

/ Descriptions

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

/ Features

2SA1029
Complementary pair with 2SA1029.

/ Applications

Low frequency amplifier r.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ hFE Classifications & Marking

h _{FE} Classifications Symbol	B	C	D
h _{FE} Range	100~200	160~320	250~500

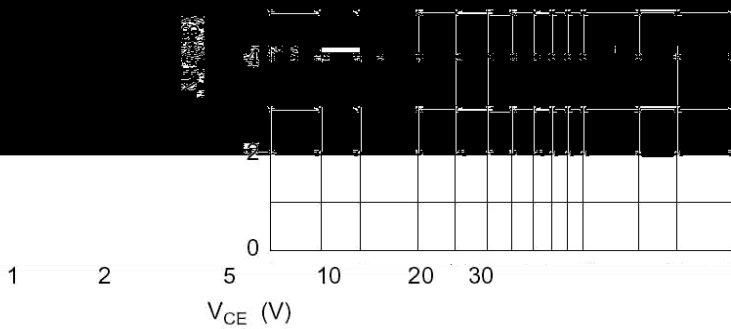
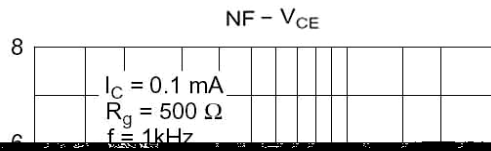
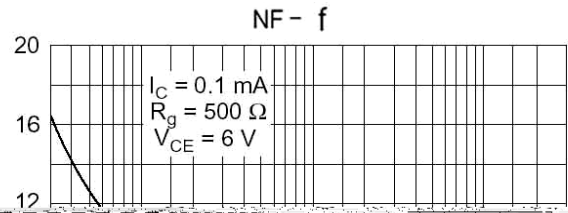
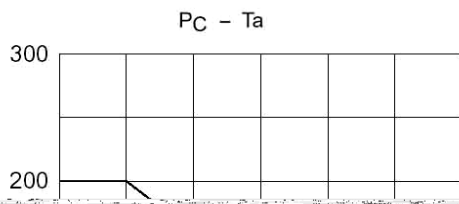
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	100	mA
Emitter Current - Continuous	I_E	-100	mA
Collector Power Dissipation	P_C	200	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}	$I_C=10\mu A$ $I_E=0$	30			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $R_{BE}=\infty$	30			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10\mu A$ $I_C=0$	5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=18V$ $I_E=0$			0.5	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=2.0V$ $I_C=0$			0.5	μA
DC Current Gain	h_{FE}	$V_{CE}=12V$ $I_C=2.0mA$	100		500	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA$ $I_B=1.0mA$			0.2	V
Base to Emitter Voltage	V_{BE}	$V_{CE}=12V$ $I_C=2.0mA$		0.67	0.75	V
Transition Frequency	f_T	$V_{CE}=12V$ $I_C=2.0mA$		230		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$ $f=1.0MHz$ $I_E=0$		1.8	3.5	pF
Noise Figure	NF	$V_{CE}=6.0V$ $f=1.0KHz$ $I_C=0.1mA$ $R_g=500$		4.0	10	dB
Small Signal Input Impedance	h_{ie}	$V_{CE}=5.0V$ $f=270Hz$ $I_C=0.1mA$		16.5		K
Small Signal Voltage Feedback Ratio	h_{re}	$V_{CE}=5.0V$ $f=270Hz$ $I_C=0.1mA$		70		$\times 10^{-6}$
Small Signal Current Feedback Ratio	h_{fe}	$V_{CE}=5.0V$ $f=270Hz$ $I_C=0.1mA$		130		
Small Signal Output Admittance	h_{oe}	$V_{CE}=5.0V$ $f=270Hz$ $I_C=0.1mA$		11		μS

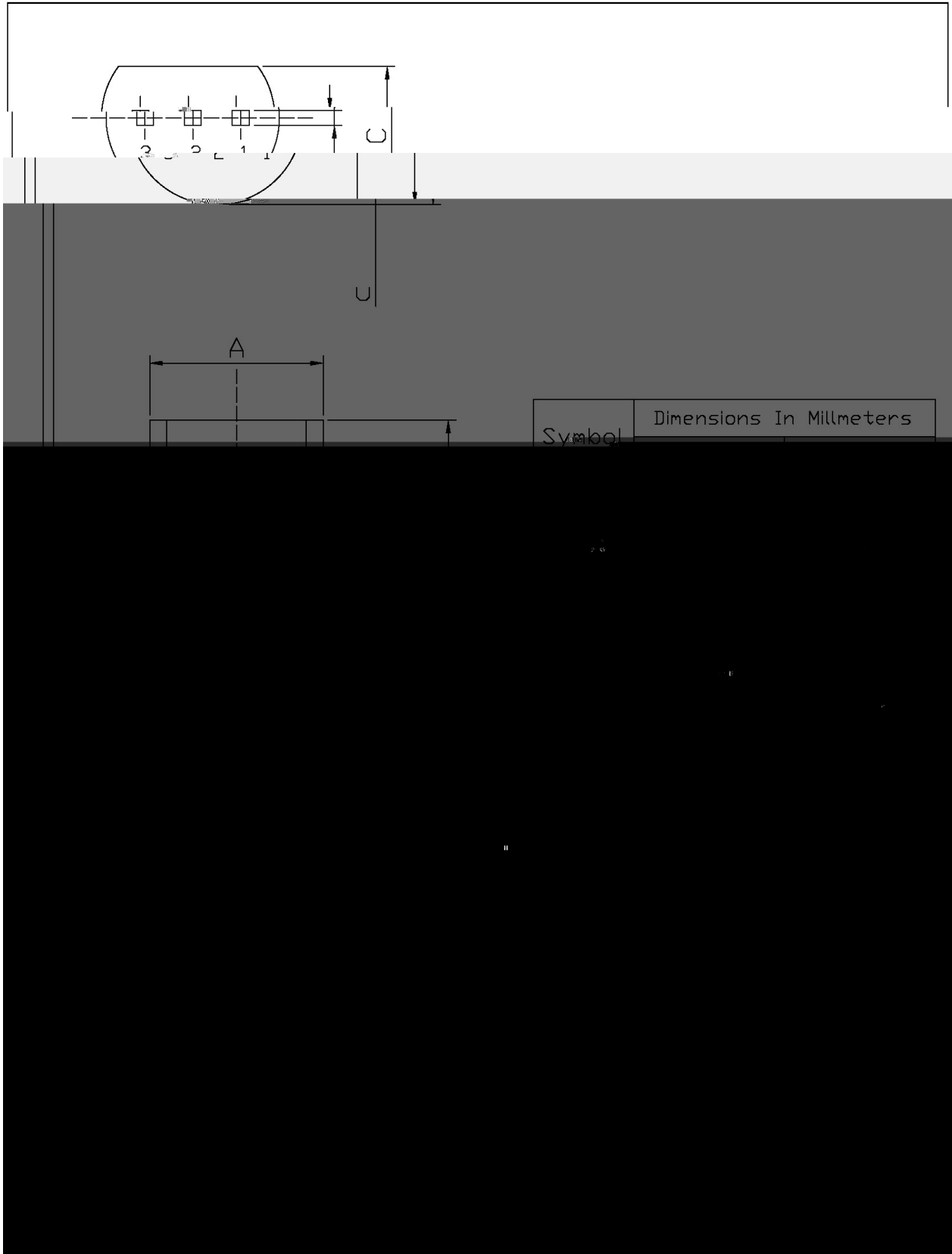
/ Electrical Characteristic Curve



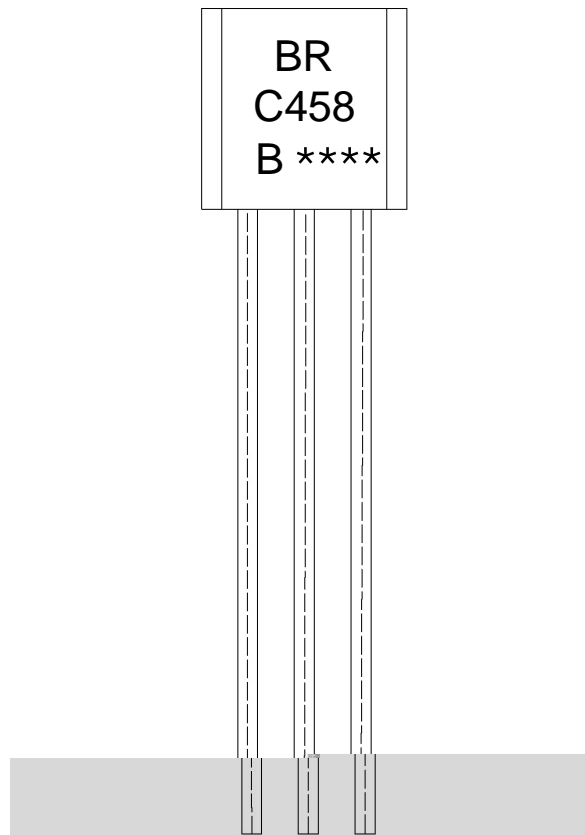
/ Package Dimensions

T0-92

Unit: mm



/ Marking Instructions



BR:

C458

B: h_{FE}

Note:

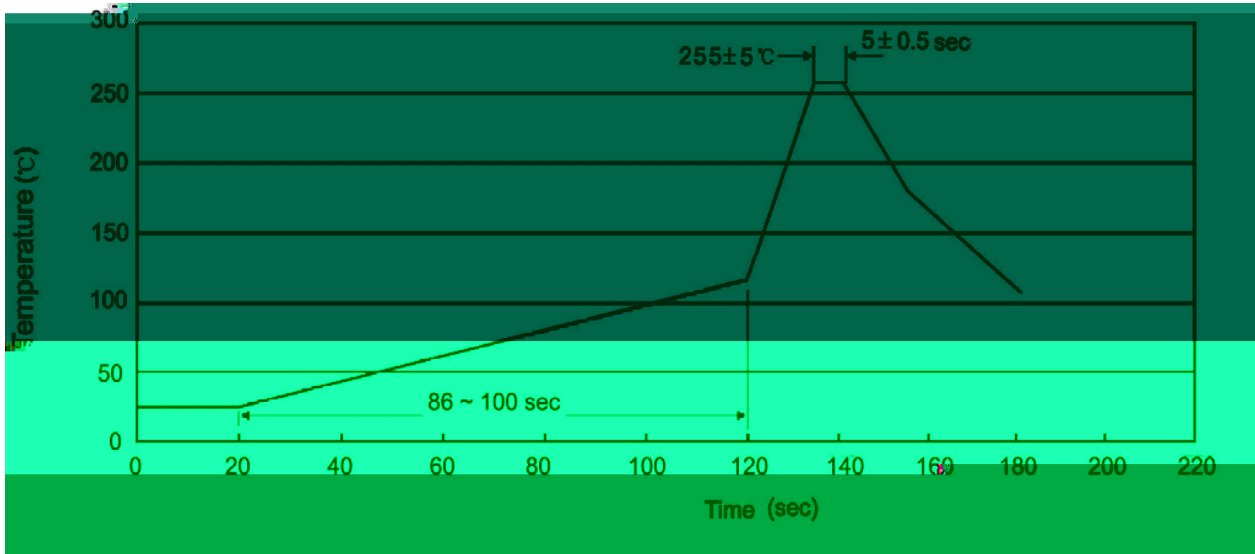
BR: Company Code.

C458: Product Type.

B: 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