

--	--	--	--

# 2N4401

Rev.G Dec.-2021

## 描述 / Descriptions

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

## 特征 / Features

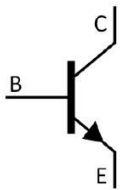
High current, Low voltage.

## 用途 / Applications

$I_C$           500mA

Medium power amplifier and switch requiring collector currents up to 500 mA.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN1    Collector          PIN 2    Base          PIN 3    Emitter

## 放大及印章代码 / $h_{FE}$ Classifications & Marking

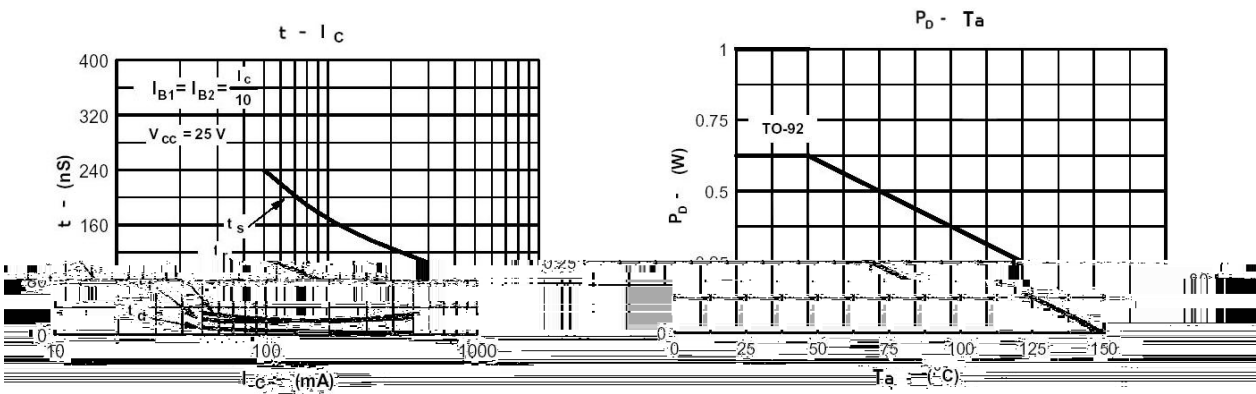
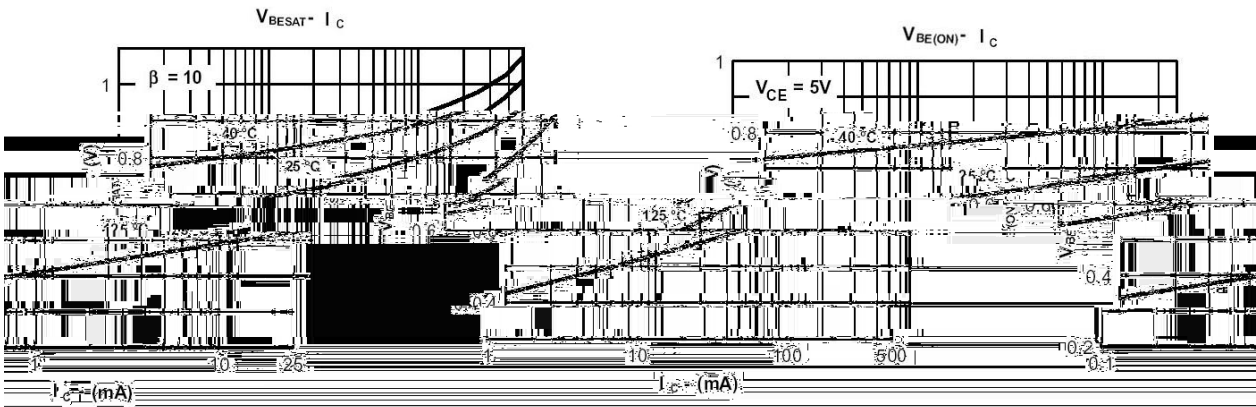
See Marking Instructions.



Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	60	V
Collector to Emitter Voltage	$V_{CEO}$	40	V
Emitter to Base Voltage	$V_{EBO}$	6.0	V
Collector Current - Continuous	$I_C$	600	mA
Collector Power Dissipation	$P_C$	625	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=0.1mA$ $I_E=0$	60			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1.0mA$ $I_B=0$	40			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=0.1mA$ $I_C=0$	6.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=60V$ $I_E=0$			50	nA
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=6.0V$ $I_C=0$			50	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=1.0V$ $I_C=150mA$	100		300	
	$h_{FE(2)}$	$V_{CE}=2.0V$ $I_C=500mA$	40			
	$h_{FE(3)}$	$V_{CE}=1.0V$ $I_C=10mA$	80			
	$h_{FE(4)}$	$V_{CE}=1.0V$ $I_C=1.0mA$	40			
	$h_{FE(5)}$	$V_{CE}=1.0V$ $I_C=0.1mA$	20			
Collector to Emitter Saturation Voltage	$V_{CE(sat) (1)}$	$I_C=150mA$ $I_B=15mA$			0.4	V
	$V_{CE(sat) (2)}$	$I_C=500mA$ $I_B=50mA$			0.75	V
Base to Emitter Saturation Voltage	$V_{BE(sat) (1)}$	$I_C=150mA$ $I_B=15mA$	0.75		0.95	V
	$V_{BE(sat) (2)}$	$I_C=500mA$ $I_B=50mA$			1.2	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=10V$ $f=100MHz$ $I_C=20mA$	250			MHz
Delay Time	$t_d$	$V_{CC}=30V$ $I_C$				

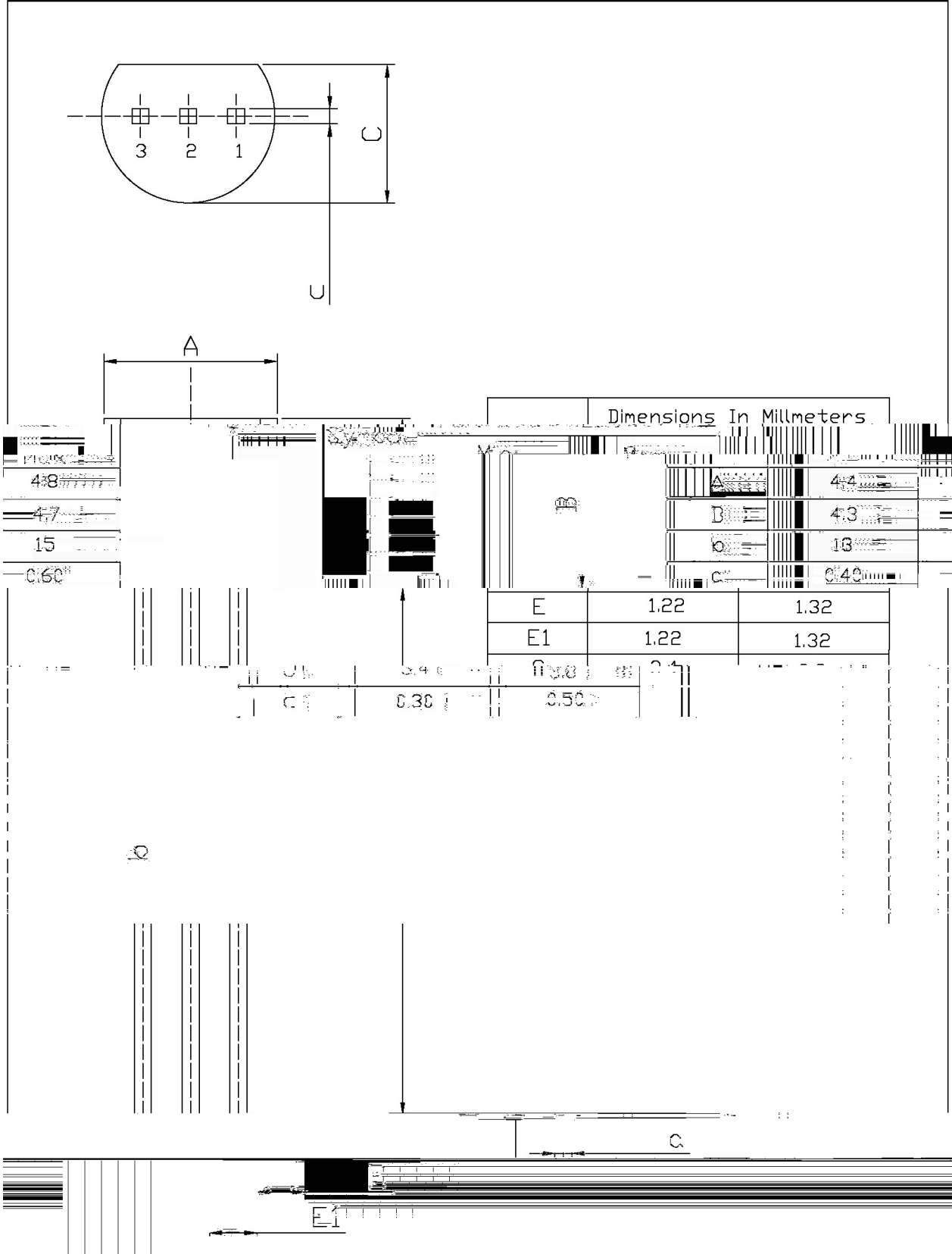
电参数曲线图 / Electrical Characteristic Curve



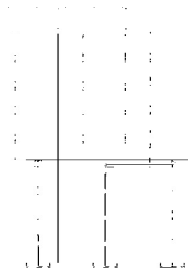
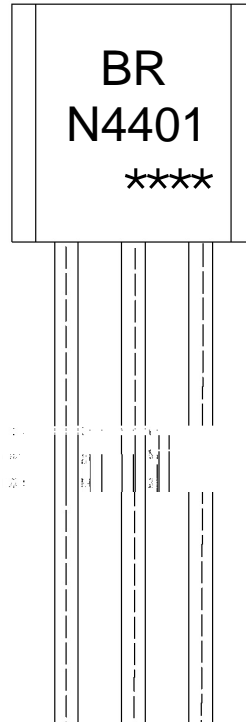
外形尺寸图 / Package Dimensions

TO-92

Unit: mm



印章说明 / Marking Instructions



BR

N4401

\*\*\*\*

Note:

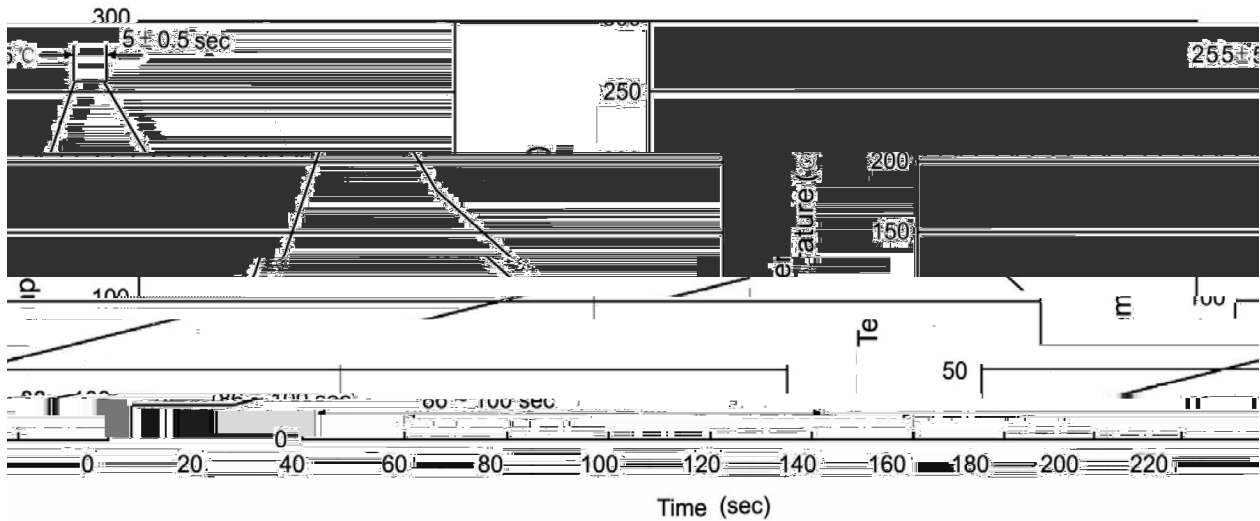
BR: Company Code.

N4401: Product Type.

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



**波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)**



**Note:**

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

**耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions**

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

**包装规格 / 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
T0-92	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
T0-92	3,000	1	120	10	30,000	328×230×42	小箱 480×346×235, 大箱 547×407×268

**使用说明 / Notices**