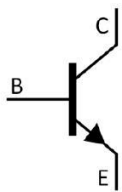


TO-92 NPN Silicon NPN transistor in a TO-92 Plastic Package.

Low noise figure.

High frequency low noise amplifier application, HF band amplifier application.



PIN1 Base PIN 2

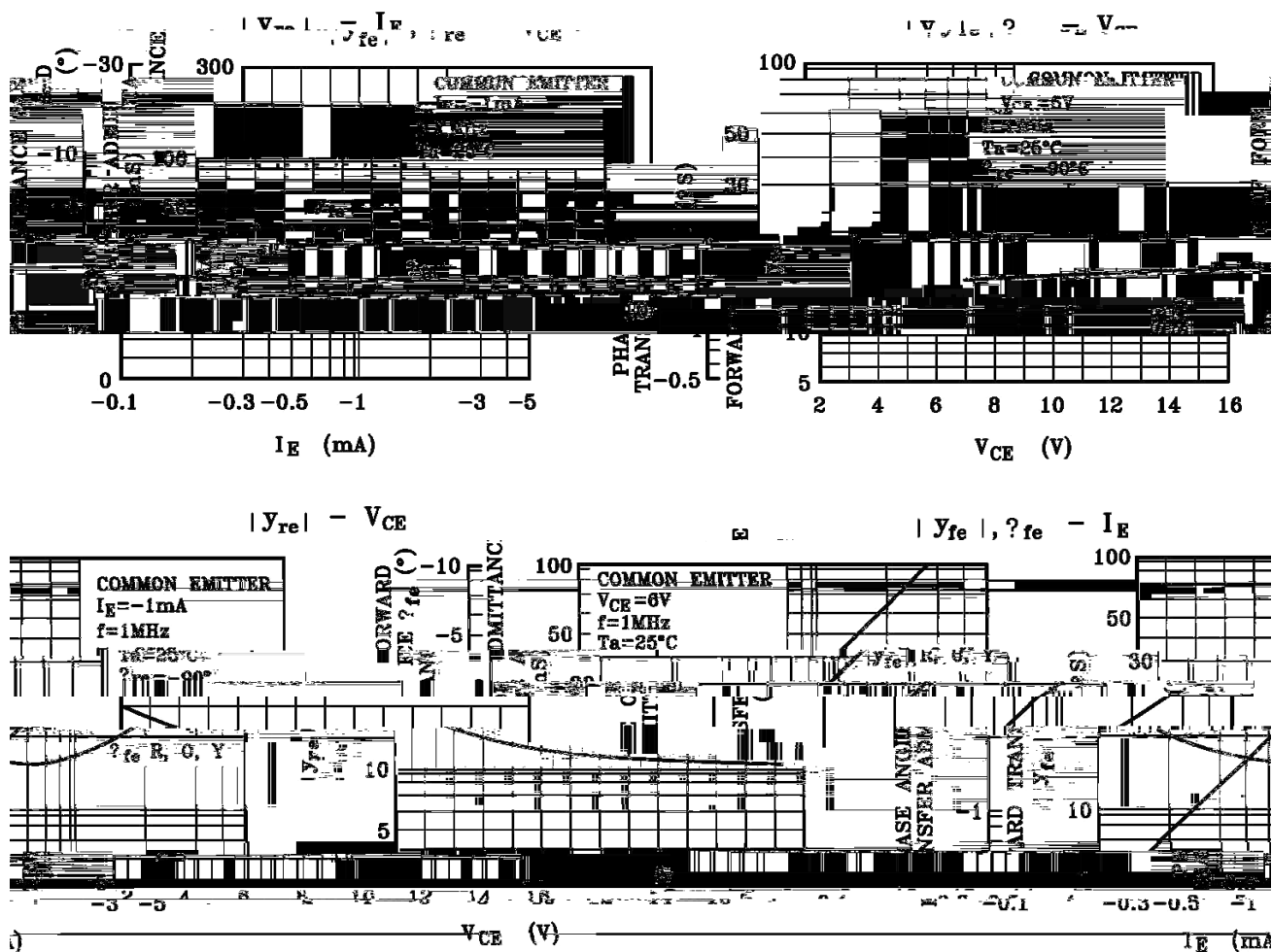
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	35	V
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Base Voltage	V_{EBO}	4.0	V
Collector Current - Continuous	I_C	100	mA
Emitter Current - Continuous	I_E	-100	mA
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 Cut-Off Current	I_{CBO}	$V_{CB}=20V$ $I_E=0$			0.1	A
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=2.0V$ $I_C=0$			1.0	A
DC Current Gain	h_{FE}	$V_{CE}=12V$ $I_C=2.0mA$	40		240	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA$ $I_B=1.0mA$			0.4	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10mA$ $I_B=1.0mA$			1.0	V
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=2.0mA$	80	120		MHz
Reverse Transfer Capacitance	C_{re}	$V_{CB}=10V$ $f=1.0MHz$ $I_E=0$		2.2	3.0	pF
Noise Figure	NF	$V_{CE}=10V$ $f=1.0KHz$ $I_E=-1.0mA$ $R_g=50$		2.0	3.5	dB
Collector- Base Time Constant	$C_c.r_{bb'}$	$V_{CE}=10V$ $f=30MHz$ $I_E=-1.0mA$		30	50	pS

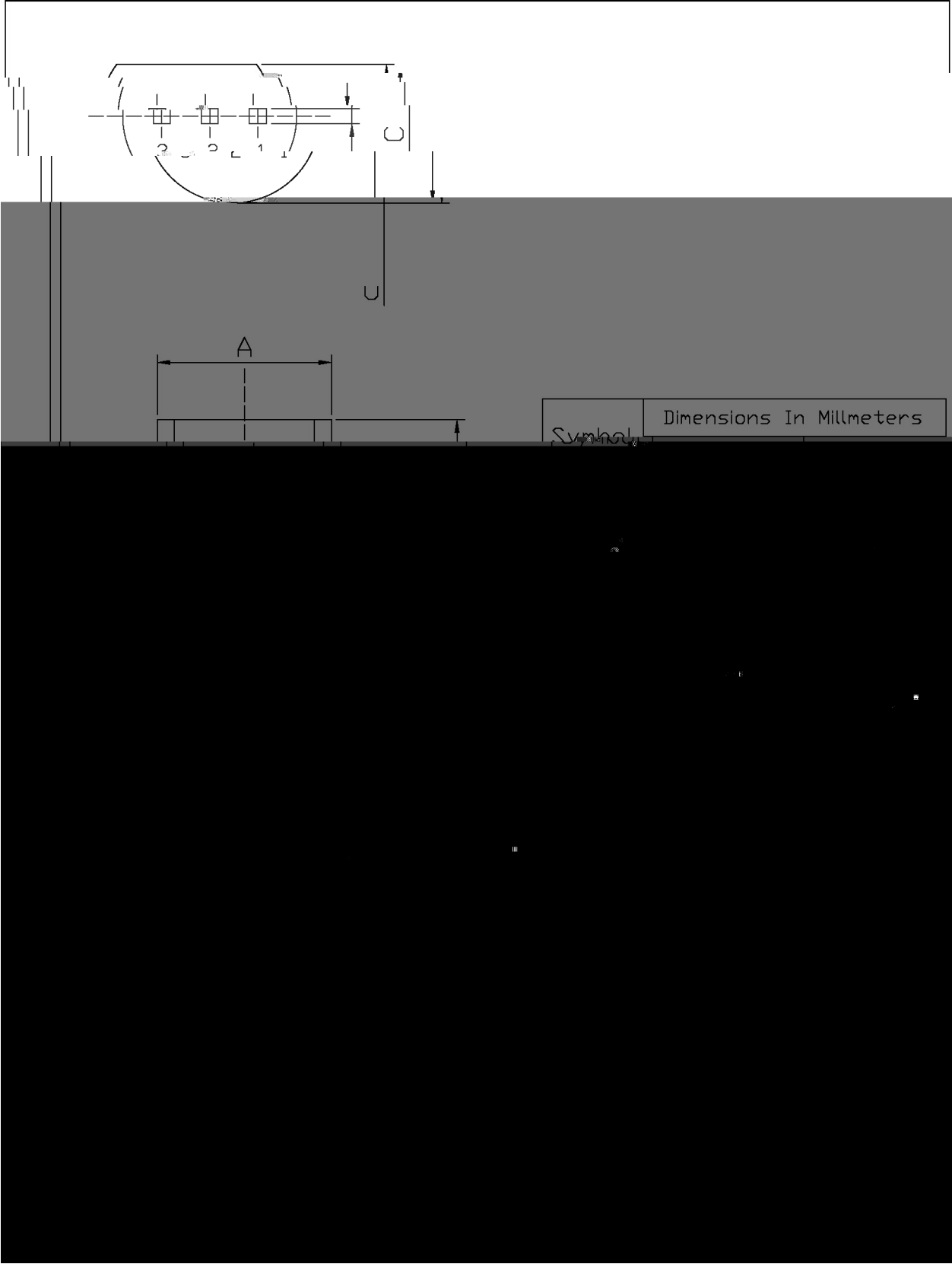
/ Electrical Characteristic Curve



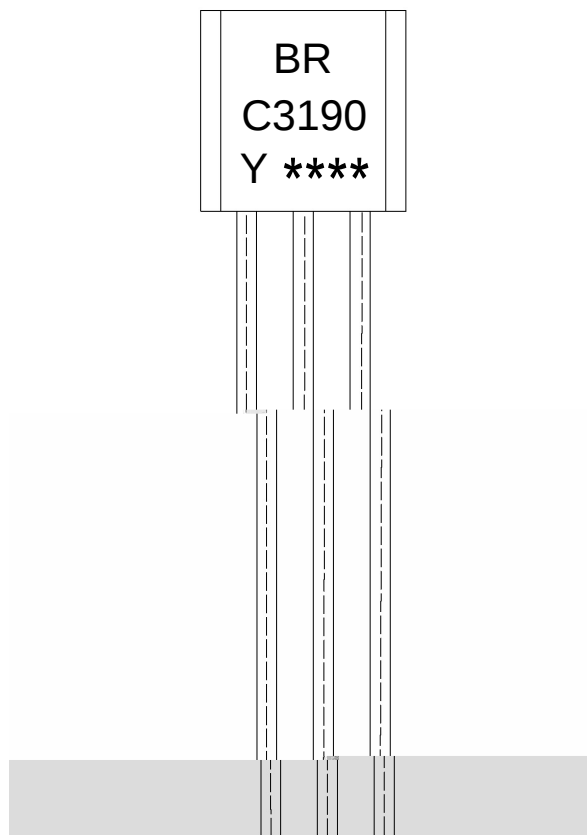
/ Package Dimensions

T0-92

Unit: mm



/ Marking Instructions



BR:

C3190

Y: h_{FE}

Note:

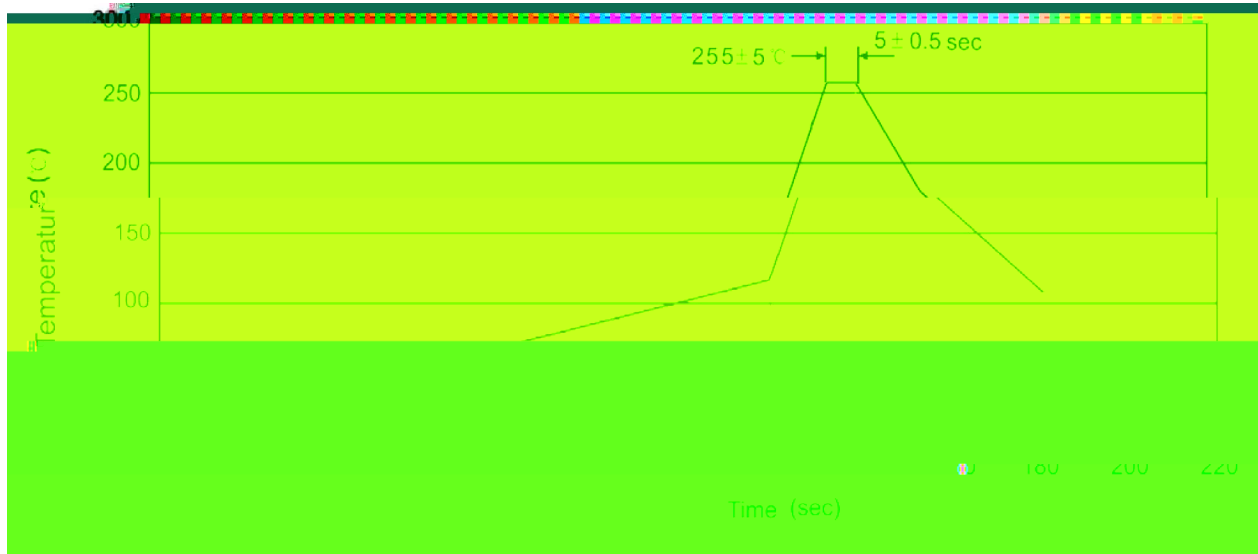
BR: Company Code.

C3190: Product Type.

Y: 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	Units					Dimension (unit mm3)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
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	Units					Dimension (unit mm3)	
	Units/tape /	Tape/Inner Box /	Rows/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Inner Box	Outer Box
TO-92	3,000	1	120	10	30,000	328×230×42	480×346×235 547×407×268

/ **Notices**