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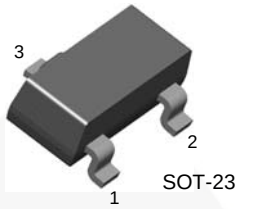
November 2014

KSC1623
NPN Epitaxial Silicon Transistor

Features

- Low Frequency Amplifier and High Frequency OSC.
- Complement to KSA812



1. Base 2. Emitter 3. Collector

Ordering Information

Part Number	Marking	Package	Packing Method
KSC1623YMTF	C1Y	SOT-23 3L	Tape and Reel
KSC1623GMTF	C1G	SOT-23 3L	Tape and Reel
KSC1623LMTF	C1L	SOT-23 3L	Tape and Reel

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	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	100	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	200	mW
	Derate Above 25°C	1.6	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	625	°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
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} = 6 V, I_C = 1 mA	90	200	600	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 100 mA, I_B = 10 mA		0.15	0.30	V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 100 mA, I_B = 10 mA		0.86	1.00	V
V_{BE}(on)	Base-Emitter On Voltage	V_{CE} = 6 V, I_C = 1 mA	0.55	0.62	0.65	V
f_T	Current Gain Bandwidth Product	V_{CE} = 6 V, I_C = 10 mA		250		MHz
C_{ob}	Output Capacitance	V_{CB} = 6 V, I_E = 0, f = 1 MHz		3		pF

h_{FE} Classification

Classification	O	Y	G	L
h_{FE}	90 ~ 180	135 ~ 270	200 ~ 400	300 ~ 600

Typical Performance Characteristics

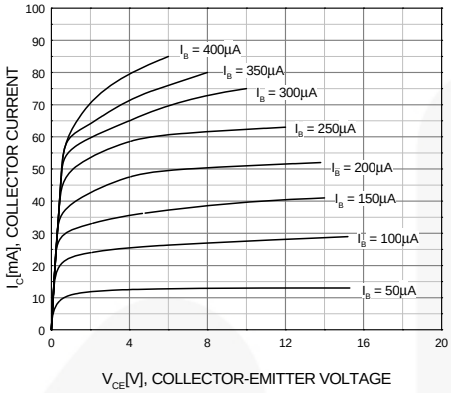


Figure 1. Static Charactersitic

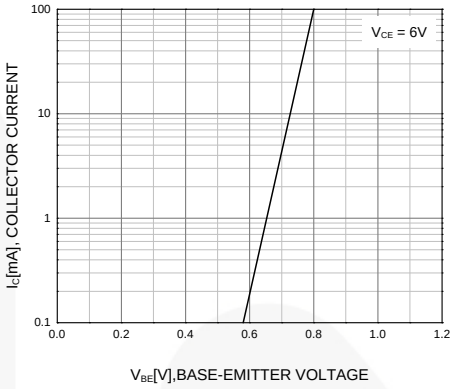


Figure 2. Transfer Characteristic

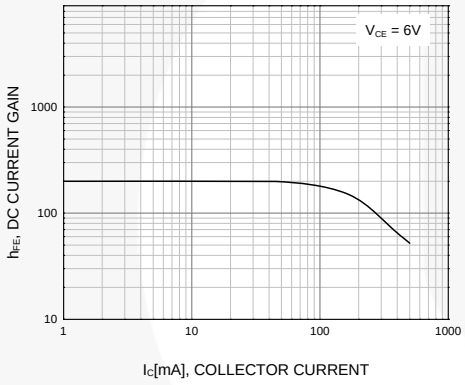


Figure 3. DC Current Gain

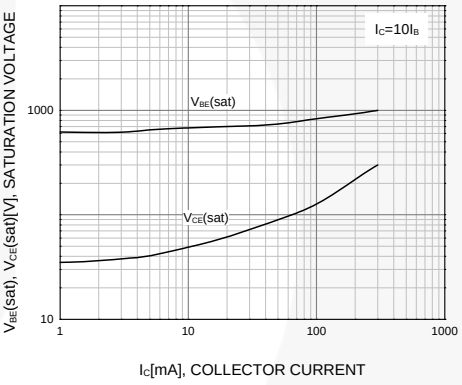


Figure 4. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

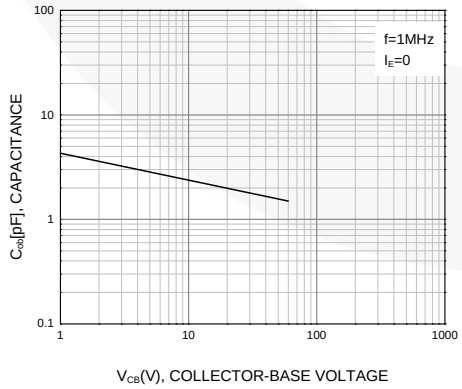


Figure 5. Output Capacitance

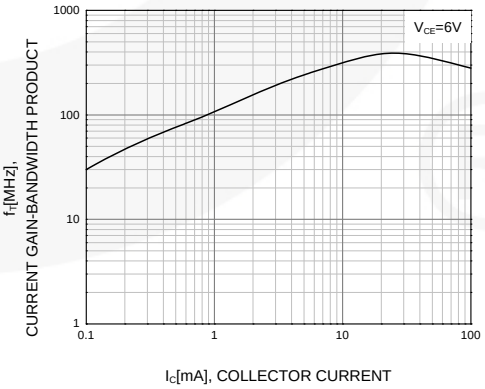


Figure 6. Current Gain Bandwidth Product

Physical Dimensions

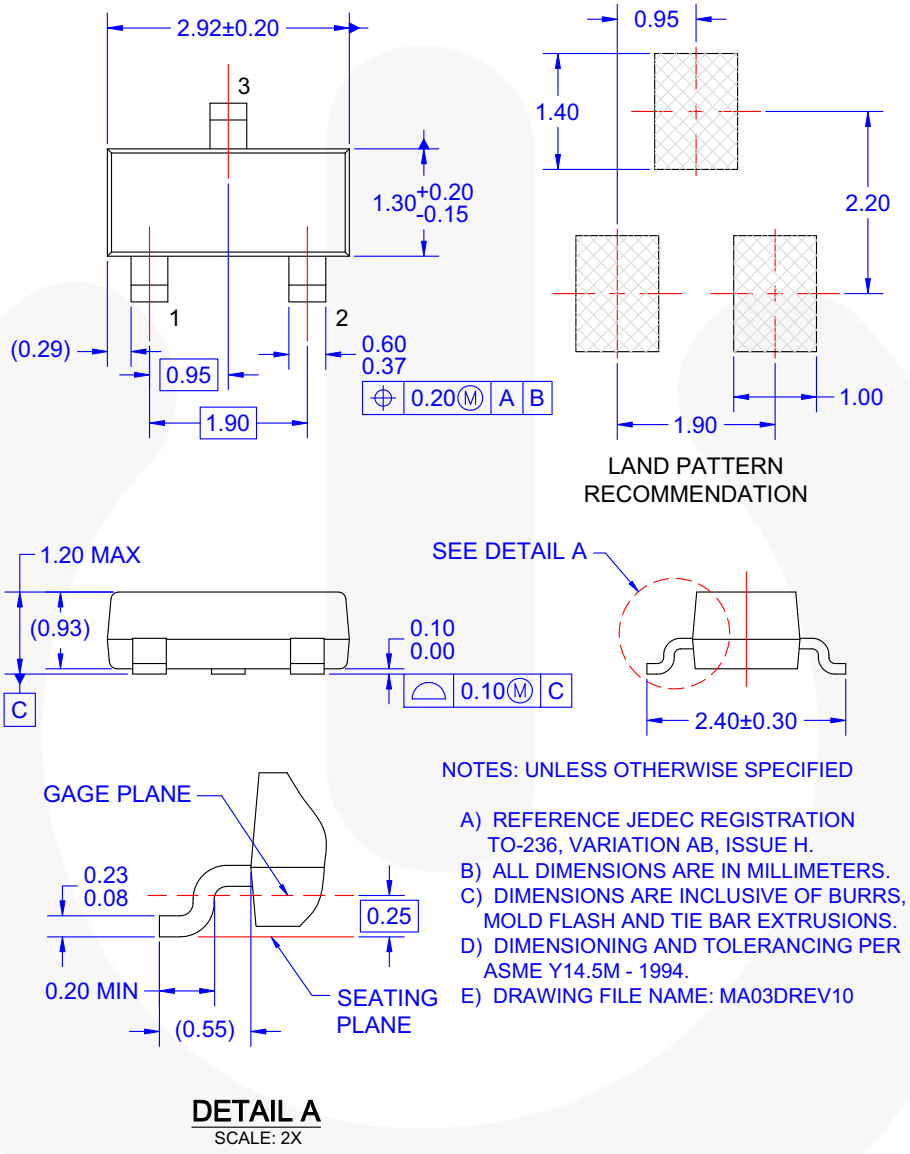


Figure 7. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE

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