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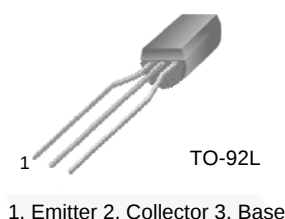
February 2015

KSC2316

NPN Epitaxial Silicon Transistor

Features

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



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 $T_A = 25^\circ\text{C}$ 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	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 to +150	$^\circ\text{C}$

Thermal Characteristics⁽¹⁾

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	900	mW
	Derate Above 25°C	7.2	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	130	$^\circ\text{C/W}$

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 $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 1\text{ mA}, I_E = 0$	120			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10\text{ mA}, I_B = 0$	120			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 1\text{ mA}, I_C = 0$	5			V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 120\text{ V}, I_E = 0$			0.1	μA
h_{FE1}	DC Current Gain	$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$	60			
h_{FE2}	DC Current Gain	$V_{CE} = 5\text{ V}, I_C = 100\text{ mA}$	80		240	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 500\text{ mA}, I_B = 50\text{ mA}$			1	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 5\text{ V}, I_C = 100\text{ mA}$		120		MHz
C_{ob}	Output Capacitance	$V_{CB} = 10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$			30	pF

h_{FE} Classification

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

Typical Performance Characteristics

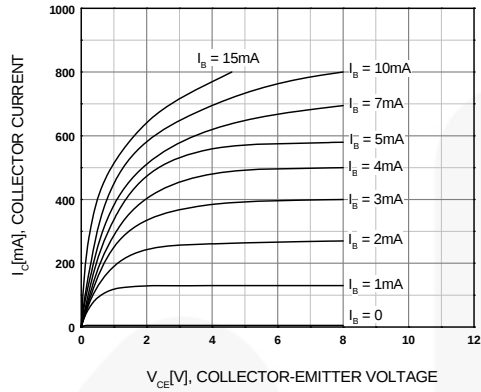


Figure 1. Static Characteristic

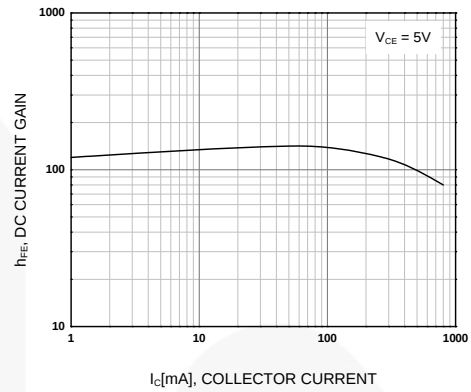


Figure 2. DC Current Gain

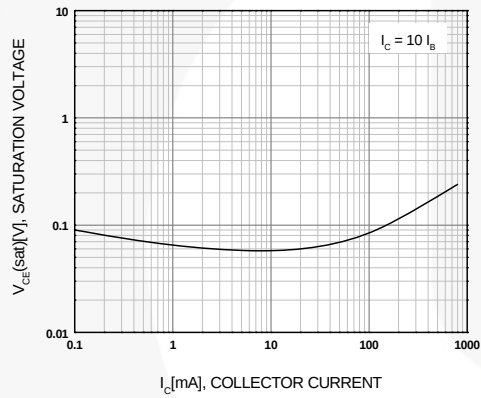


Figure 3. Collector-Emitter Saturation Voltage

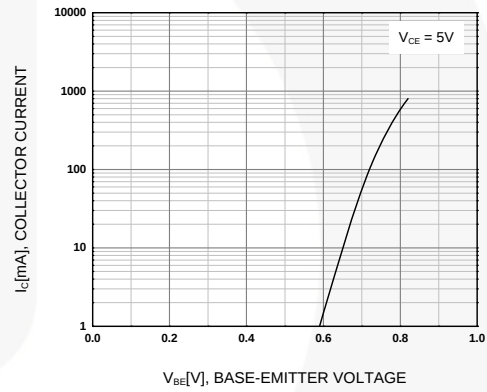


Figure 4. Base-Emitter On Voltage

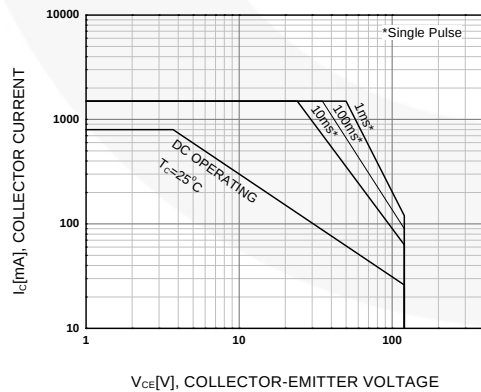


Figure 5. Safe Operating Area

Technical drawing of a mechanical part, showing front and top views with dimensions.

Front View Dimensions:

- Top width: 5.10 (nominal), 4.70 (actual)
- Top section height: 8.20 (nominal), 7.80 (actual)
- Shoulder height: 4.00 (nominal), 3.00 (actual)
- Shoulder width: 1.90 (nominal), 1.50 (actual)
- Lower section height: 10.50 (nominal), 9.50 (actual)
- Lower section width: 1.70 (nominal), 1.30 (actual)
- Bottom width: 2.70 (nominal), 2.30 (actual)
- Bottom section height: 0.60 (nominal), 0.40 (actual)

Top View Dimensions:

- Top width: 4.10 (nominal), 3.70 (actual)
- Top section height: 4.10 (nominal), 3.70 (actual)
- Shoulder height: 1.65 (nominal), 1.25 (actual)
- Shoulder width: 1.65 (nominal), 1.25 (actual)
- Lower section height: 4.10 (nominal), 3.70 (actual)
- Lower section width: 1.65 (nominal), 1.25 (actual)
- Bottom width: 2.70 (nominal), 2.30 (actual)
- Bottom section height: 0.60 (nominal), 0.40 (actual)

Notes:

- 1, 2, 3: Section lines indicating cross-sections.
- R2.45: Radius dimension for the bottom corner.

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



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