

/ Descriptions

SOT-23 NPN Silicon NPN transistor in a SOT-23 Plastic Package.

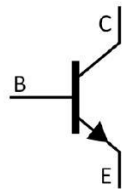
/ Features

P_C , h_{FE} , 9012M
High P_C and h_{FE} , excellent h_{FE} linearity, complementary pair with 9012M,HF Product.

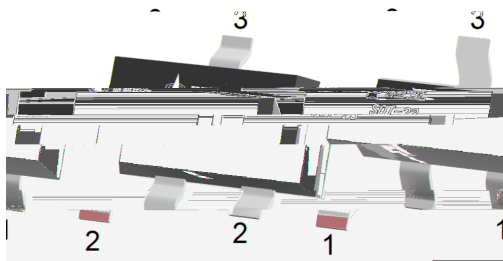
/ Applications

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

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Emitter PIN 3 Collector

/ 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
Marking	HJ3D	HJ3E	HJ3F	HJ3G	HJ3H	HJ3I

/ 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	I_C	500	mA
Base Current	I_B	100	mA
Collector Power Dissipation	P_C	300	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}	$I_C=0.1mA$ $I_E=0$	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	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=3.0V$ $I_C=0$			0.1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=1.0V$ $I_C=50mA$	150		300	
	$h_{FE(2)}$	$V_{CE}=1.0V$ $I_C=500mA$	40			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA$ $I_B=50mA$		0.16	0.6	V
Base-Emitter saturation Voltage	$V_{BE(sat)}$	$I_C=500mA$ $I_B=50mA$		0.91	1.2	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=1.0V$ $I_C=10mA$		0.67	0.7	V
Transition frequency	f_T	$V_{CE}=6V$ $I_C=20mA$,	150			MHz

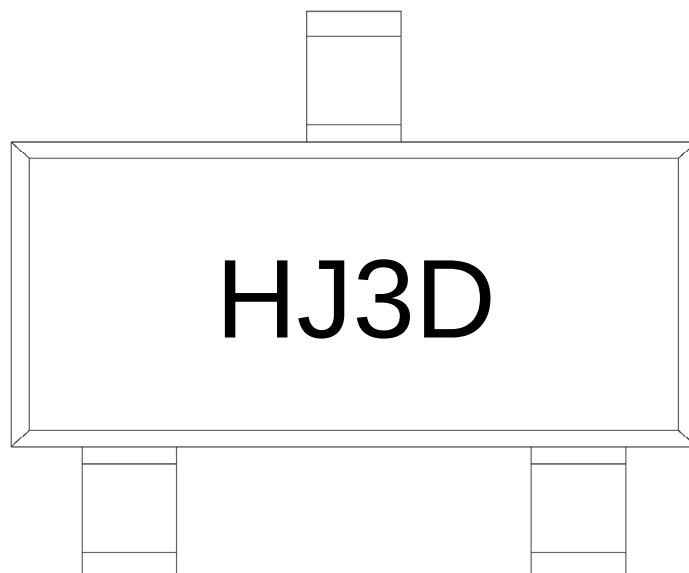
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



H

J3

D h_{FE}

Note:

H Company Code

J3 Product Type Code

D h_{FE} Classifications Symbol Code

() / Temperature Profile for IR Reflow Soldering(Pb-Free)

Note:

- | | | | |
|---|---------|-----------|---|
| 1 | 150 180 | 60 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | 5±0.5sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | 2 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box