

**/ Descriptions**

KF \$) )' = E GE ` Silicon NPN transistor in a TO-220F Plastic Package.

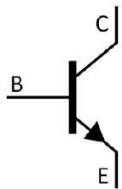
**/ Features**

# # )J9(, --  
Low  $V_{CE(sat)}$ , wide SOA, complements the 2SB1566.

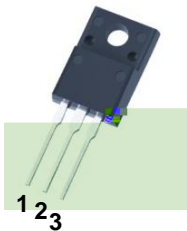
**/ Applications**

#  
Voltage regulator, DC-DC converter and relay driver audio frequency power Amplifier.

**/ Equivalent Circuit**



**/ Pinning**



PIN1 Base      PIN 2 Collector      PIN 3 Emitter

**/  $h_{FE}$  Classifications & Marking**

$h_{FE}$ Classifications Symbol	E	F
$h_{FE}$ Range	100 200	160 320

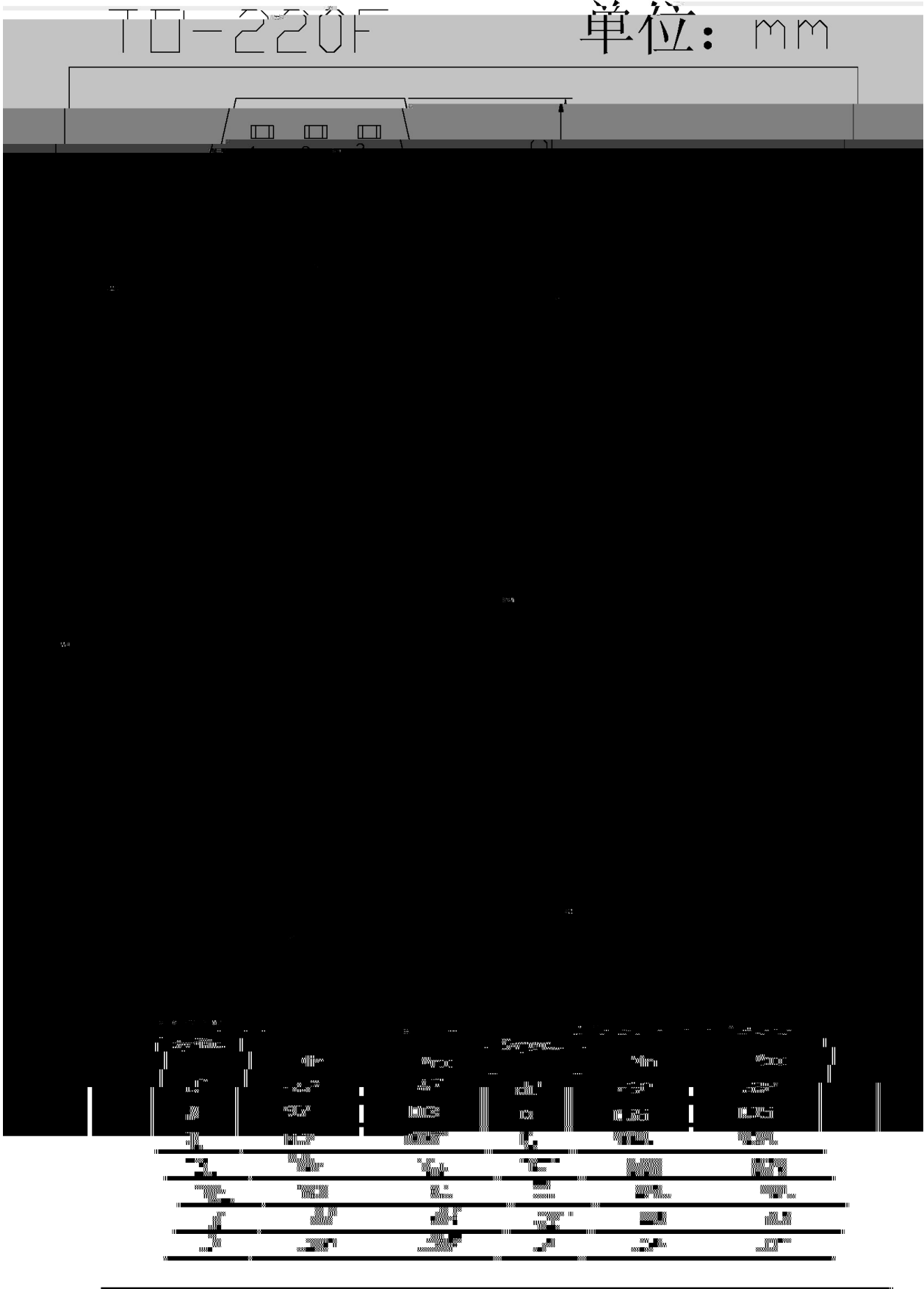
**/ Absolute Maximum Ratings(Ta=25 )**

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	60	V
Collector to Emitter Voltage	$V_{CEO}$	50	V
Emitter to Base Voltage	$V_{EBO}$	5.0	V
Collector Current - Continuous	$I_C$	3.0	A
Collector Power Dissipation	$P_C$	2.0	W
Collector Power Dissipation	$P_C(T_C=25 )$	25	W
Junction Temperature	$T_j$	150	
Storage Temperature Range	$T_{stg}$	-55 150	

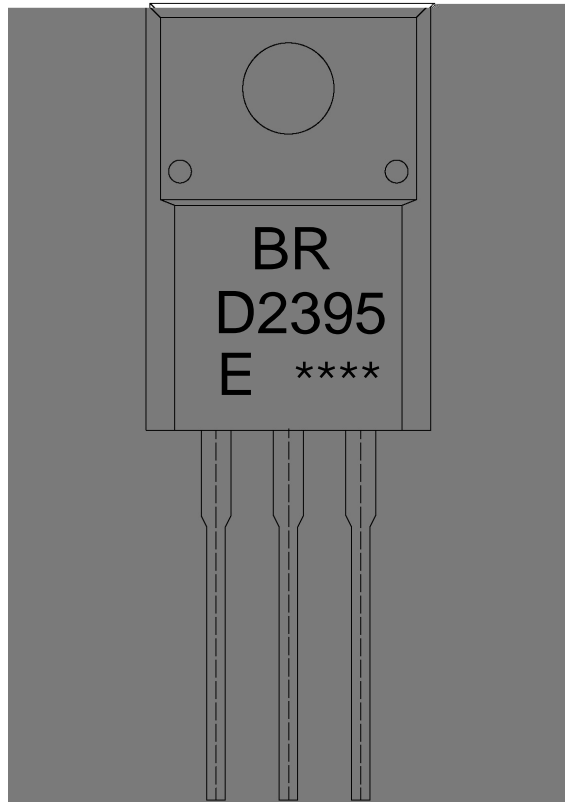
**/ Electrical Characteristics(Ta=25 )**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	$V_{CBO}$	$I_C=50\mu A$	60			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1.0mA$	50			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=50\mu A$	5.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=40V$ $I_E=0$			1.0	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=4.0V$ $I_C=0$			1.0	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=5.0V$ $I_C=500mA$	100		320	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2.0A$ $I_B=0.2A$			1.0	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=2.0A$ $I_B=0.2A$			1.5	V
Transition Frequency	$f_T$	$V_{CE}=5.0V$ $I_C=500mA$		100		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V$ $f=1.0MHz$ $I_E=0$		35		pF

/ Package Dimensions



/ Marking Instructions



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Note:

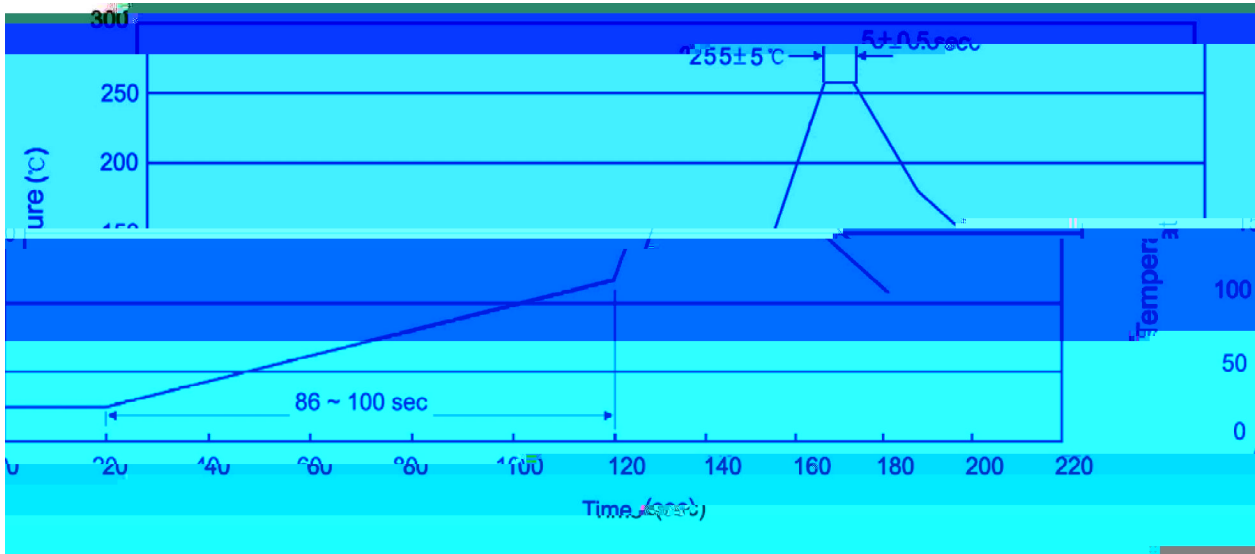
BR: Company Code.

D2395: Product Type.

E:  $h_{FE}$  Classifications Symbol

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

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



Note:

- |   |        |     |            |          |   |
|---|--------|-----|------------|----------|---|
| 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	Units					Dimension (unit mm <sup>3</sup> )		
	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