

/ Descriptions

TO-220 NPN Silicon NPN transistor in a TO-220 Plastic Package.

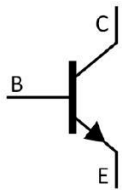
/ Features

low collector saturation voltage, fast switching speed, wide base reverse-bias SOA.

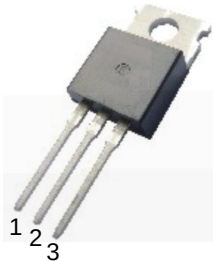
/ Applications

High-speed high-voltage converters, and high-frequency power amplifiers.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

See Marking Instructions.

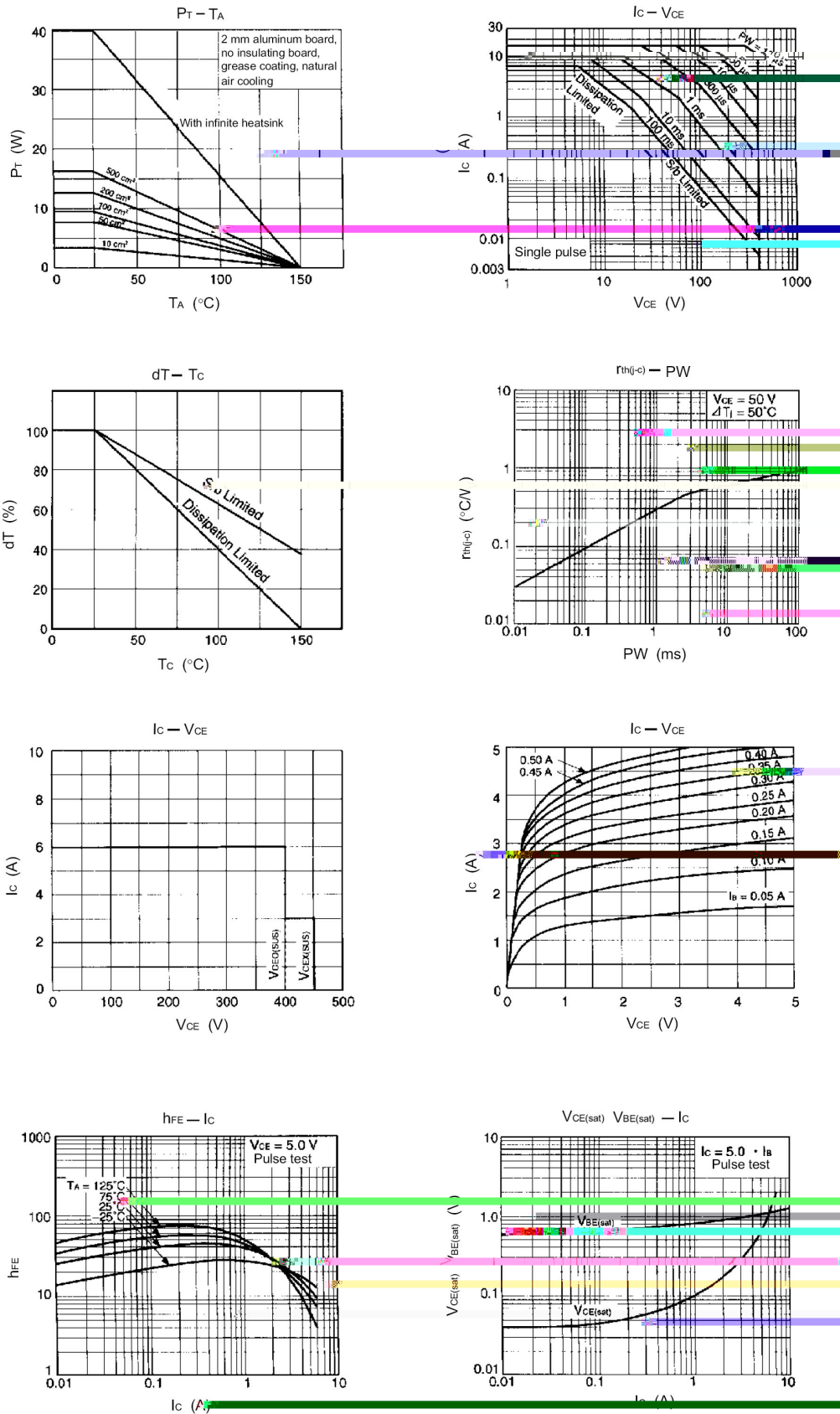
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	500	V
Collector to Emitter Voltage	V_{CEO}	400	V
Emitter to Base Voltage	V_{EBO}	7.0	V
Collector Current - Continuous	I_C	7.0	A
Base Current - Continuous	I_B	3.5	A
Collector Power Dissipation	P_C	1.5	W
	$P_C(T_c=25^{\circ}C)$	40	W
Junction Temperature	T_j	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 150	$^{\circ}C$

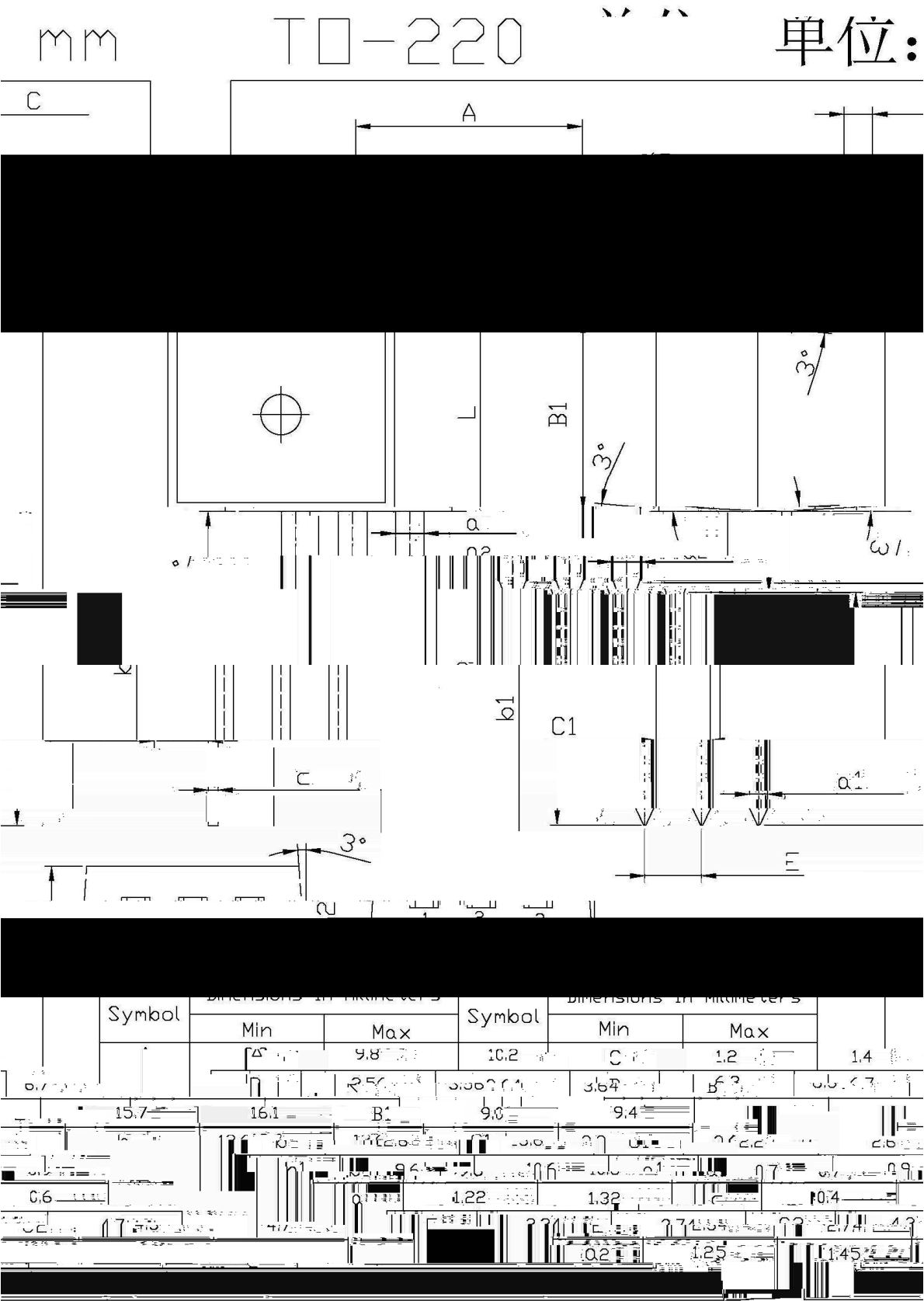
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=3A$ $I_{B1}=0.6A$ $L=1mH$	400			V
Collector to Emitter Breakdown Voltage	$V_{CEX(SUS)1}$	$I_C=3A$ $I_{B1}=-I_{B2}=0.6A$ $V_{BE(OFF)}=-5V$ $L=180\mu H$	450			V
	$V_{CEX(SUS)2}$	$I_C=6A$ $I_{B1}=2A$ $-I_{B2}=0.6A$ $V_{BE(OFF)}=-5V$ $L=180\mu H$	400			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=400V$ $I_E=0$			1.0	μA
Collector Cut-Off Current	I_{CER}	$V_{CE}=400V$ $R_{BE}=51\Omega$ $T_A=125^{\circ}C$			1.0	mA
Collector Cut-Off Current	I_{CEX1}	$V_{CE}=400V$ $R_{BE(OFF)}=-1.5V$			10	μA
	I_{CEX2}	$V_{CE}=400V$ $R_{BE}=-1.5V$ $T_A=125^{\circ}C$			1.0	mA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5V$ $I_C=0$			10	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5V$ $I_C=0.1A$	20		80	
	$h_{FE(2)}$	$V_{CE}=5V$ $I_C=1A$	20		80	
	$h_{FE(3)}$	$V_{CE}=5V$ $I_C=3A$	10			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3A$ $I_B=0.6A$			1.0	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=3A$ $I_B=0.6A$			1.2	V
Turn-On Time	t_{on}	$I_C=3A$ $R_L=50\Omega$ $I_{B1}=-I_{B2}=0.6A$ $V_{CC}=150V$			1.0	μS
Storage Time	t_{stg}	Refer to the test circuit			2.5	μS
Fall Time	t_r				1.0	μS

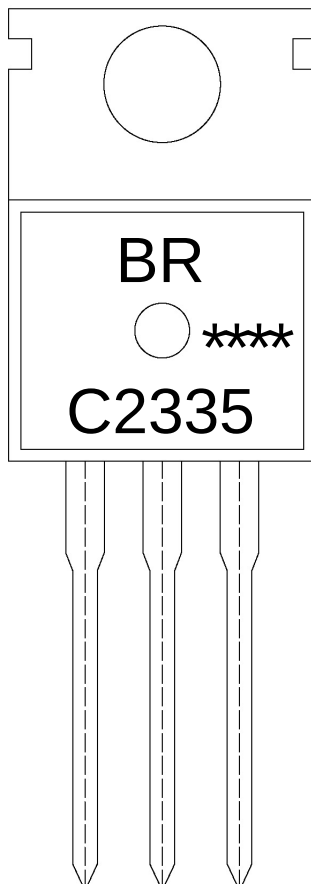
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

C2335

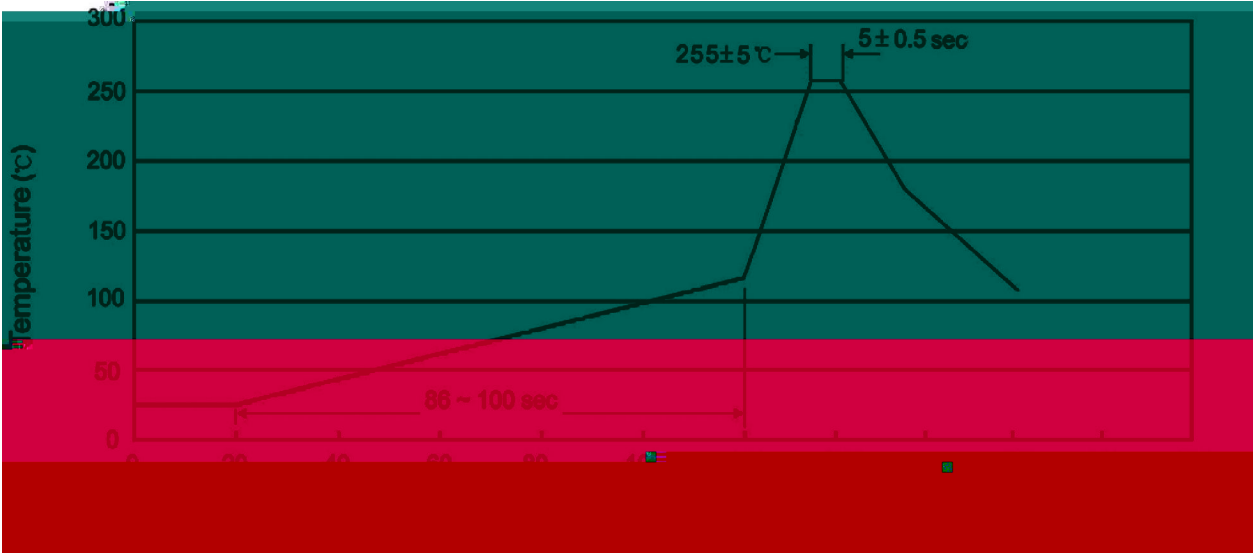
Note:

BR: Company Code

C2335: Product Type.

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

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



Note:

- 1

25 150

60 90sec;
- 2

255±5

5±0.5sec;
- 3

2 10

/sec.
- 1.Preheating:25~150

, Time:60~90sec.
- 2.Peak Temp.:255±5

, Duration:5±0.5sec.
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 mm ³)		
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-220/F	200	10	2,000	5	10,000	135×190	237×172×102	560×245×195

/ TUBE

Package Type

Units

Dimension

(unit mm