

/ Descriptions

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

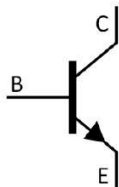
/ Features

P_C I_C h_{FE} 3CG9012
High P_C and I_C , excellent h_{FE} linearity, complementary pair with 3DG 9012.

/ Applications

Amplifier of portable radios in class B push-pull operation.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	D	E	F	G	H	I
h_{FE} Range	64~91	78~112	96~135	112~166	144~202	188~276

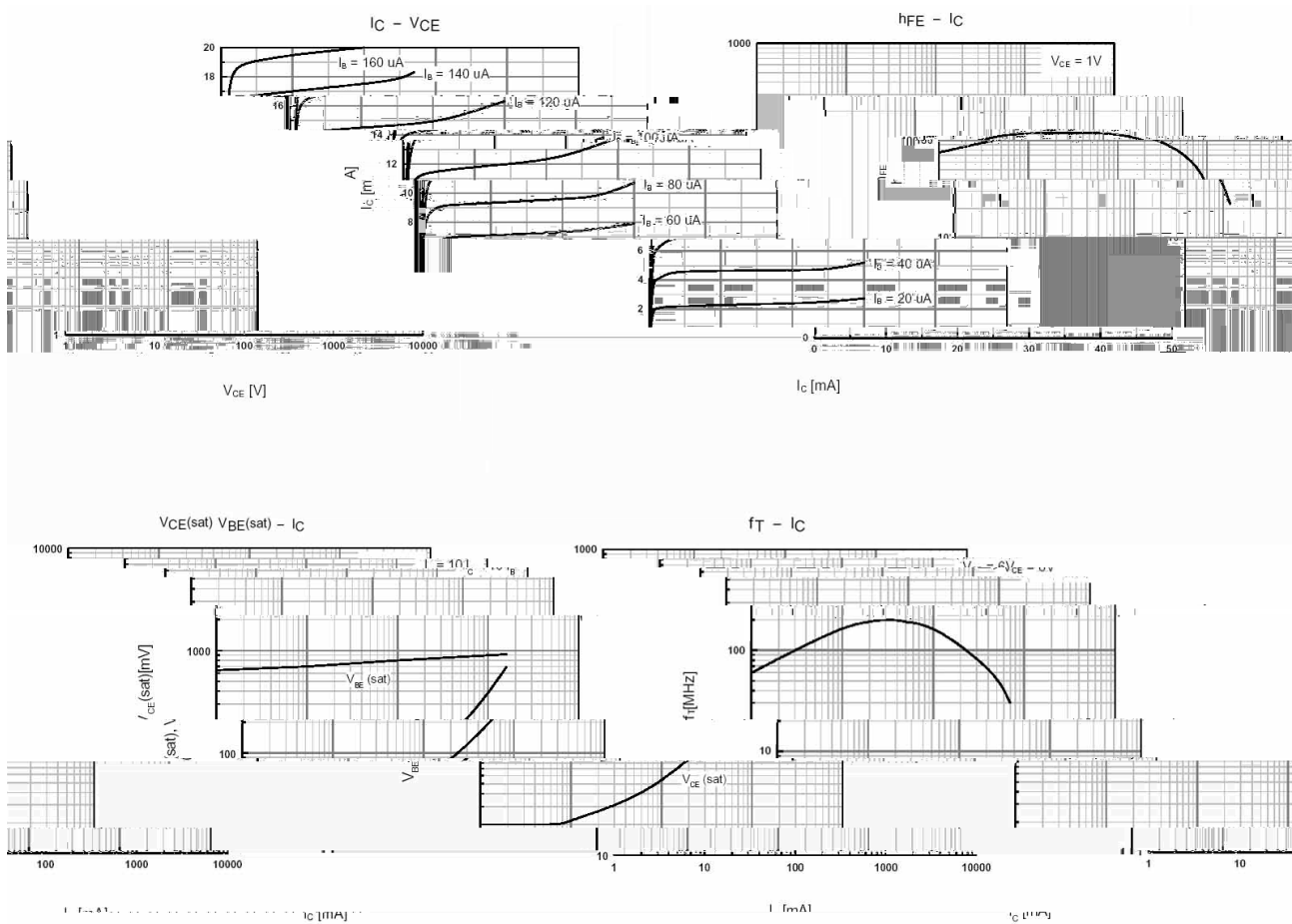
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	500	mA
Base Current - Continuous	I_B	100	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=0.1mA$ $I_E=0$	40			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $I_B=0$	20			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=0.1mA$ $I_C=0$	5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=25V$ $I_E=0$			0.1	A
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=3.0V$ $I_C=0$			0.1	A
DC Current Gain	$h_{FE(1)}$	$V_{CE}=1.0V$ $I_C=50mA$	64		276	
	$h_{FE(2)}$	$V_{CE}=1.0V$ $I_C=500mA$	40			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA$ $I_B=50mA$		0.16	0.6	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500mA$ $I_B=50mA$		0.91	1.2	V
Base to Emitter Voltage	V_{BE}	$V_{CE}=1.0V$ $I_C=10mA$		0.67	0.7	V

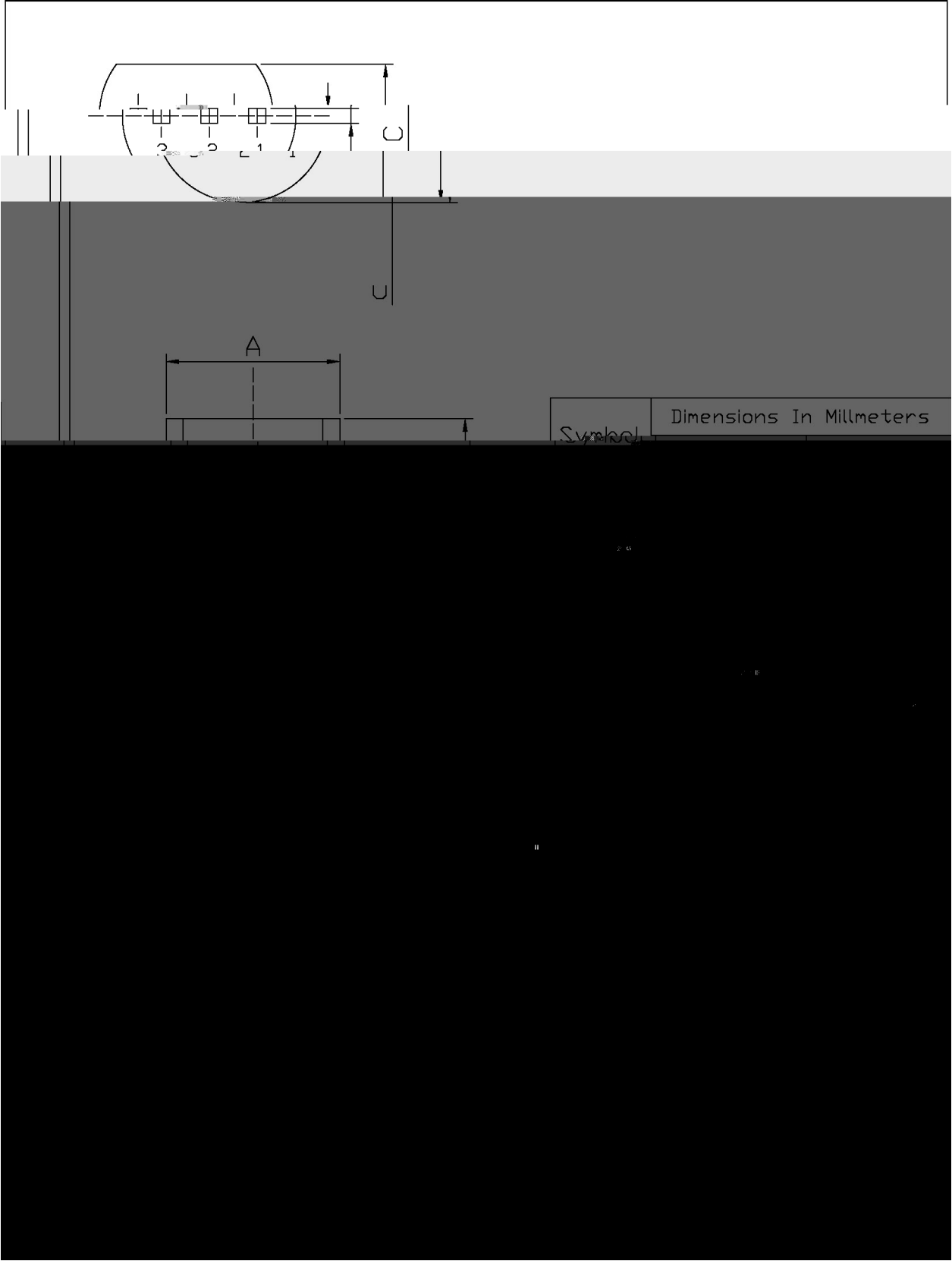
/ Electrical Characteristic Curve



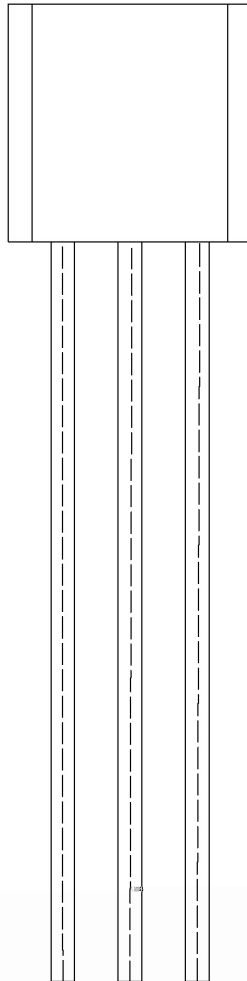
/ Package Dimensions

TO-92

Unit: mm



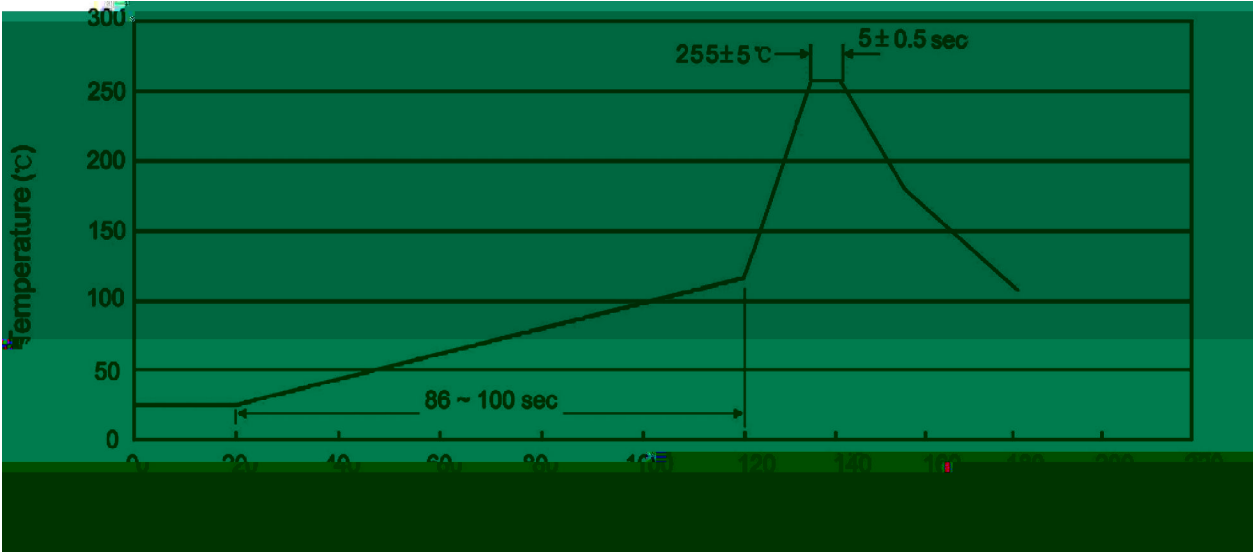
/ Marking Instructions



9013

D: h_{FE}

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



Note:

- 1

25 150

60 90sec;
- 1.Preheating:25~150 , Time:60~5.29p[, Ts~150)]TJ/TT7 1