

/ Descriptions

TO-251	NPN	Silicon NPN transistor in a TO-251 Plastic Package.
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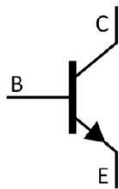
/ Features

Low $V_{CE(sat)}$, complementary to KTA1040I.

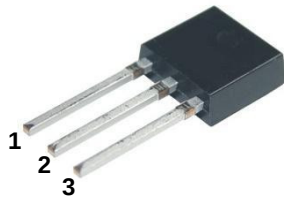
/ Applications

General purpose amplifier for surface mount applications.

/ Equivalent Circuit



/ Pinning



PIN1	Base	PIN 2	Collector	PIN 3	Emitter
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/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	Y	GR
h_{FE} Range	100~200	150~300

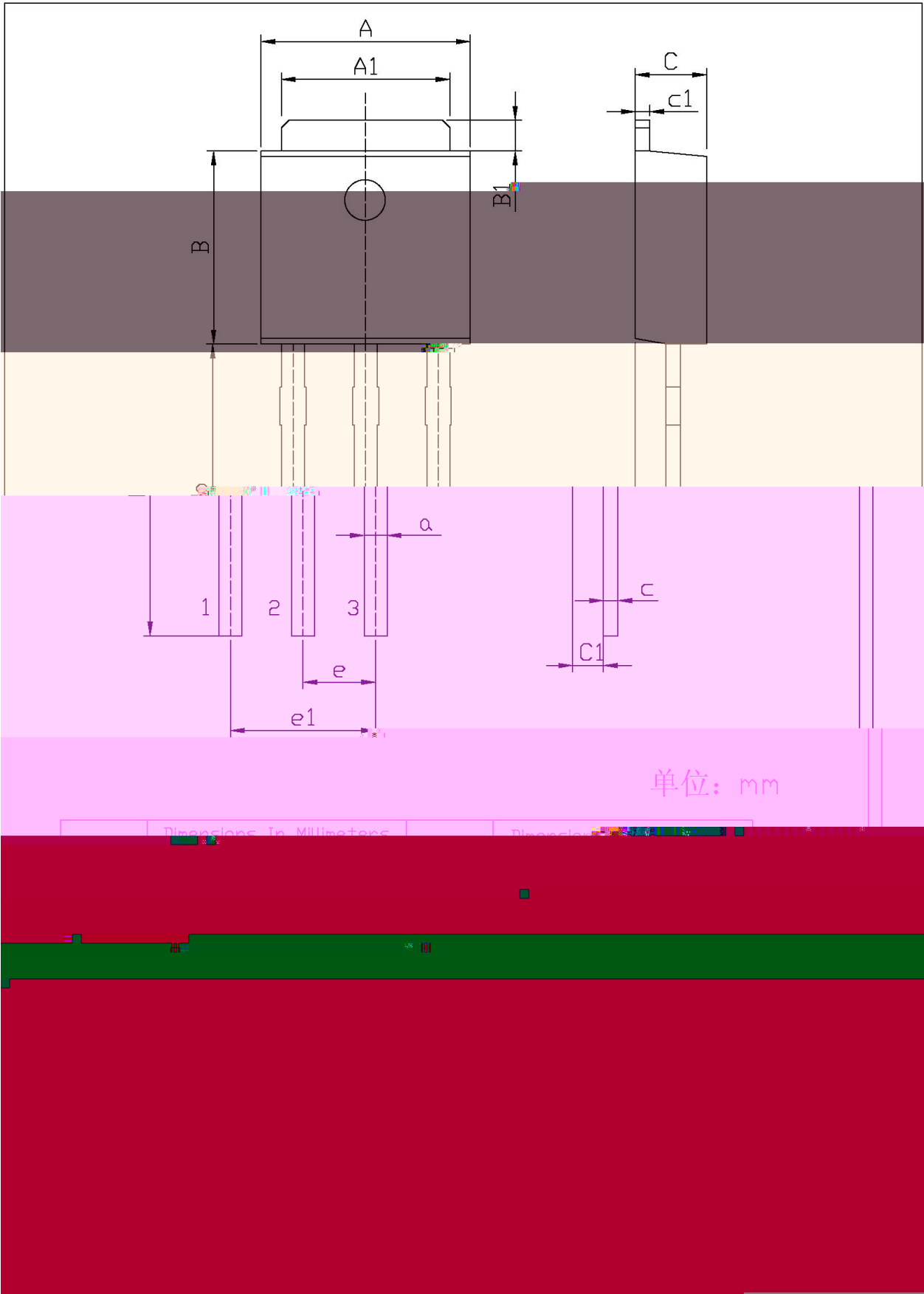
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	60	V
Emitter to Base Voltage	V_{EBO}	7.0	V
Collector Current - Continuous	I_C	3.0	A
Base Current - Continuous	I_B	0.5	A
Collector Power Dissipation	P_C	1.0	W
Collector Power Dissipation	$P_C(TC=25)$	20	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55~150	

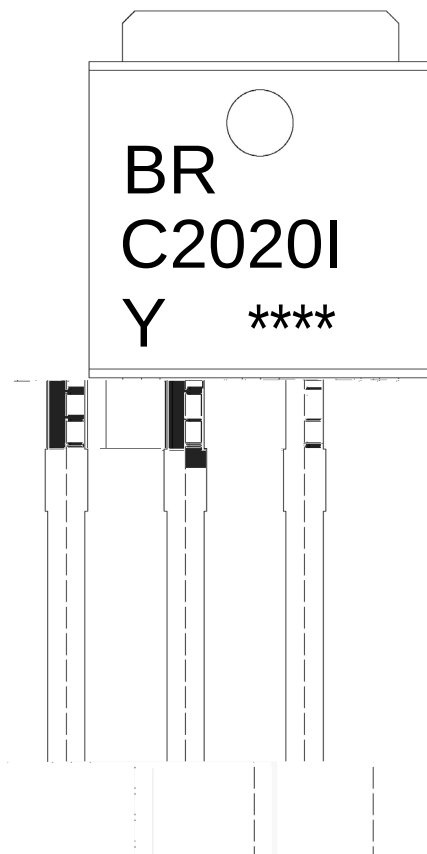
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=50mA$ $I_B=0$	60			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=60V$ $I_E=0$			100	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=7.0V$ $I_C=0$			100	μA
DC Current Gain	h_{FE}	$V_{CE}=5.0V$ $I_C=0.5A$	100		300	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2.0A$ $I_B=0.2A$		0.5	1.0	V
Base to Emitter Voltage	V_{BE}	$V_{CE}=5.0V$ $I_C=0.5A$		0.7	1.0	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $I_C=0.5A$		30		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10V$ $I_E=0$ $f=1.0MHz$		35		pF
Turn-On Time	t_{on}	$10I_{B1}=-10I_{B2}=I_C=2.0A,$ $V_{CC}=30V$		0.65		μs
Storage Time	t_{stg}			1.3		
Fall Time	t_f			0.65		

I Package Dimensions



/ Marking Instructions



BR

C2020I

Y: h_{FE}

Note:

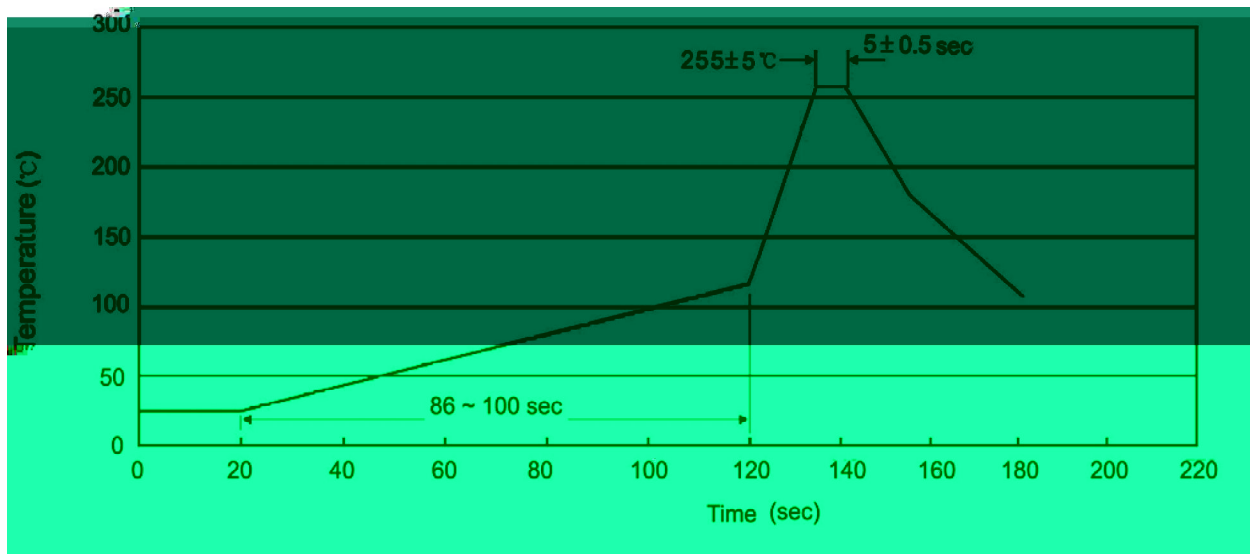
BR: Company Code

C2020I: Product Type.

Y: h_{FE} Classifications Symbol

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

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



Note:

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|---|-------|-----|-----------|---|--------------------------------------|
| 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 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	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
TO-251	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices