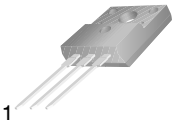
PNP Epitaxial Silicon Transistor

KSB1015



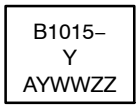
1. Base
2. Collector
3. Emitter

TO−220 Fullpack, 3−Lead
CASE 221AT

Low Frequency Power Amplifier

- Low Collector Emitter Saturation Voltage
- This is a Pb−Free Device

MARKING DIAGRAM



B1015−Y = Specific Device Code
A = Site Code
YWW = Year WW
ZZ = Assembly Lot Code

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector−Base Voltage	−60	V
V_{CEO}	Collector−Emitter Voltage	−60	V
V_{EBO}	Emitter−Base Voltage	−7	V
I_C	Collector Current (DC)	−3	A
I_B	Base Current	−0.5	A
P_C	Collector Power Dissipation (T_C = 25°C)	25	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	−55 ~ 150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

ORDERING INFORMATION

Device	Package	Shipping
KSB1015YTU	TO−220−3 Fullpack (Pb−Free)	1000 Units / Tube

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = −50 mA, I_B = 0	−60	−	−	V
I_{CBO}	Collector Cut−off Current	V_{CB} = −60 V, I_E = 0	−	−	−100	μA
I_{EBO}	Emitter Cut−off Current	V_{BE} = −7 V, I_C = 0	−	−	−100	μA
h_{FE1} h_{FE2}	DC Current Gain	V_{CE} = −5 V, I_C = −0.5 A V_{CE}= −5 V, I_C = −3 A	60 20	− −	200 −	
V_{CE} (sat)	Collector−Emitter Saturation Voltage	I_C = −3 A, I_B= −0.3 A	−	−0.5	−1	V
V_{BE} (on)	Base−Emitter ON Voltage	V_{CE} = −5 V, I_C = −0.5 A	−	−0.7	−1	V
f_T	Current Gain Bandwidth Product	V_{CE} = −5 V, I_C = −0.5 A	−	9	−	MHz
C_{ob}	Output Capacitance	V_{CB} = −10 V, f = 1 MHz	−	150	−	pF
t_{ON}	Turn ON Time	V_{CC} = −30 V, I_C = −1 A, I_{B1} = −I_{B2} = −0.2 A, R_L = 30 Ω	−	0.4	−	μs
t_{STG}	Storage Time		−	1.7	−	μs
t_F	Fall Time		−	0.5	−	μs

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

h_{FE} Classification

Classification	O	Y
h_{FE1}	60 ~ 120	100 ~ 200

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TYPICAL CHARACTERISTICS

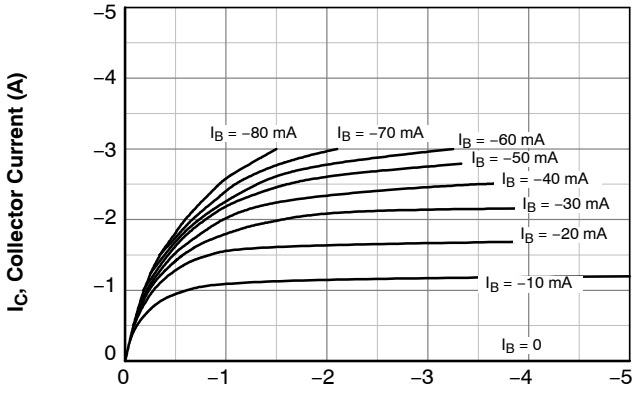


Figure 1. Static Characteristic

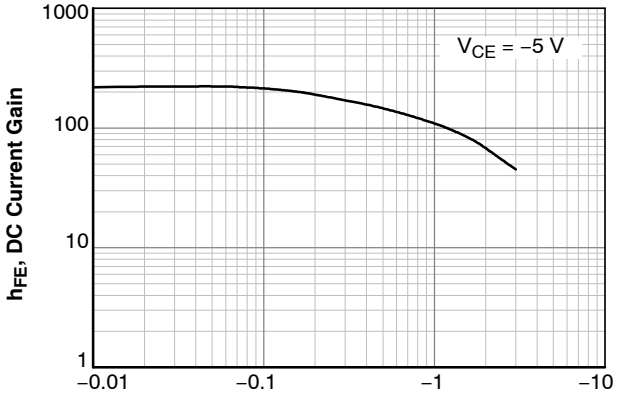


Figure 2. DC Current Gain

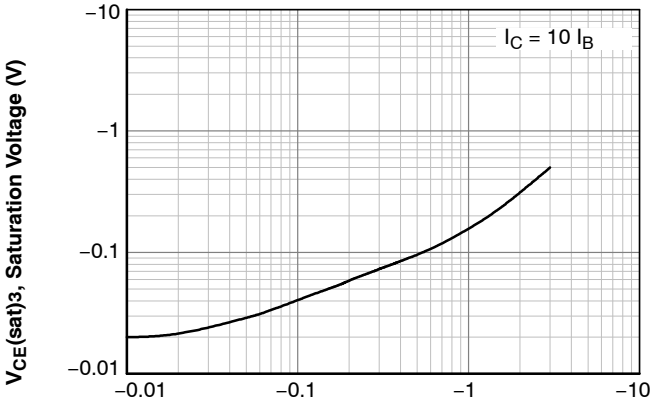


Figure 3. Collector−Emitter Saturation Voltage

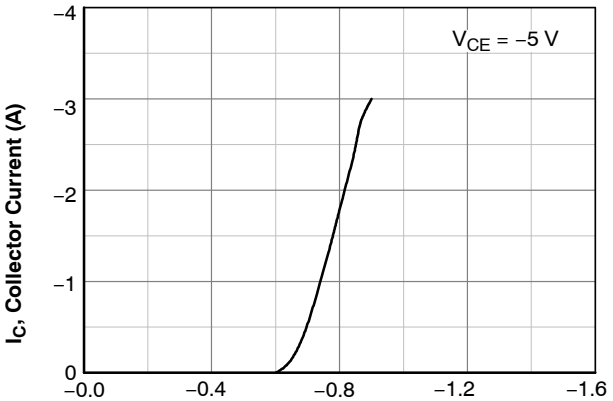


Figure 4. Base−Emitter On Voltage

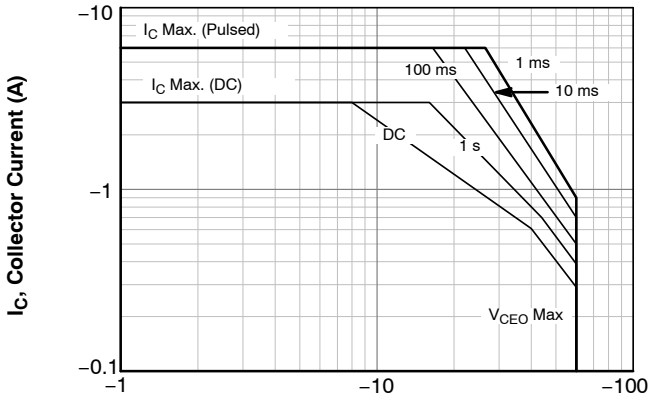


Figure 5. Safe Operating Areas

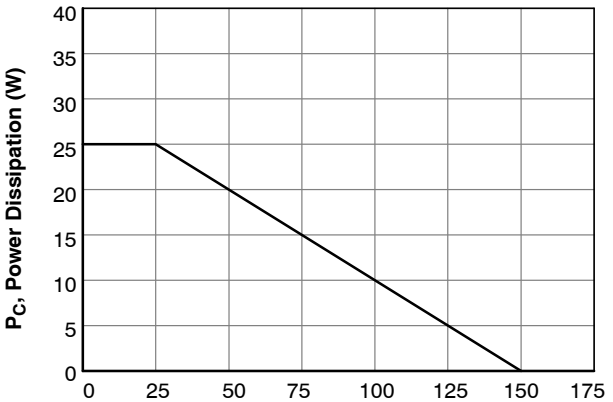
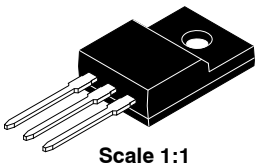


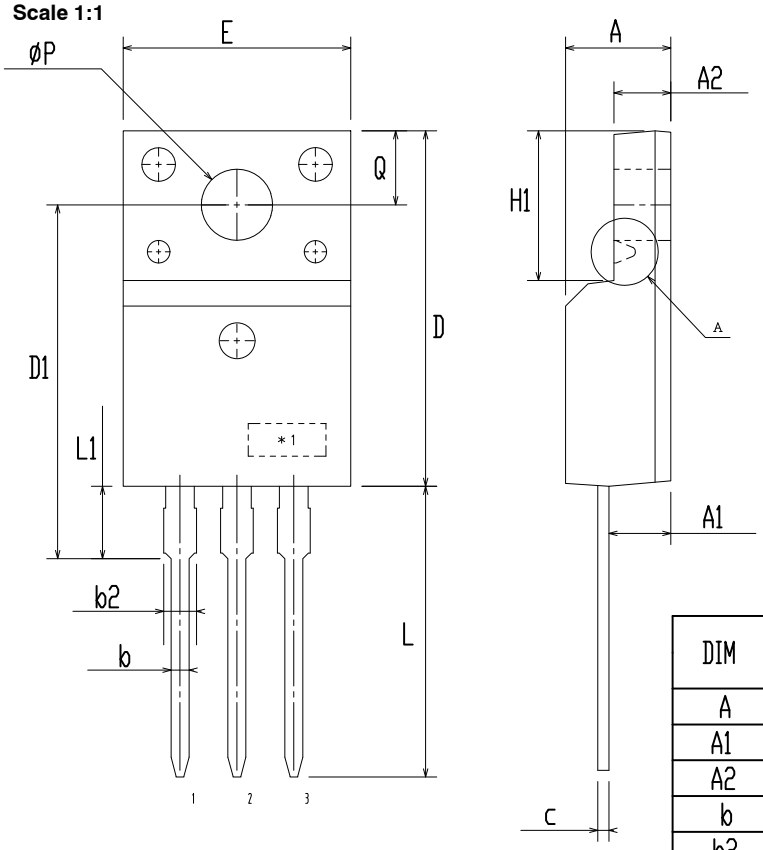
Figure 6. Power Derating

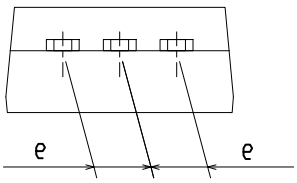
TO−220 Fullpack, 3−Lead / TO−220F−3SG
CASE 221AT
ISSUE B

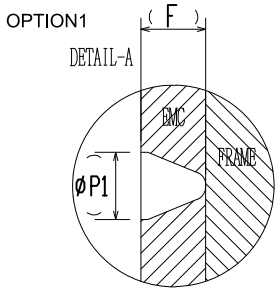
DATE 19 JAN 2021



Scale 1:1







DIM	MILLIMITERS		
	MIN	NOM	MAX
A	4.50	4.70	4.90
A1	2.56	2.76	2.96
A2	2.34	2.54	2.74
b	0.70	0.80	0.90
b2	~	~	1.47
c	0.45	0.50	0.60
D	15.67	15.87	16.07
D1	15.60	15.80	16.00
E	9.96	10.16	10.36
e	2.34	2.54	2.74
F	~	0.84	~
H1	6.48	6.68	6.88
L	12.78	12.98	13.18
L1	3.03	3.23	3.43
ø P	2.98	3.18	3.38
ø P1	~	1.00	~
Q	3.20	3.30	3.40

NOTES:
A. DIMENSION AND TOLERANCE AS ASME Y14.5-2009
B. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUCSIONS.
C. OPTION 1 - WITH SUPPORT PIN HOLE
OPTION 2 - NO SUPPORT PIN HOLE

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DESCRIPTION:	**TO−220 FULLPACK, 3−LEAD / TO−220F−3SG**	**PAGE 1 OF 1**

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