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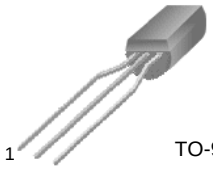
February 2015

KSC2316
NPN Epitaxial Silicon Transistor

Features

- Audio Power Amplifier Applications
- Driver Stage Amplifier
- Complement to KSA916



TO-92L

1. Emitter 2. Collector 3. Base

Ordering Information

Part Number	Top Mark	Package	Packing Method
KSC2316YTA	C2316	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	120	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	800	mA
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Thermal Characteristics[1]

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

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	900	mW
	Derate Above 25°C	7.2	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	130	°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 = 1 mA, I_E = 0	120			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 10 mA, I_B = 0	120			V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 1 mA, I_C = 0	5			V
I_{CBO}	Collector Cut-Off Current	V_{CB} = 120 V, I_E = 0			0.1	µA
h_{FE1}	DC Current Gain	V_{CE} = 5 V, I_C = 10 mA	60			
h_{FE2}	DC Current Gain	V_{CE} = 5 V, I_C = 100 mA	80		240	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 500 mA, I_B = 50 mA			1	V
f_T	Current Gain Bandwidth Product	V_{CE} = 5V, I_C = 100 mA		120		MHz
C_{ob}	Output Capacitance	V_{CB} = 10 V, I_E = 0, f = 1 MHz			30	pF

h_{FE} Classification

Classification	O	Y
h_{FE2}	80 ~ 160	120 ~ 240

Typical Performance Characteristics

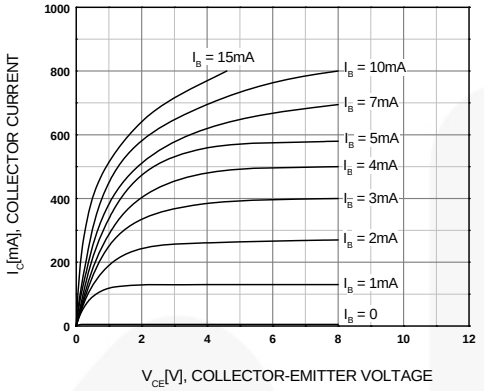


Figure 1. Static Characteristic

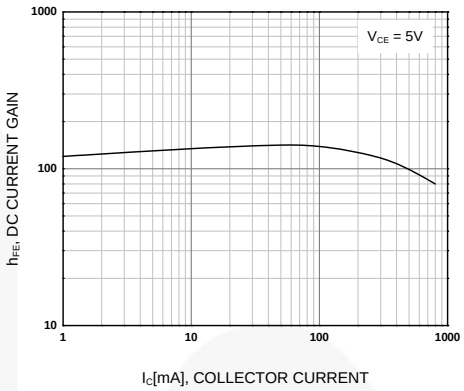


Figure 2. DC Current Gain

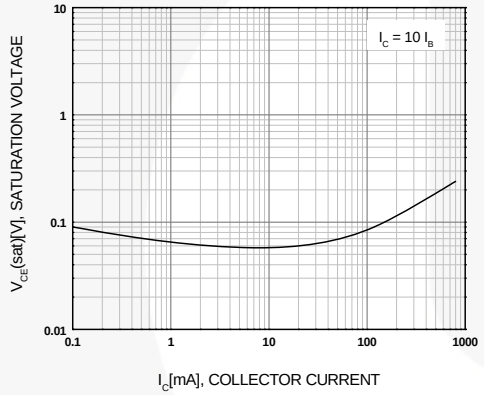


Figure 3. Collector-Emitter Saturation Voltage

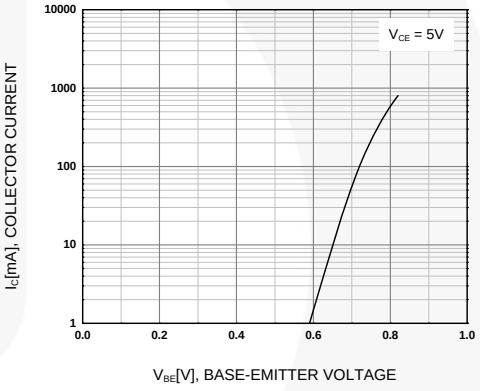


Figure 4. Base-Emitter On Voltage

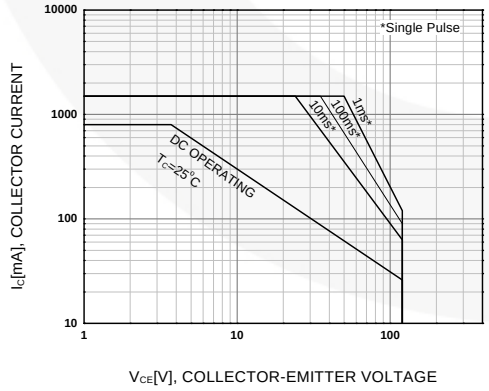


Figure 5. Safe Operating Area

Physical Dimensions

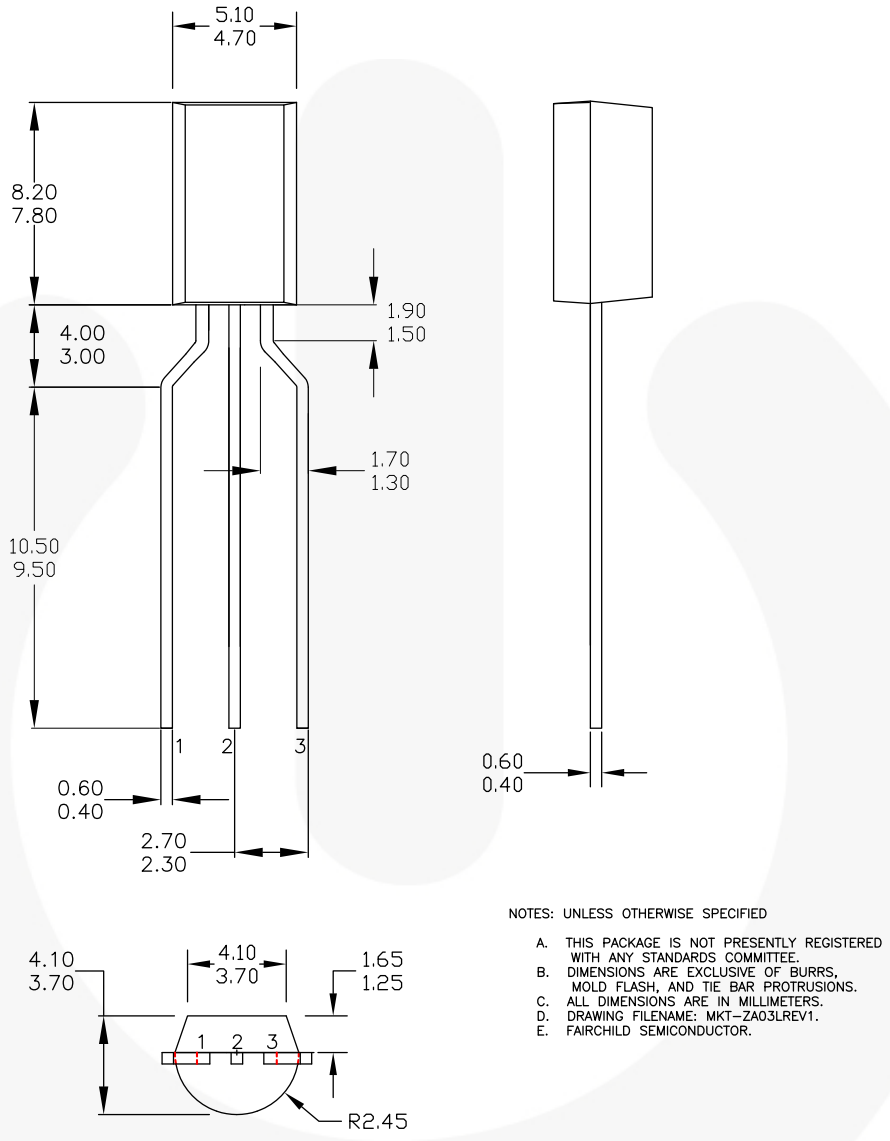


Figure 6. 3-LEAD, TO-92L, NON-JEDEC 8 MM TALL BODY LEAD FORM TA TYPE

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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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