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September 2015

KSA539

PNP Epitaxial Silicon Transistor

Features

- Low Frequency Amplifier
- Complement to KSC815
- Collector-Base Voltage: $V_{CBO} = -60\text{ V}$
- Collector Power Dissipation : $P_C = 400\text{ mW}$
- Suffix “-C” means Center Collector (1. Emitter 2. Collector 3. Base)
- Non Suffix “-C” means Side Collector (1. Emitter 2. Base 3. Collector)



Ordering Information

Part Number	Top Mark	Package	Packing Method
KSA539CYTA	A539	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	-60	V
V_{CEO}	Collector-Emitter Voltage	-45	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-200	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_C	Collector Power Dissipation	400	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	310	$^\circ\text{C/W}$

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	$I_C = -100\ \mu\text{A}$, $I_E = 0$	-65			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = -10\ \text{mA}$, $I_B = 0$	-45			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = -10\ \mu\text{A}$, $I_C = 0$	-5			V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = -45\ \text{V}$, $I_E = 0$			-100	nA
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = -3\ \text{V}$, $I_C = 0$			-100	nA
h_{FE}	DC Current Gain	$V_{CE} = -1\ \text{V}$, $I_C = -50\ \text{mA}$	40		240	
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = -1\ \text{V}$, $I_C = -10\ \text{mA}$	-0.60	-0.65	-0.90	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -150\ \text{mA}$, $I_B = -15\ \text{mA}$		-0.25	-0.50	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = -150\ \text{mA}$, $I_B = -15\ \text{mA}$		-0.9	-1.2	V

 h_{FE} Classification

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

Typical Performance Characteristics

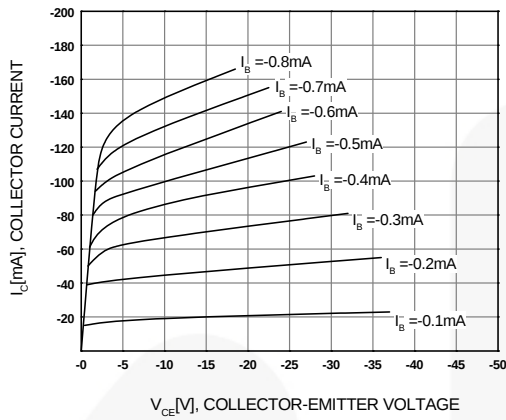


Figure 1. Static Characteristic

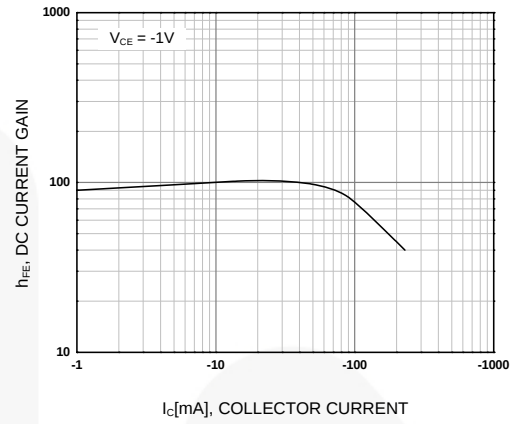


Figure 2. DC Current Gain

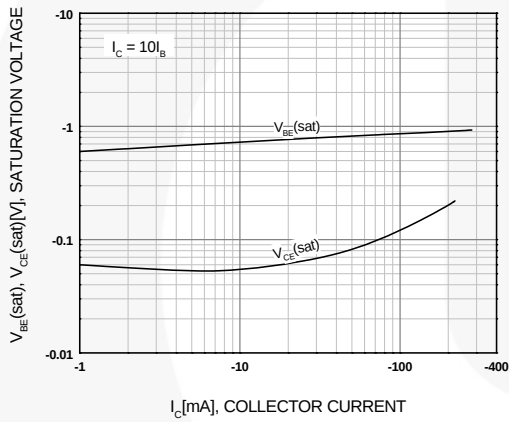


Figure 3. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

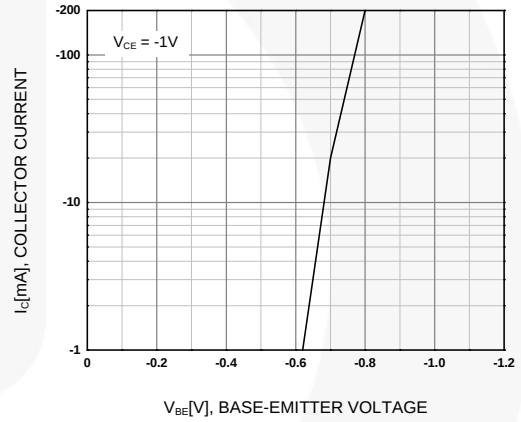


Figure 4. Base-Emitter On Voltage

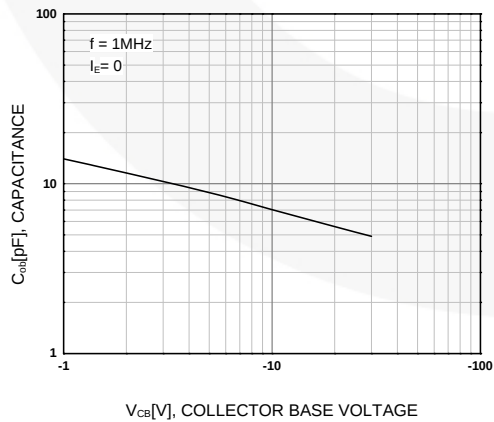
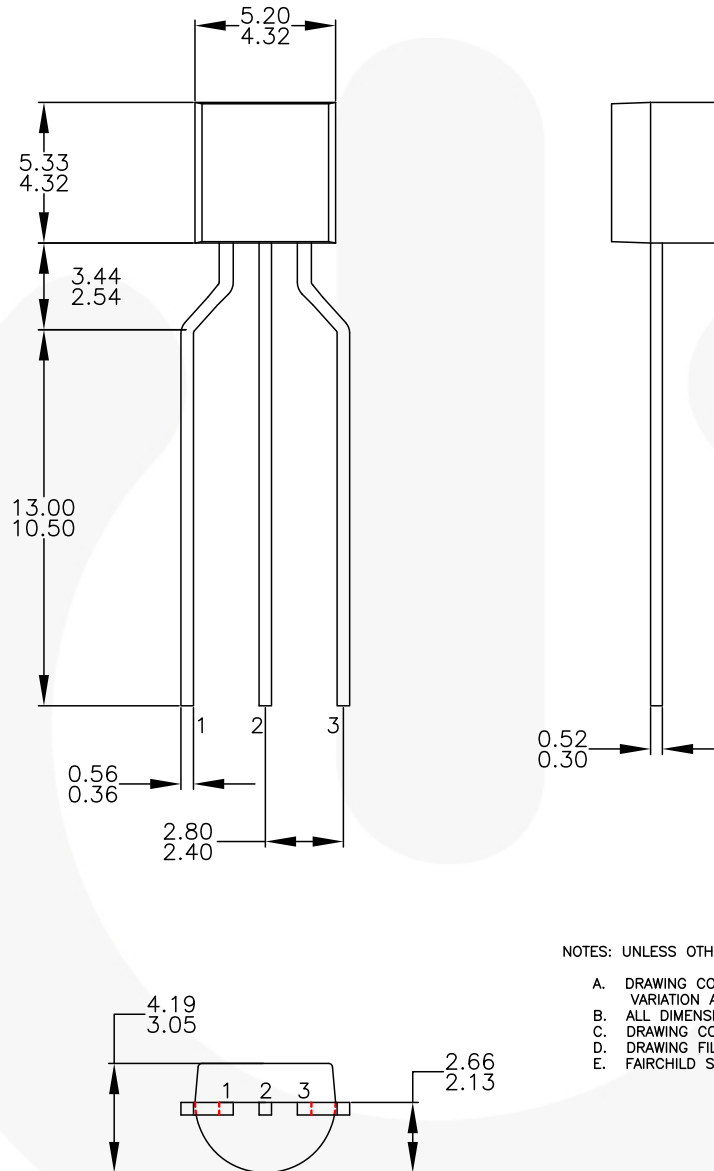


Figure 5. Collector Output Capacitance

Physical Dimensions



NOTES: UNLESS OTHERWISE SPECIFIED

- A. DRAWING CONFORMS TO JEDEC MS-013, VARIATION AC.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DRAWING CONFORMS TO ASME Y14.5M-2009.
- D. DRAWING FILENAME: MKT-ZA03FREV3.
- E. FAIRCHILD SEMICONDUCTOR.

Figure 6. 3-Lead, TO-92, Molded, 0.2 In Line Spacing Lead Form, Ammo Type



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