/ Descriptions

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

/ Features

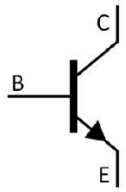
, KTB988

High h_{FE}, low saturation voltage, complementary pair with KTB988.

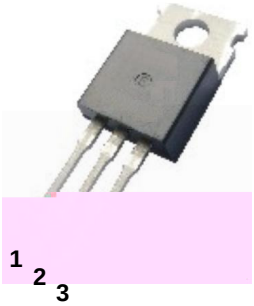
/ Applications

General purpose application.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	O	Y	GR
h_{FE} Range	60 120	100 200	150 300

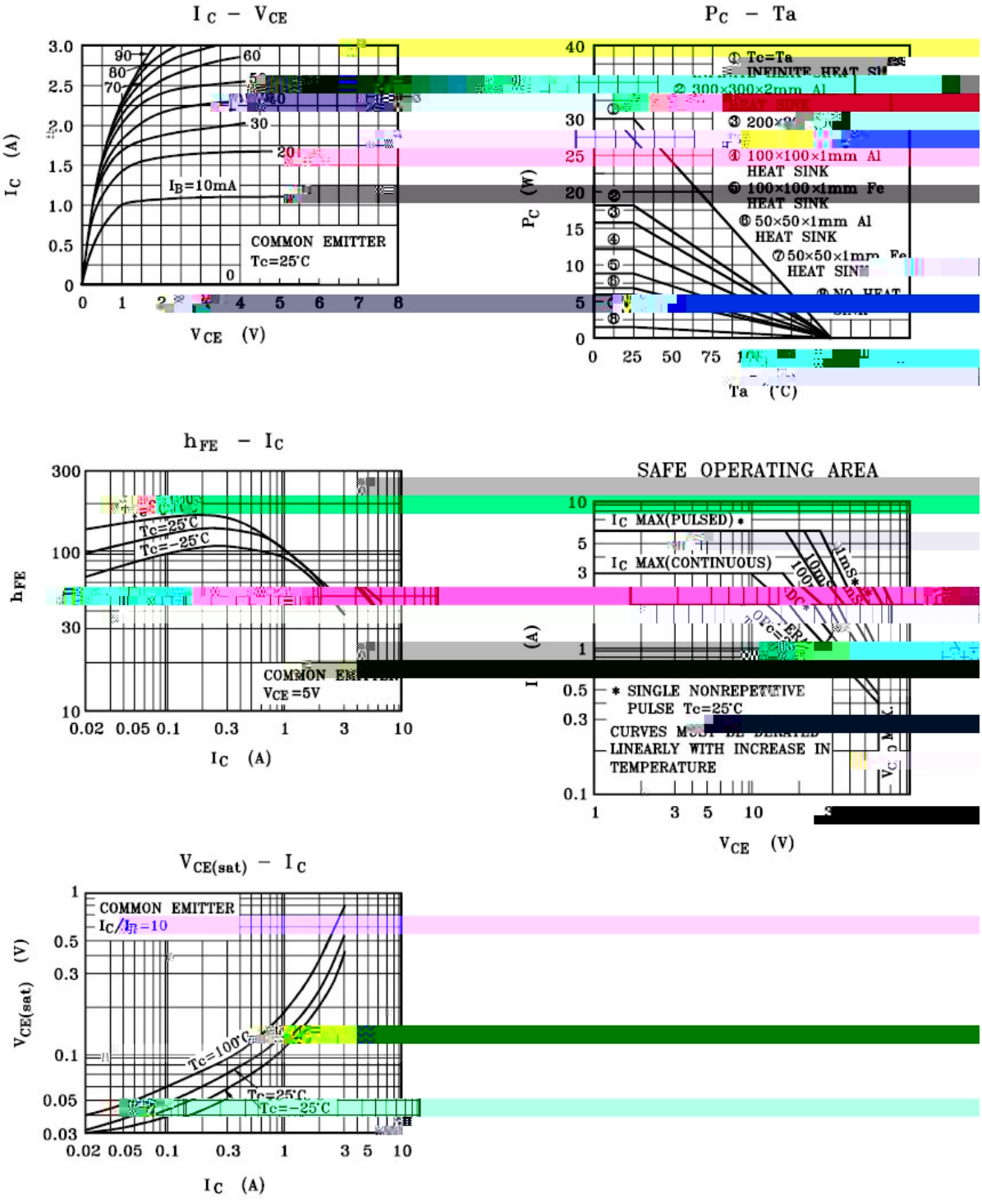
/ Absolute Maximum Ratings(Ta=25)

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	I_B	500	mA
Collector Power Dissipation	P_C	2.0	W
Collector Power Dissipation	P_C(Tc=25)	30	W
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

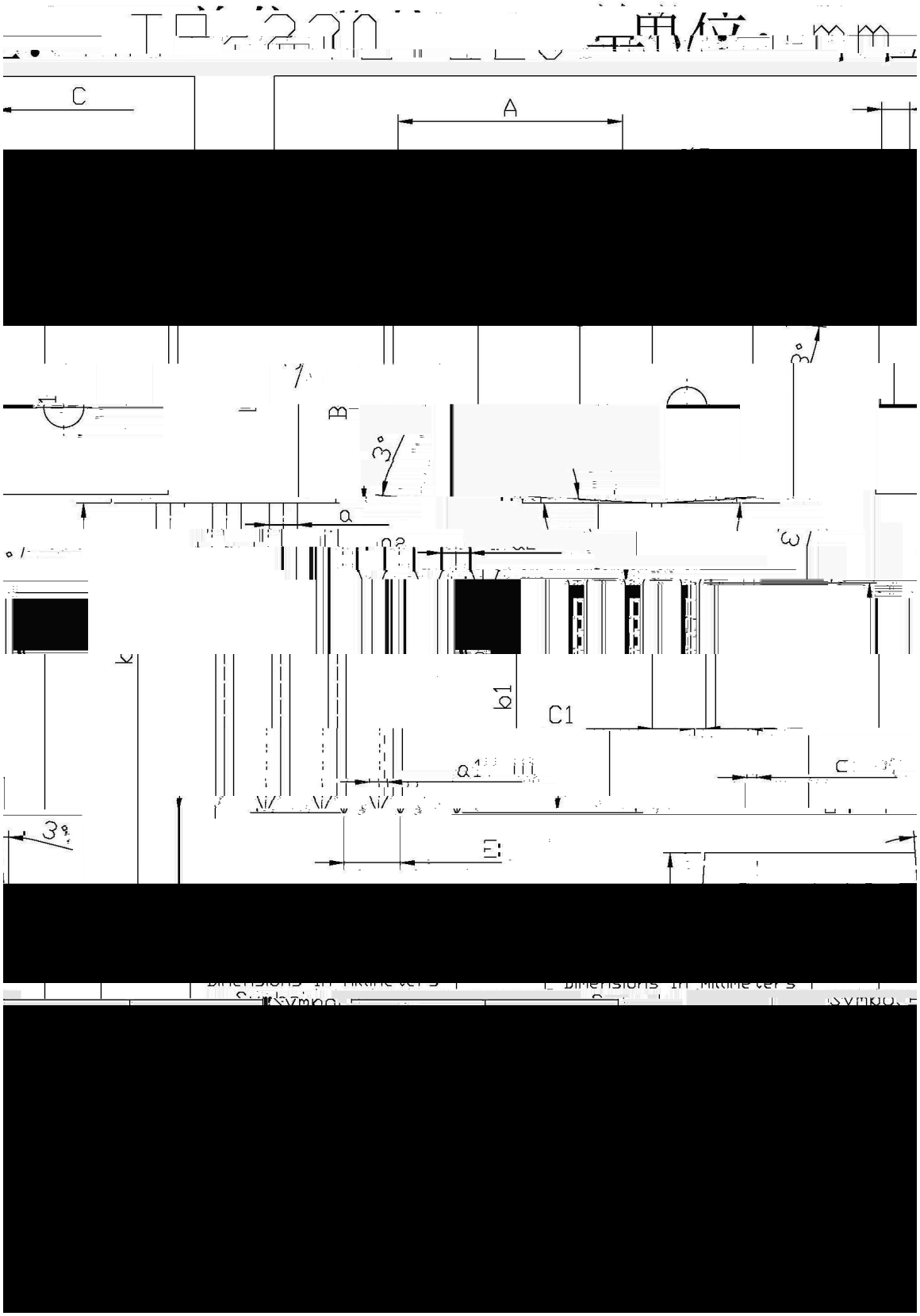
/ Electrical Characteristics(Ta=25)

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	A
Emitter Cut-Off Current	I_{EBO}	V_{EB}=7.0V I_C=0			100	A
DC Current Gain	h_{FE}	V_{CE}=5.0V I_C=0.5A	60		300	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=2.0A I_B=0.2A		0.25	1.0	V
Base to Emitter Voltage	V_{BE}	V_{CE}=5.0A I_C=0.5A		0.7	1.0	V
Transition Frequency	f_T	V_{CE}=5.0V I_C=0.5A		3.0		MHz
Collector output capacitance	C_{ob}	V_{CB}=10V I_E=0 f=1.0MHz		35		pF
Turn-On Time	t_{on}	$-I_{B1}=I_{B2}$=0.2A V_{CC}=-30V		0.65		s
Storage Time	t_{stg}			1.3		
Fall Time	t_f			0.65		

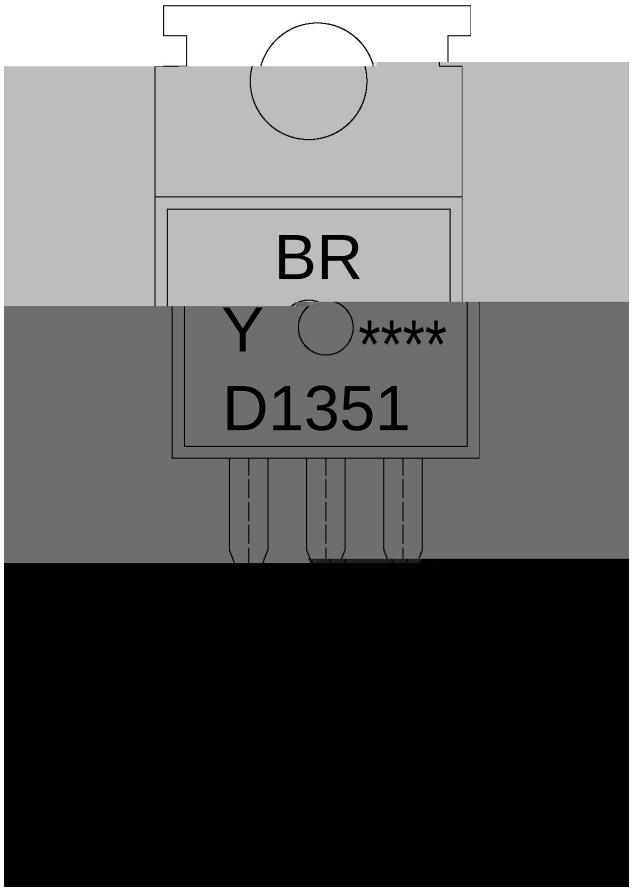
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



BR

D1351

Y: h_{FE}

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Note:

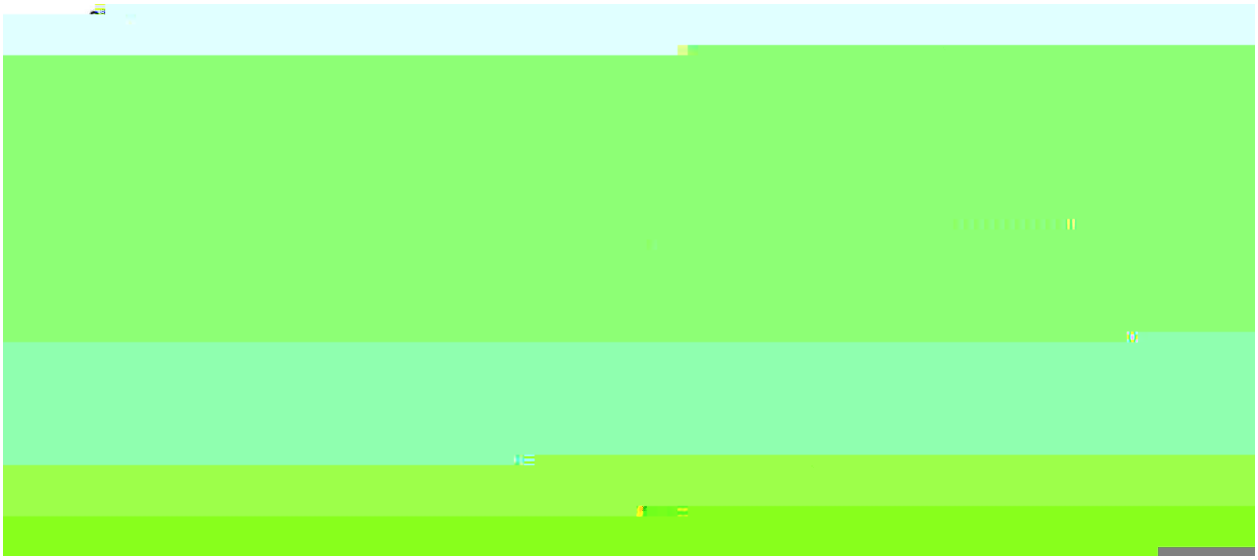
BR: Company Code

D1351: Product Type.

Y: 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^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^3)
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box
TO-220/F	50	20	1,000	5	5,000	532×31.4×5.5	555×164×50	575×290×180

/ Notices