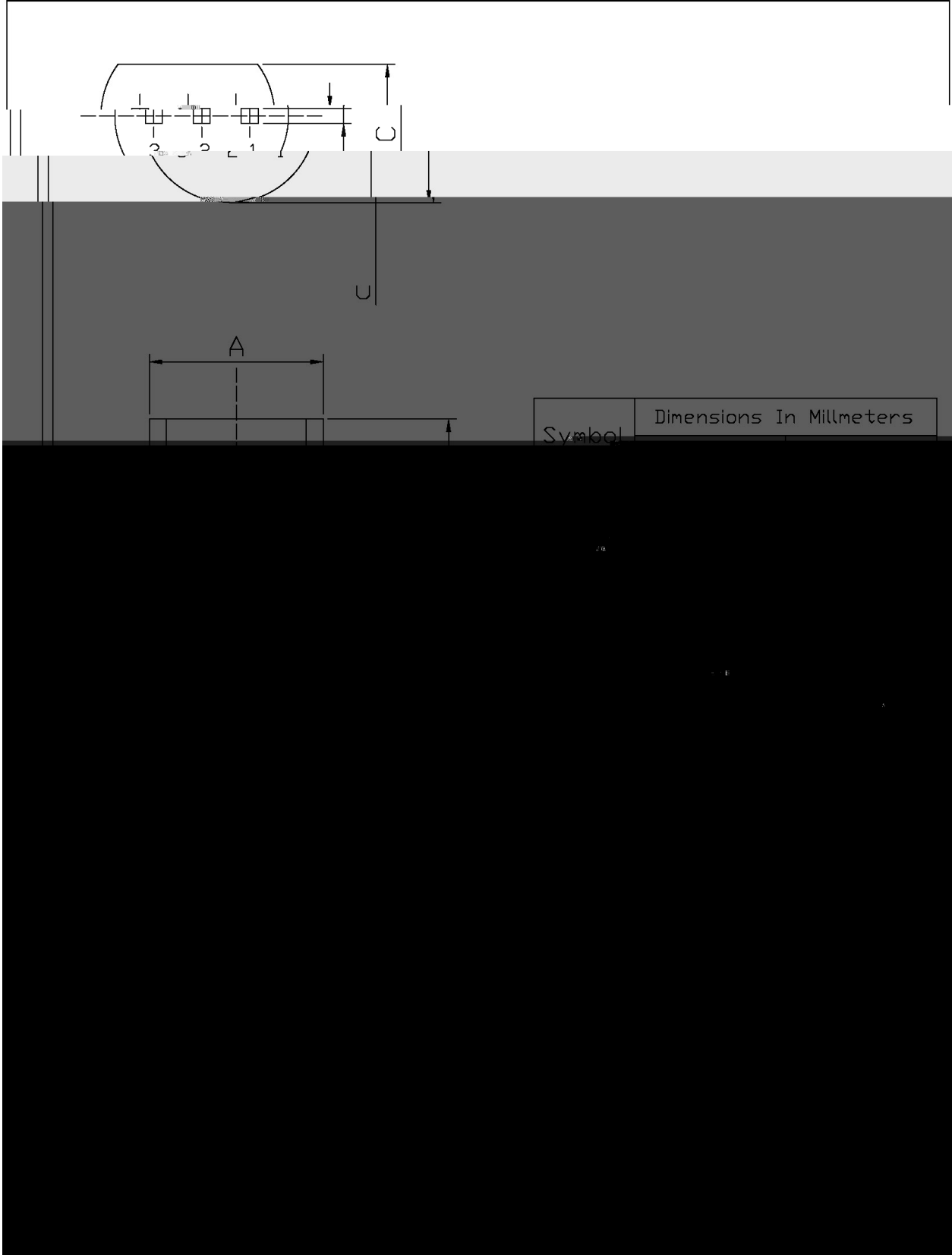
/ Electrical Characteristic Curve



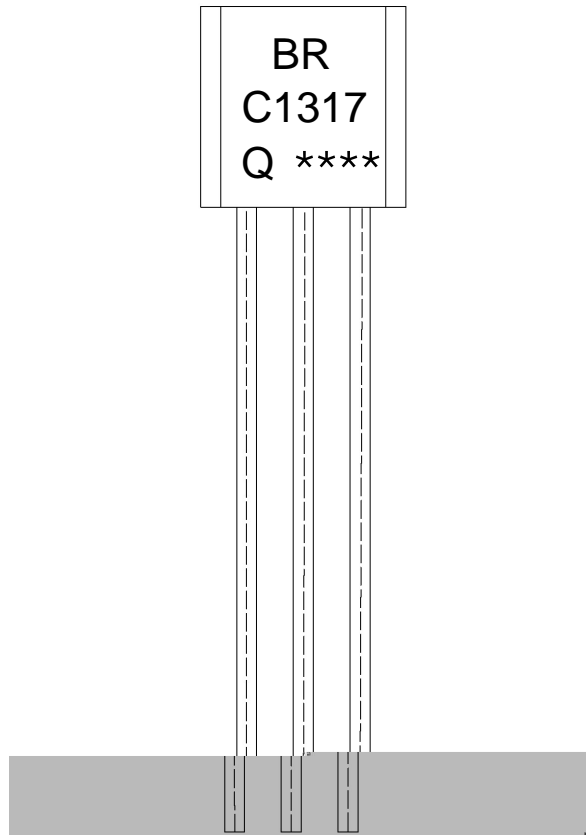
/ Package Dimensions

TO-92

Unit: mm



/ Marking Instructions



BR:

C1317

Q:  $h_{FE}$

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Note:

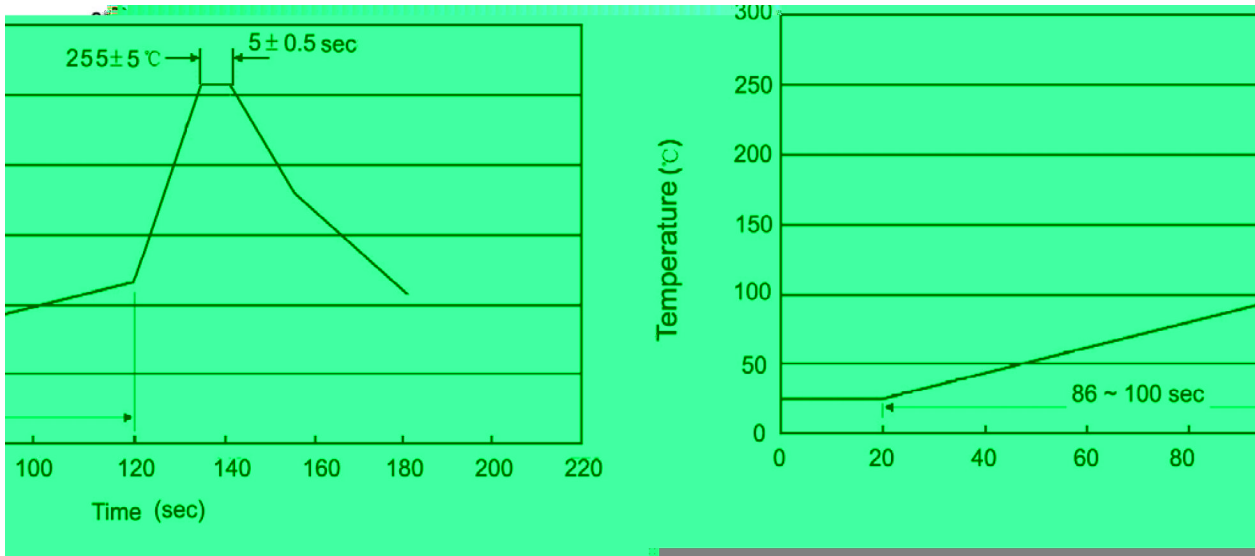
BR: Company Code.

C1317: Product Type.

Q:  $h_{FE}$  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