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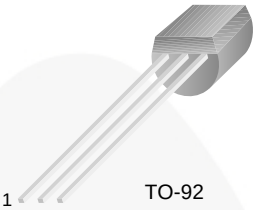
Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

November 2014

KSC1008
NPN Epitaxial Silicon Transistor

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



TO-92

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

Ordering Information(1)

Part Number	Top Mark	Package	Packing Method
KSC1008OBU	C1008 O-	TO-92 3L	Bulk
KSC1008YBU	C1008 Y-	TO-92 3L	Bulk
KSC1008YTA	C1008 Y-	TO-92 3L	Ammo, 2000 pcs
KSC1008CYTA	C1008 YC	TO-92 3L	Ammo, 2000 pcs
KSC1008GTA	C1008 G-	TO-92 3L	Ammo, 2000 pcs

Note:

1. 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.

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	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

Thermal Characteristics[2]

Values are at T_A = 25°C unless otherwise noted.

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

Note:

2. 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	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

h_{FE} Classification

Classification	R	O	Y	G
h_{FE}	40 ~ 80	70 ~ 140	120 ~ 240	200 ~ 400

Typical Performance Characteristics

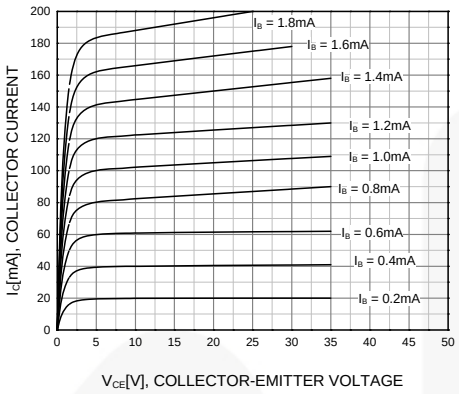


Figure 1. Static Characteristic

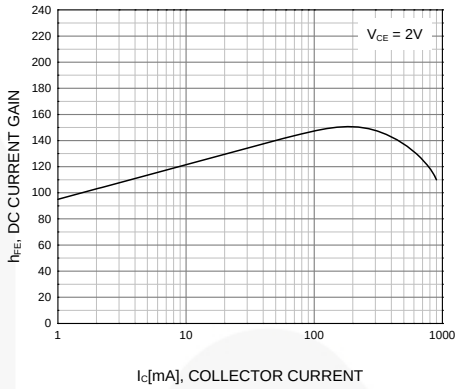


Figure 2. DC Current Gain

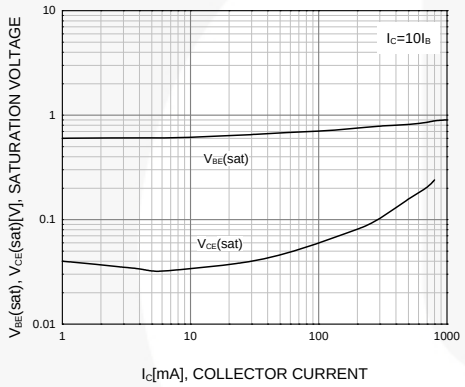


Figure 3. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

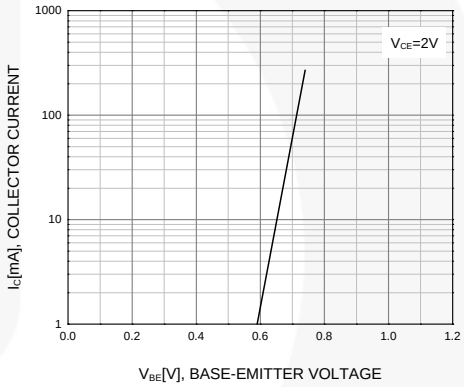


Figure 4. Base-Emitter On Voltage

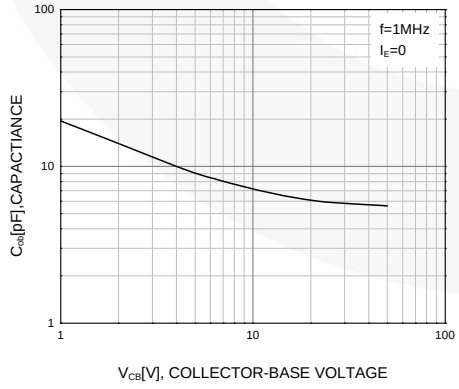
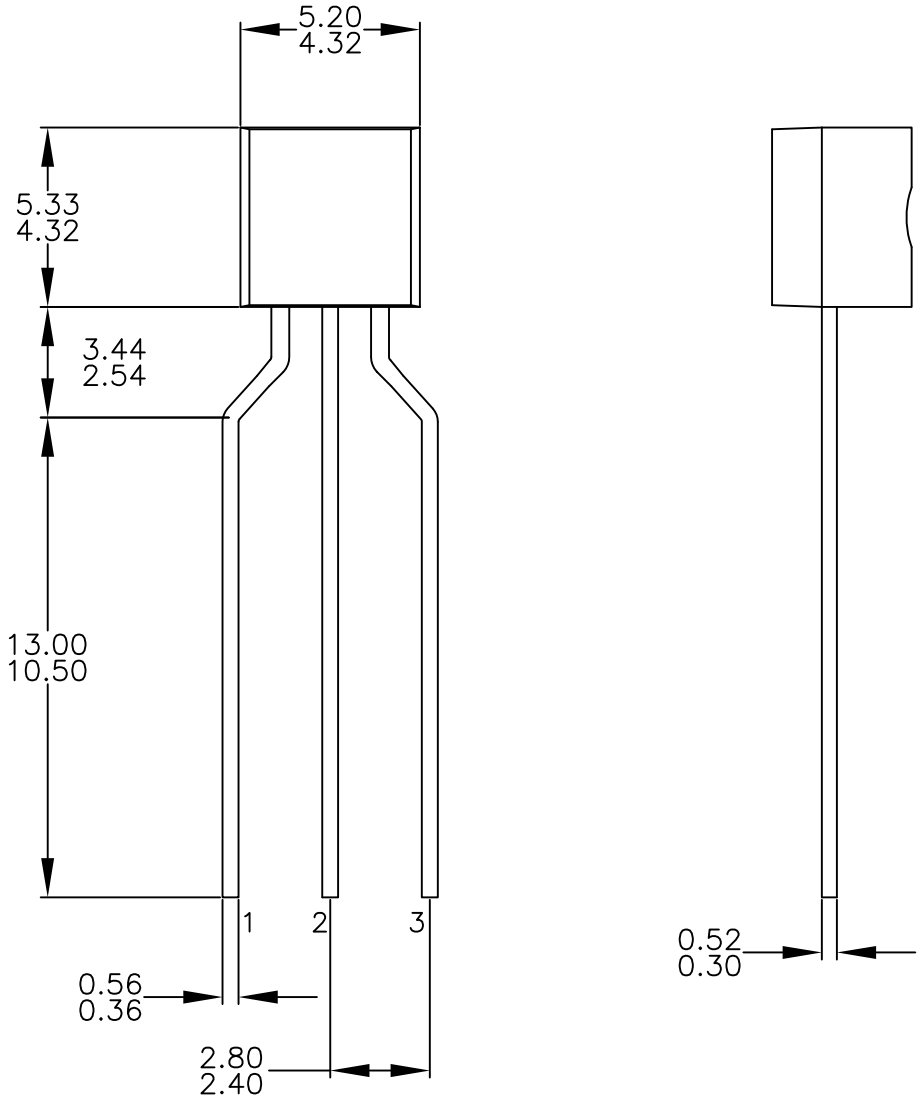
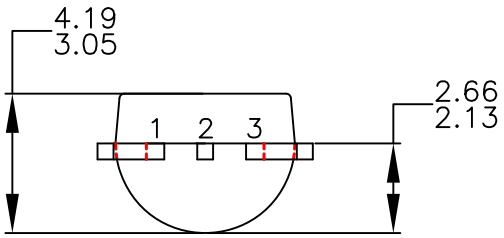


Figure 5. Collector Output Capacitance





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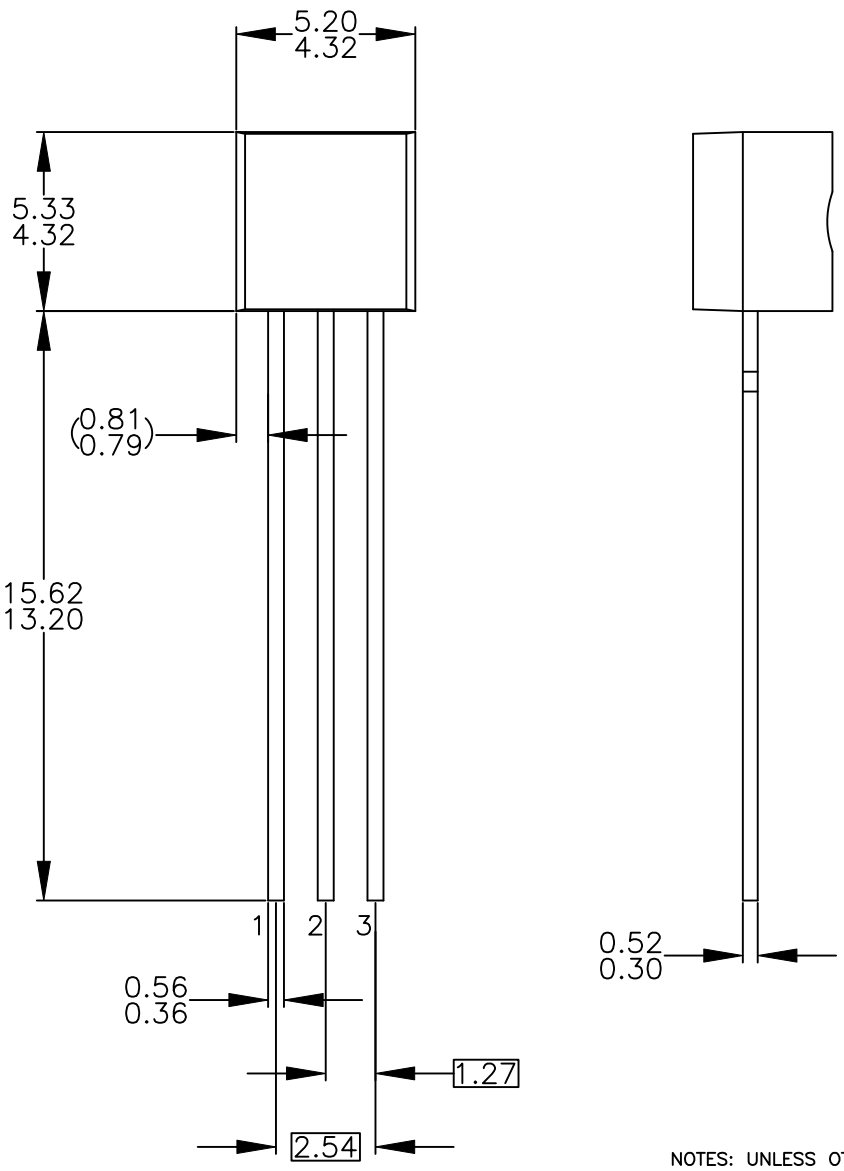

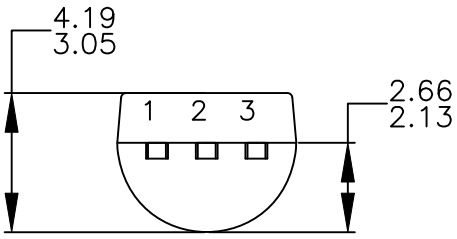

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FAIRCHILD

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