

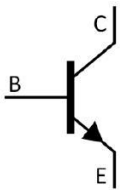
/ Descriptions

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

/ Features

Low current, Low voltage, HF Product.

General purpose amplifier.



PIN1 Collector PIN 2 Base PIN 3 Emitter

/ h_{FE} Classifications & Marking

See Marking Instructions.

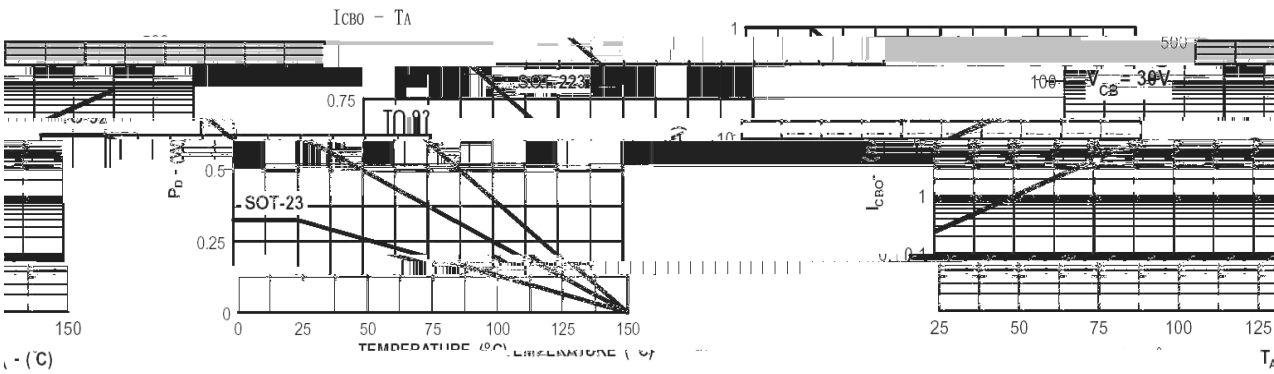
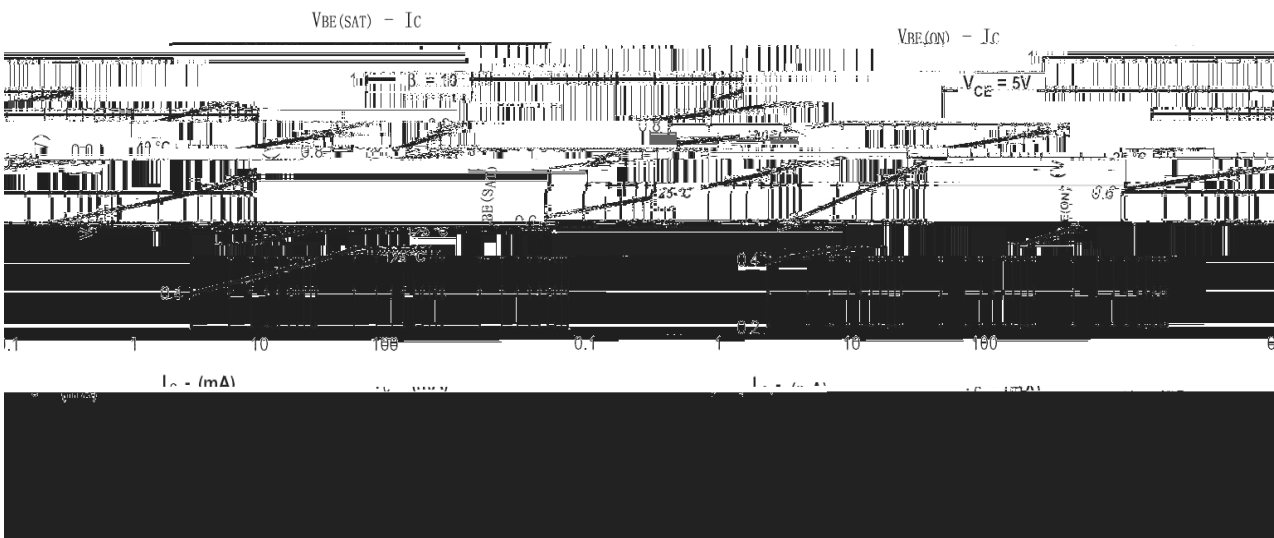
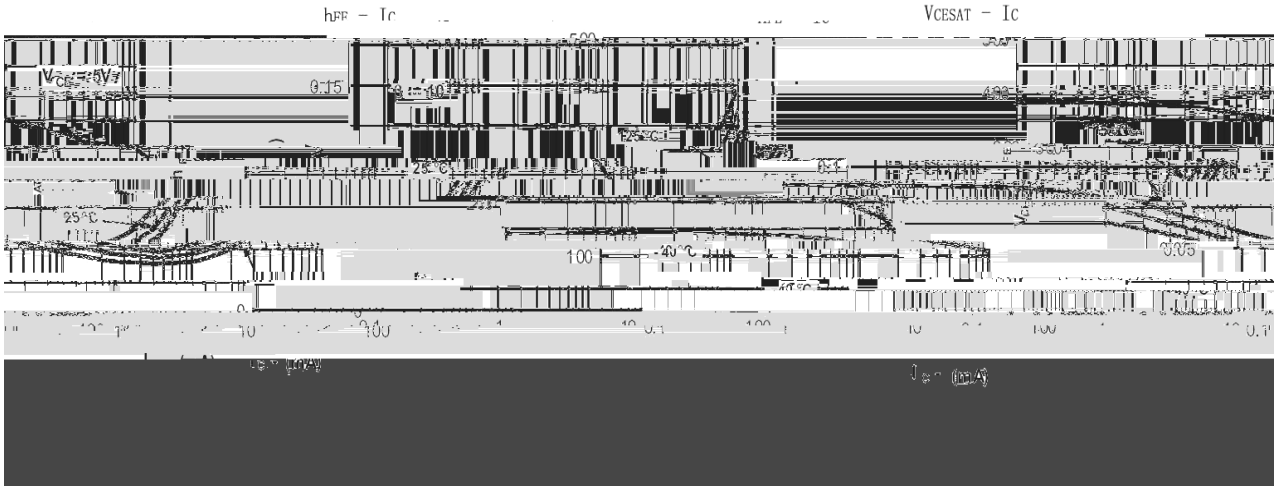
/ Absolute Maximum Ratings(Ta=25)

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	200	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 to Base Breakdown Voltage	V_{CBO}	$I_C=10\text{ A}$ $I_E=0$	60			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0\text{mA}$ $I_B=0$	40			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10\text{ A}$ $I_C=0$	6.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=50\text{V}$ $I_E=0$			0.05	A
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5.0\text{V}$ $I_C=0$			0.05	A
DC Current Gain	$h_{FE(1)}$	$V_{CE}=1.0\text{V}$ $I_C=10\text{mA}$	100		300	
	$h_{FE(2)}$	$V_{CE}=1.0\text{V}$ $I_C=100\text{mA}$	30			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50\text{mA}$ $I_B=5.0\text{mA}$			0.3	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=50\text{mA}$ $I_B=5.0\text{mA}$			0.95	V
Current Gain Bandwidth Product	f_T	$I_C=10\text{mA}$ $V_{CE}=20\text{V}$ $f=100\text{MHz}$	300			MHz
Output Capacitance	C_{ob}	$V_{CB}=5.0\text{V}$ $I_E=0$ $f=1.0\text{MHz}$			4.0	pF
Turn On Time	T_{on}	$V_{CC}=3.0\text{V}$ $V_{BE}=0.5\text{V}$ $I_C=10\text{mA}$ $I_{B1}=1.0\text{mA}$			0.07	s
Turn Off Time	T_{off}	$V_{CC}=3.0\text{V}$ $I_C=10\text{mA}$ $I_{B1}=-I_{B2}=1.0\text{mA}$			0.25	s

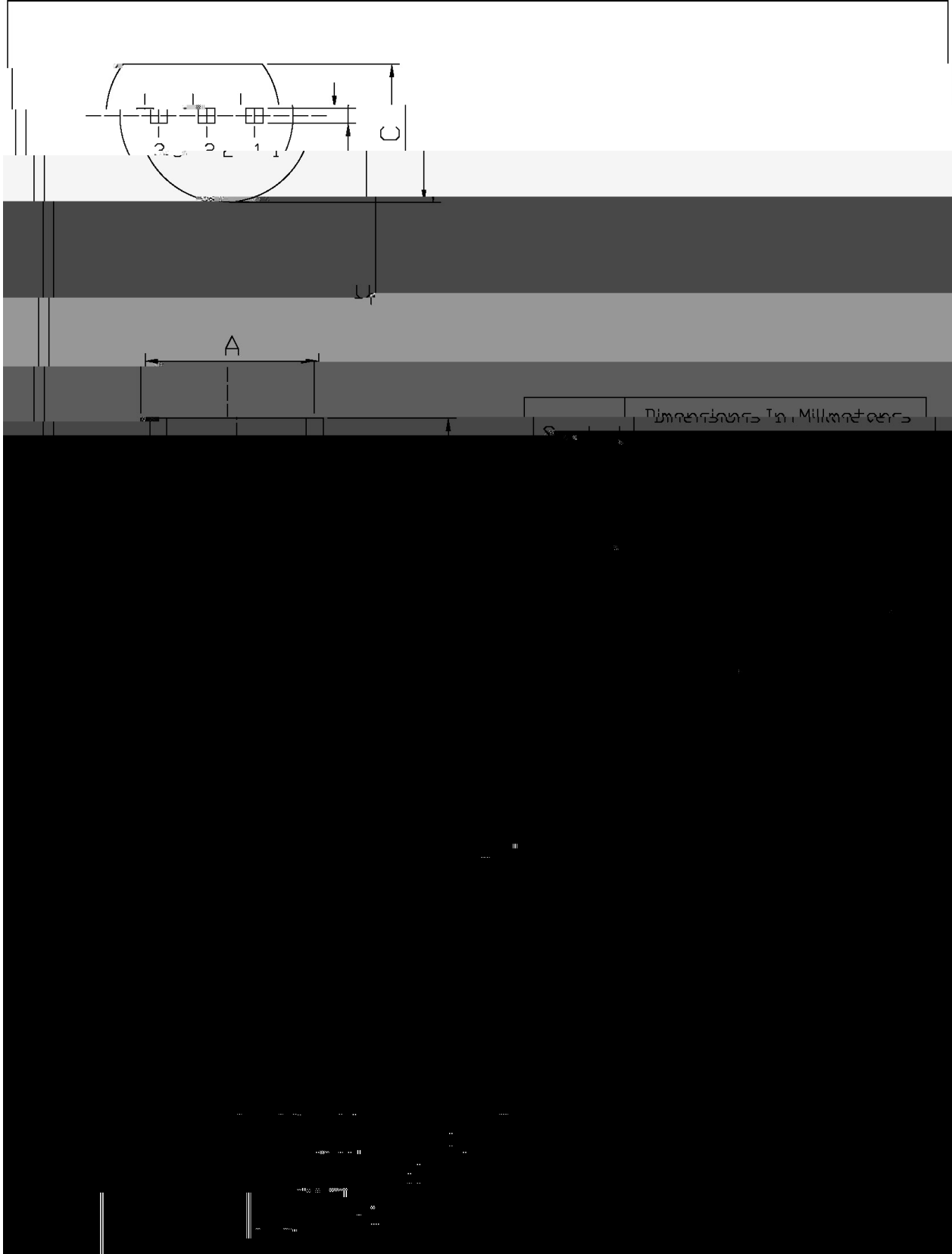
/ Electrical Characteristic Curve



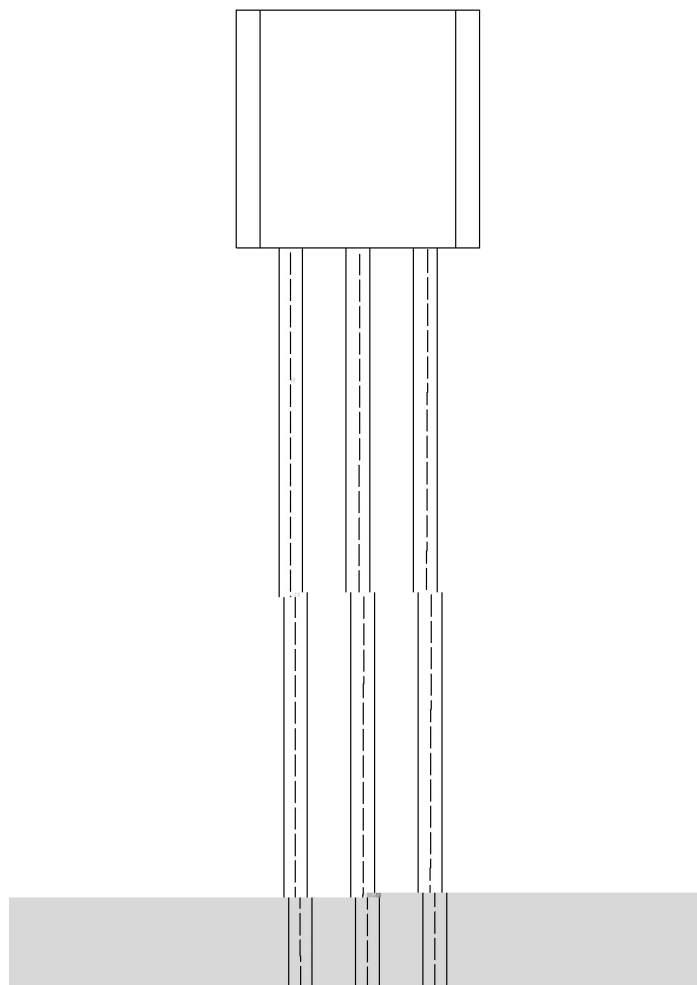
/ Package Dimensions

TO-92

Unit: mm



/ Marking Instructions

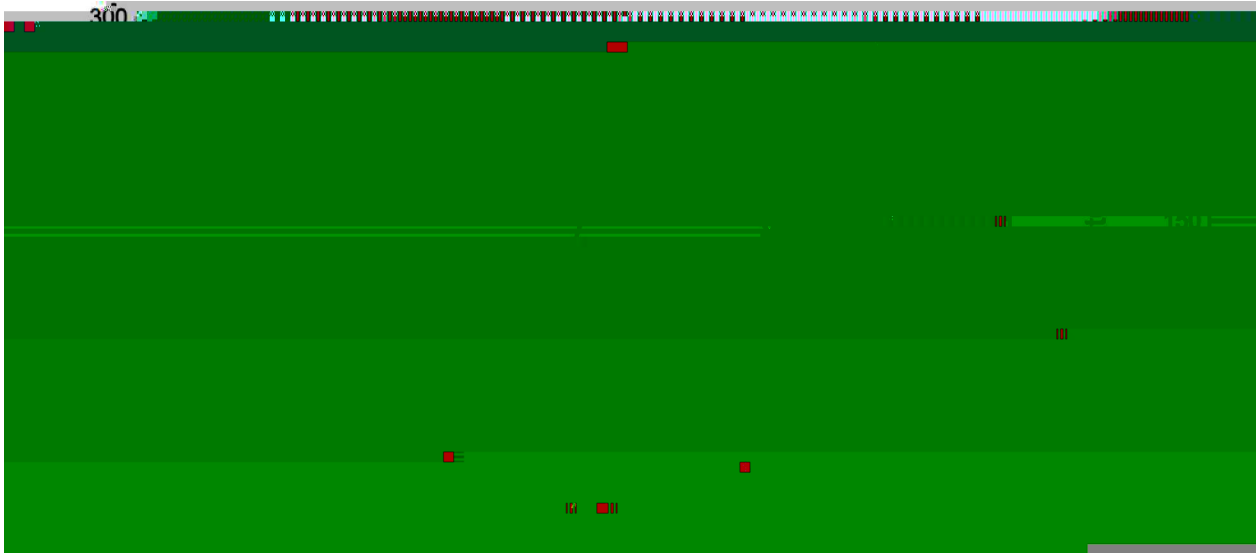


BR

G:

A

() / Temperature Profile for Dip Soldering(Pb-Free)



1	25	150	60	90sec;	Note:	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. $T_{f0.56Db} \geq 2f_{Tj}/TT2$ 1 $T_{f2} = 0$ TD-0.0005;