September 2015

KSA1015
PNP Epitaxial Silicon Transistor

Features

- Low-Frequency Amplifier
- Collector-Base Voltage: V_{CBO} = -50 V
- Complement to KSC1815

Straight Lead
Bulk Packing

Bent Lead
Tape & Reel
Ammo Packing

TO-92
1. Emitter
2. Collector
3. Base

Ordering Information

Part Number	Marking	Package	Packing Method
KSA1015GRTA	A1015	TO-92 3L	Ammo
KSA1015YTA	A1015	TO-92 3L	Ammo

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at 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

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Thermal Characteristics[1]

Values are at 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

Note:

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.

Electrical Characteristics

Values are at 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

h_{FE} Classification

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

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Typical Performance Characteristics

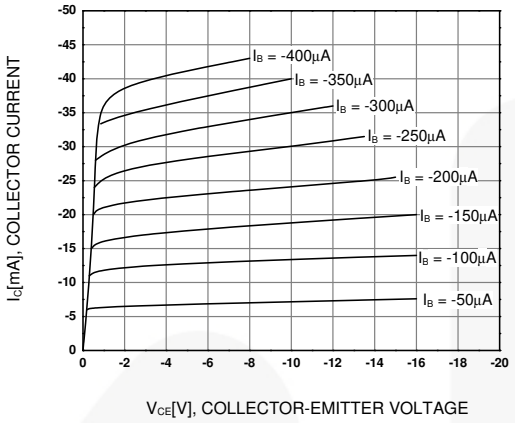

Figure 1. Static Characteristic

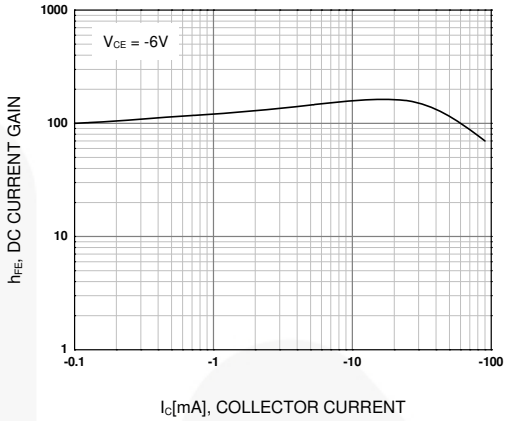

Figure 2. DC Current Gain

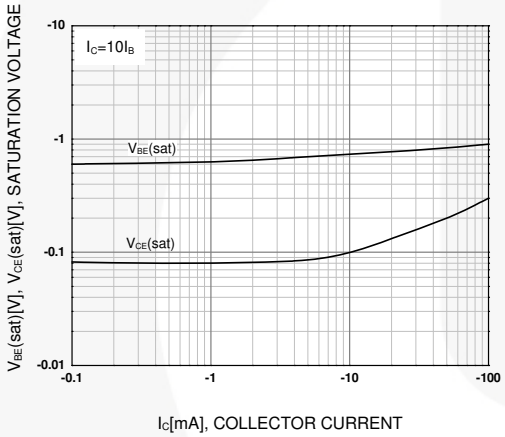

Figure 3. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

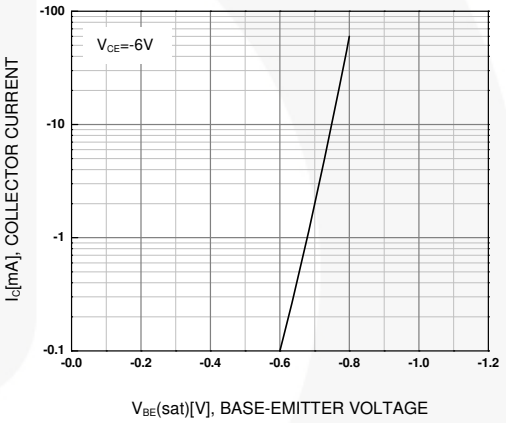

Figure 4. Base-Emitter On Voltage

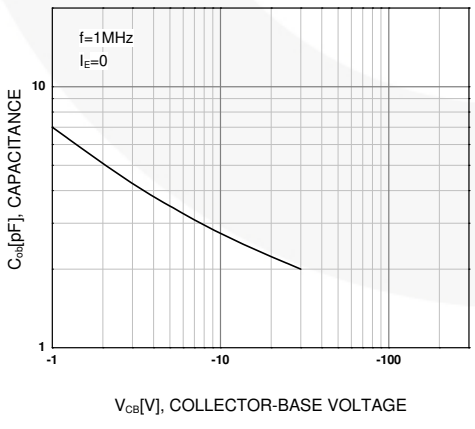

Figure 5. Collector Output Capacitance

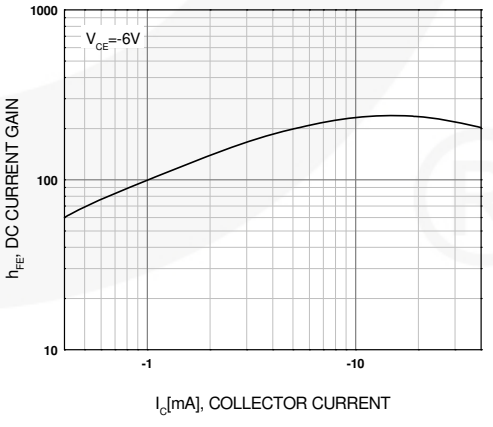

Figure 6. Current Gain Bandwidth Product

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Physical Dimensions

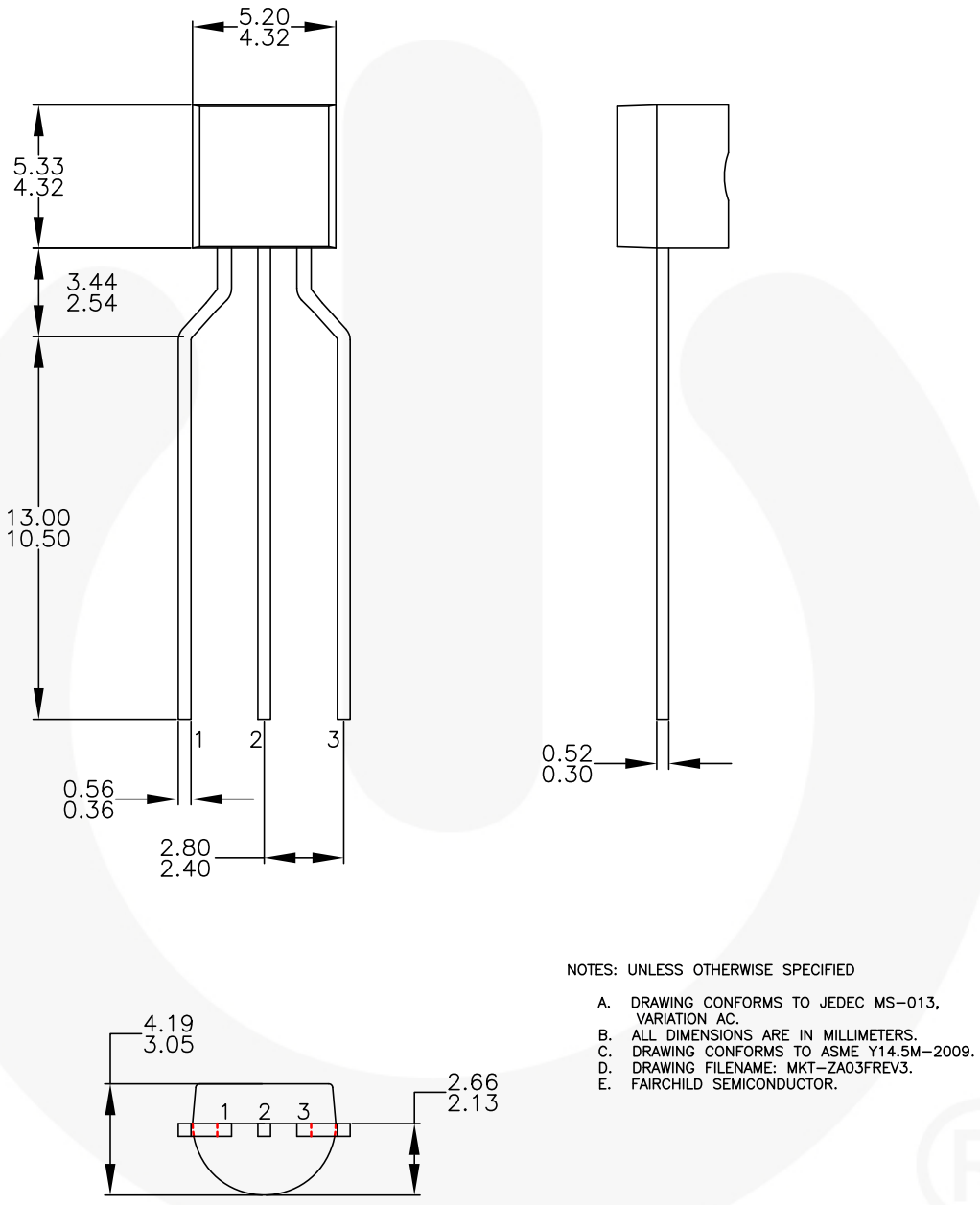

Figure 7. 3-LEAD, TO-92, MOLDED 0.200 IN LINE SPACING LD FORM

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