PNP Epitaxial Silicon Transistor

KSA1015

1. Emitter
2. Collector
3. Base

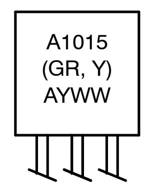
Bent Lead
Tape & Reel
Ammo Packing

TO−92 3 4.83x4.76 LEADFORMED
CASE 135AR

Features

- Low−Frequency Amplifier
- Collector−Base Voltage: V_{CBO} = −50 V
- Complement to KSC1815
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

MARKING DIAGRAM



A	=	Assembly Site
A1015(GR, Y)	=	Device Code
Y	=	Year of Production,
WW	=	Work Week Number

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector−Base Voltage	−50	V
V_{CEO}	Collector−Emitter Voltage	−50	V
V_{EBO}	Emitter−Base Voltage	−5	V
I_C	Collector Current	−150	mA
I_B	Base Current	−50	mA
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	−55 to 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.

THERMAL CHARACTERISTICS (Note 1)
(T_A = 25°C unless otherwise noted)

Symbol	Parameter	Max	Unit
P_D	Total Device Dissipation	400	mW
	Derate Above 25°C	3.2	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	312	°C/W

1. PCB size: FR−4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

ORDERING INFORMATION

Device	Marking	Package	Packing Method
KSA1015GRTA	A1015GR	TO−92 3L (Pb−Free)	Ammo
KSA1015YTA	A1015Y	TO−92 3L (Pb−Free)	Ammo

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
BV_{CBO}	Collector−Base Breakdown Voltage	I_C = −100 μA, I_E = 0	−50	–	–	V
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = −10 mA, I_B = 0	−50	–	–	V
BV_{EBO}	Emitter−Base Breakdown Voltage	I_E = −10 μA, I_C = 0	−5	–	–	V
I_{CBO}	Collector Cut−Off Current	V_{CB} = −50 V, I_E = 0	–	–	−0.1	μA
I_{EBO}	Emitter Cut−Off Current	V_{EB} = −5 V, I_C = 0	–	–	−0.1	μA
$h_{FE}1$	DC Current Gain	V_{CE} = −6 V, I_C = −2 mA	70	–	400	
$h_{FE}2$	DC Current Gain	V_{CE} = −6 V, I_C = −150 mA	25	–	–	
$V_{CE}(sat)$	Collector−Emitter Saturation Voltage	I_C = −100 mA, I_B = −10 mA	–	−0.1	−0.3	V
$V_{BE}(sat)$	Base−Emitter Saturation Voltage	I_C = −100 mA, I_B = −10 mA	–	–	−1.1	V
f_T	Current Gain Bandwidth Product	V_{CE} = −10 V, I_C = −1 mA	80	–	–	MHz
C_{ob}	Output Capacitance	V_{CB} = −10 V, I_E = 0, f = 1 MHz	–	4	7	pF
NF	Noise Figure	V_{CE} = −6 V, I_C = −0.1 mA, f = 100 Hz, R_G = 10 kΩ	–	0.5	6	dB

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	GR
$h_{FE}1$	70~140	120~240	200~400

TYPICAL PERFORMANCE CHARACTERISTICS

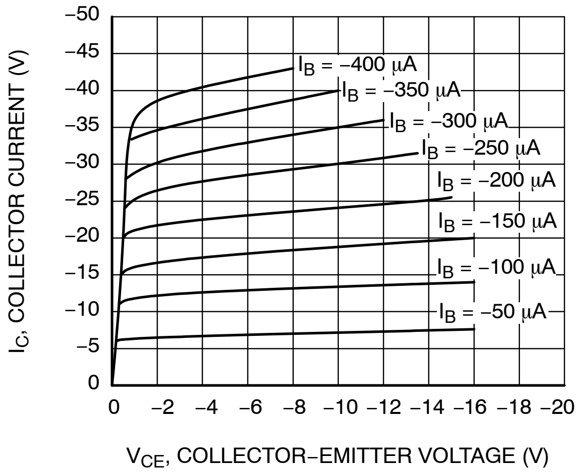


Figure 1. Static Characteristic

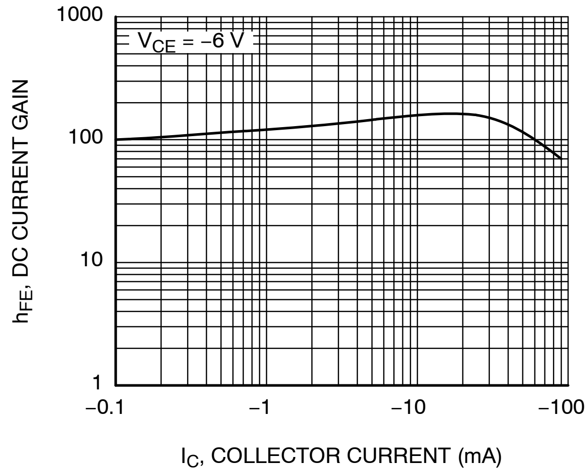


Figure 2. DC Current Gain

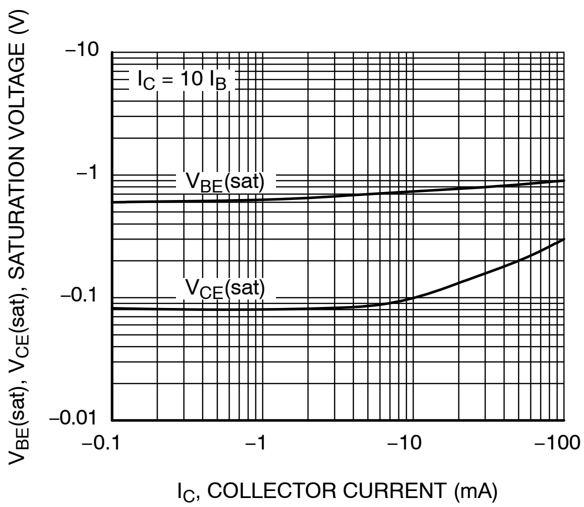


Figure 3. Base−Emitter Saturation Voltage and Collector−Emitter Saturation Voltage

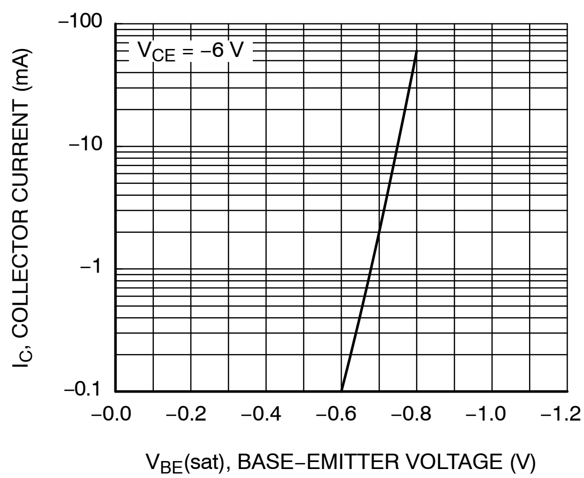


Figure 4. Base−Emitter On Voltage

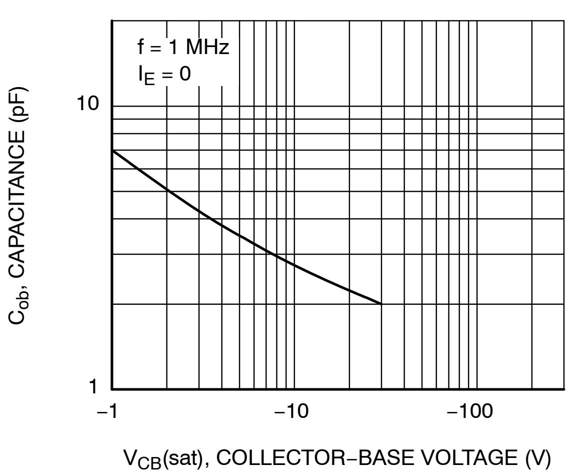


Figure 5. Collector Output Capacitance

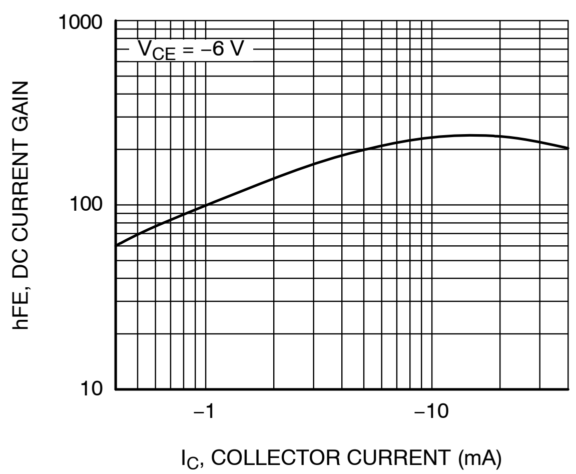


Figure 6. Current Gain Bandwidth Product

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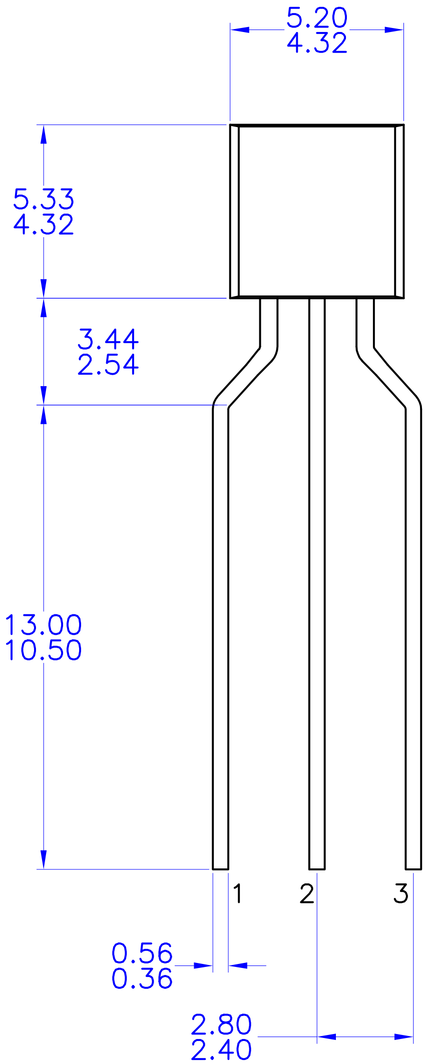

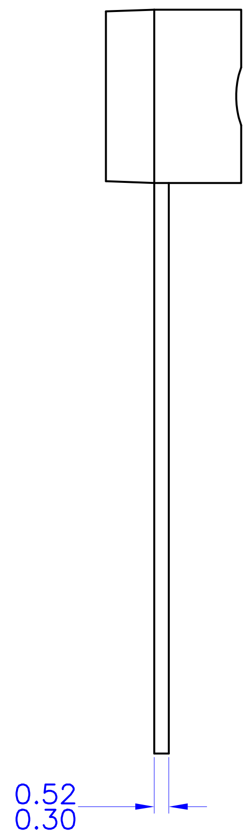

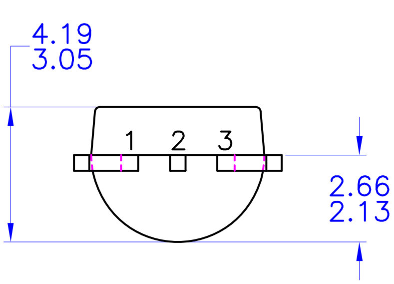

NOTES: UNLESS OTHERWISE SPECIFIED

A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M-1994

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