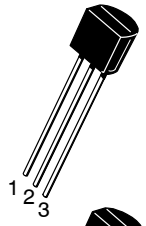
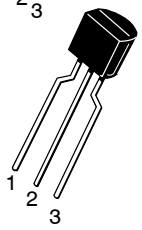
NPN Epitaxial Silicon Transistor

KSC1008



TO−92−3
CASE 135AN



TO−92−3 LF
CASE 135AR

KSC1008: 1. Emitter 2. Base 3. Collector
KSC1008C: 1. Emitter 2. Collector 3. Base

Features

- Low−Frequency Amplifier Medium Speed Switching
- High Collector−Base Voltage: V_{CBO} = 80 V
- Collector Current: I_C = 700 mA
- Suffix "−C" means Center Collector (1. Emitter 2. Collector 3. Base)
- Non Suffix "−C" means Side Collector (1. Emitter 2. Base 3. Collector)
- Complement to KSA708
- These are Pb−Free Devices

ABSOLUTE MAXIMUM RATINGS

(T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector−Base Voltage	80	V
V_{CEO}	Collector−Emitter Voltage	60	V
V_{EBO}	Emitter−Base Voltage	8	V
I_C	Collector Current	700	mA
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	−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.

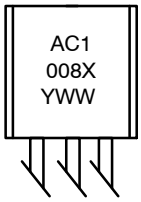
THERMAL CHARACTERISTICS

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

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	800	mW
	Derate Above 25°C	6.4	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction−to−Ambient	156	°C/W

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

MARKING DIAGRAM



A = Assembly Code
C1008 = Device Code
X = O/Y/YC/G
YWW = Date Code

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

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	80	–	–	V
BV_{CEO}	Collector−Emitter Breakdown Voltage	I_C = 10 mA, I_B = 0	60	–	–	V
BV_{EBO}	Emitter−Base Breakdown Voltage	I_E = 10 μA, I_C = 0	8	–	–	V
I_{CBO}	Collector Cut−Off Current	V_{CB} = 60 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}	DC Current Gain	V_{CE} = 2 V, I_C = 50 mA	40	–	400	
$V_{CE(sat)}$	Collector−Emitter Saturation Voltage	I_C = 500 mA, I_B = 50 mA	–	0.2	0.4	V
$V_{BE(sat)}$	Base−Emitter Saturation Voltage	I_C = 500 mA, I_B = 50 mA	–	0.86	1.10	V
f_T	Current Gain Bandwidth Product	V_{CE} = 10 V, I_C = 50 mA	30	50	–	MHz
C_{ob}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1 MHz	–	8	–	pF

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	G
hFE	70 ~ 140	120 ~ 240	200 ~ 400

ORDERING INFORMATION (Note 2)

Part Number	Top Mark	Package	Shipping
KSC1008OBU	C1008 O−	TO−92−3 (Pb−Free)	10000 / Bulk Bag
KSC1008YBU	C1008 Y−		10000 / Bulk Bag
KSC1008YTA	C1008 Y−	TO−92−3 LR (Pb−Free)	2000 / Fan−Fold
KSC1008CYTA	C1008 YC		2000 / Fan−Fold
KSC1008GTA	C1008 G−		2000 / Fan−Fold

2. Affix "−C−" means center collector pin. Affix "−O−, −Y−, −G−" means h_{FE} classification. Suffix "−BU" means bulk packing, straight lead form. Suffix "−TA" means tape and ammo packing, 0.200 in−line spacing lead form.

TYPICAL PERFORMANCE CHARACTERISTICS

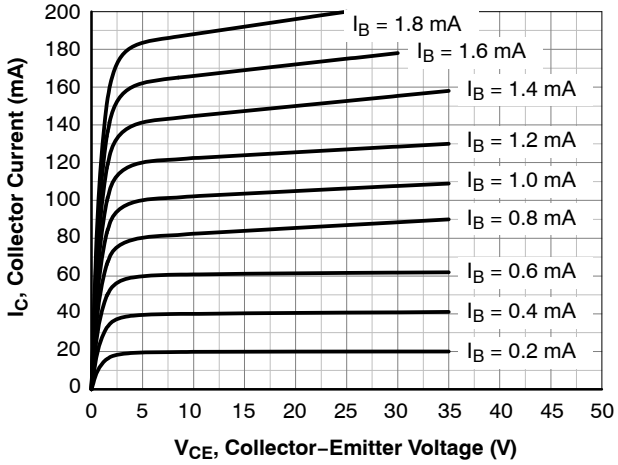


Figure 1. Static Characteristic

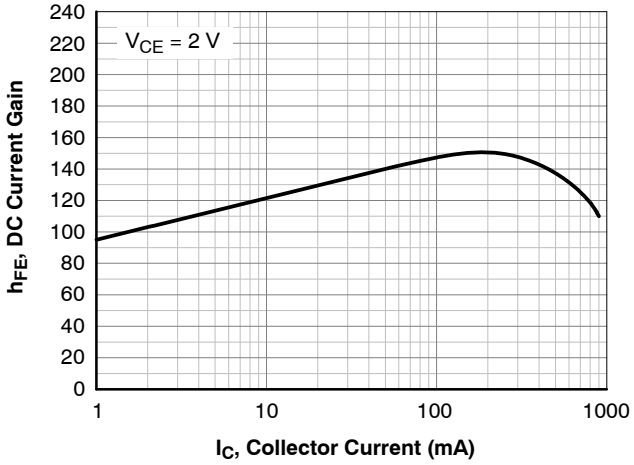


Figure 2. DC Current Gain

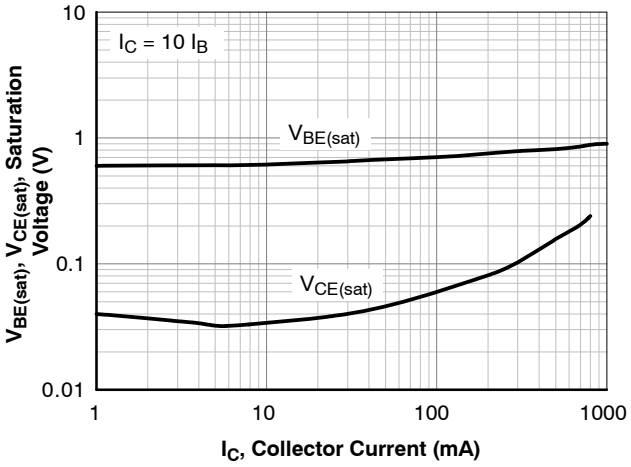


Figure 3. Base−Emitter Saturation Voltage and Collector−Emitter Saturation Voltage

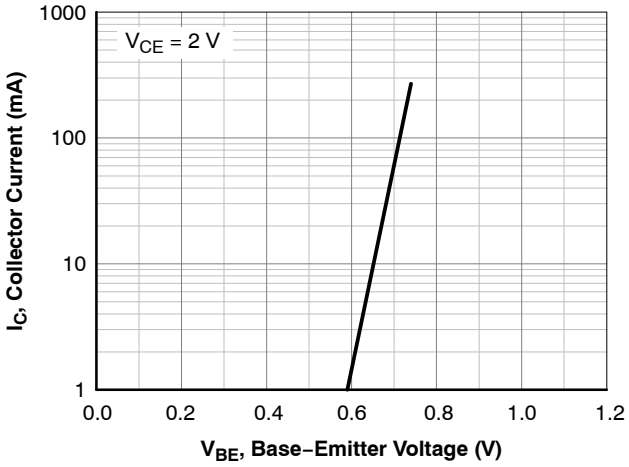


Figure 4. Base−Emitter On Voltage

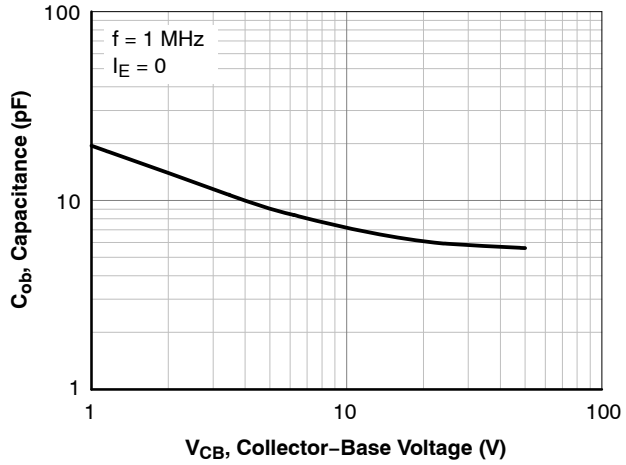


Figure 5. Collector Output Capacitance

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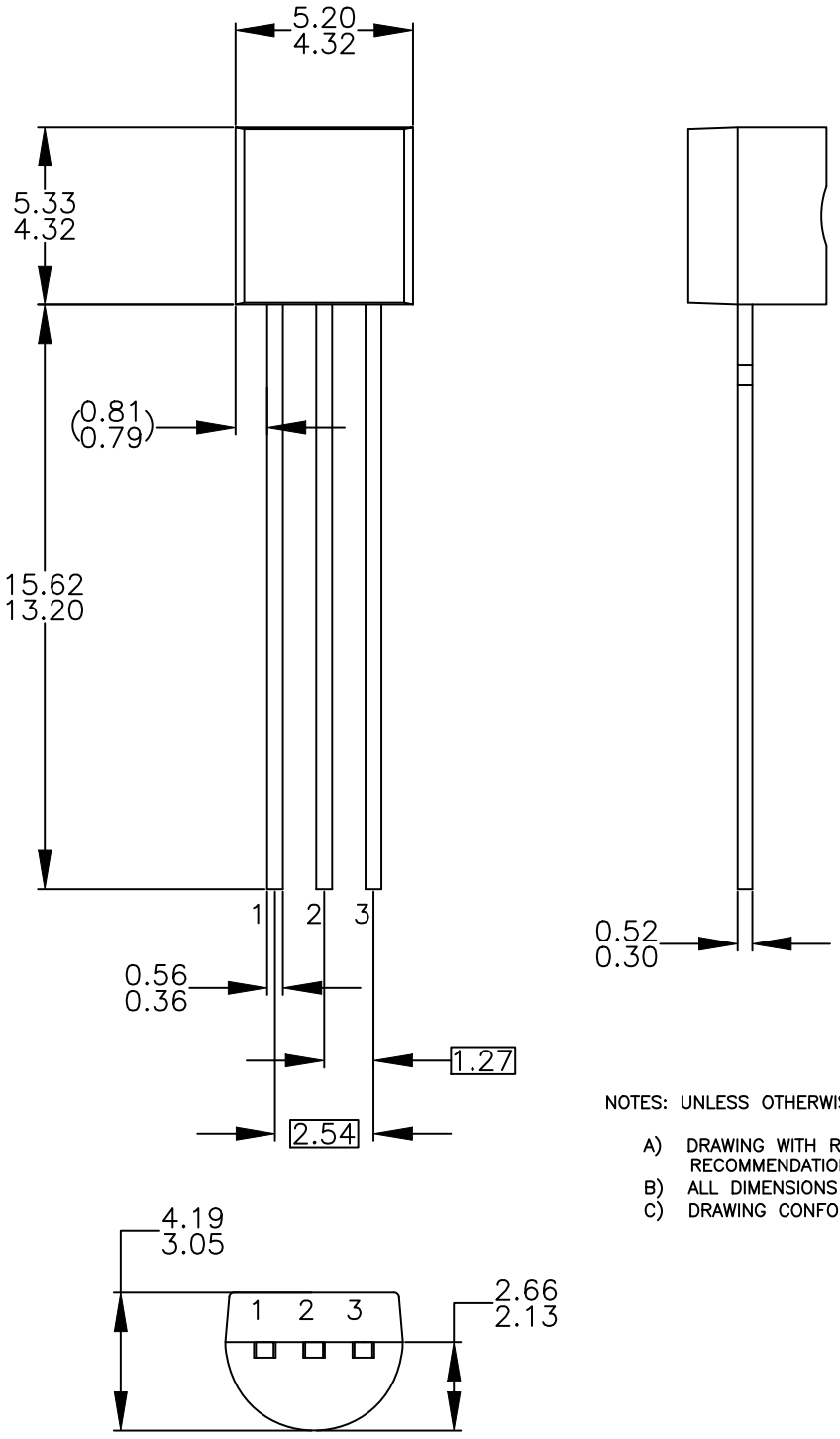

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MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

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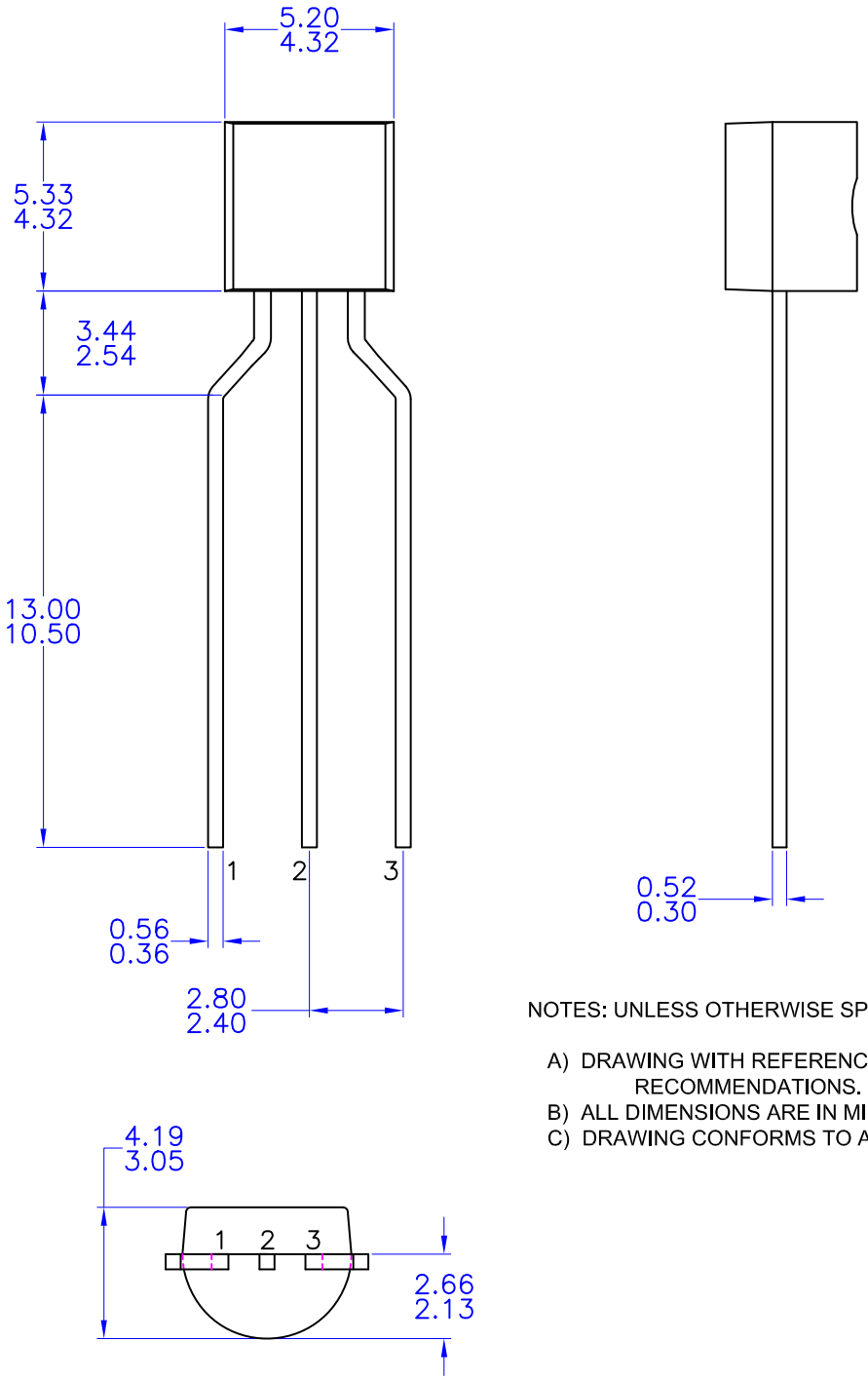

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