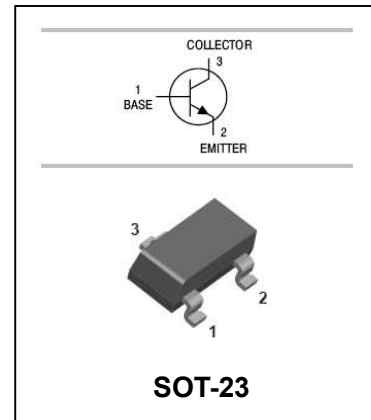


## Silicon Epitaxial Planar Transistor

## 2SC945

### FEATURES

- High voltage and high current.
- Excellent  $h_{FE}$  linearity.
- Low noise.



### APPLICATIONS

- Audio frequency amplifier.

### ORDERING INFORMATION

Type No.	Marking	Package Code
2SC945□	CR	SOT-23

□: none is for Lead Free package;  
“G” is for Halogen Free package.

### MAXIMUM RATING @ $T_a=25^{\circ}\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	60	V
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	100	mA
$P_C$	Collector Dissipation	200	mW
$T_j, T_{stg}$	Junction and Storage Temperature	-55 to +150	$^{\circ}\text{C}$

Silicon Epitaxial Planar Transistor

**2SC945**

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1mA, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.1mA, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$			0.1	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CE}=50V, I_B=0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE}=6V, I_C=1mA$ $V_{CE}=6V, I_C=0.1mA$	130 40		400	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=10mA$		0.15	0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=10mA$		0.86	1	V
Base to Emitter Voltage	$V_{BE}$	$V_{CE}=6V, I_C=1.0mA$	0.55	0.62	0.65	V
Transition frequency	$f_T$	$V_{CE}=6V, I_C=10mA$ $f=30MHz$	150			MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$		3.0	4.0	pF
Noise figure	NF	$V_{CE}=6V, I_C=0.1mA$ $f=1kHz, R_g=10k\Omega$		4	10	dB

CLASSIFICATION OF  $h_{FE(1)}$

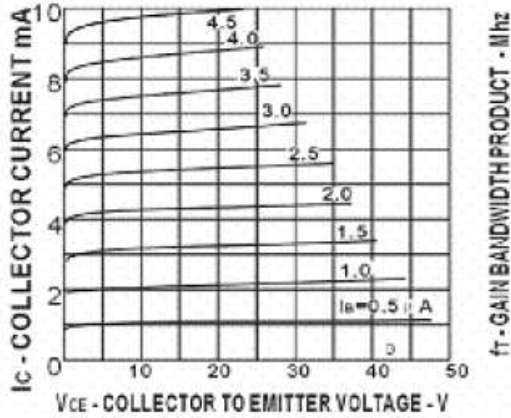
Rank	L	H
Range	130-200	200-400

Silicon Epitaxial Planar Transistor

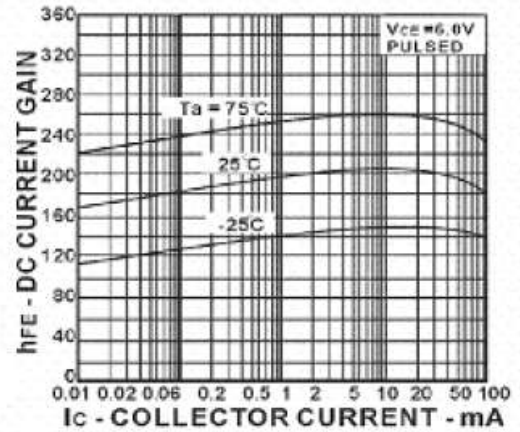
**2SC945**

TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

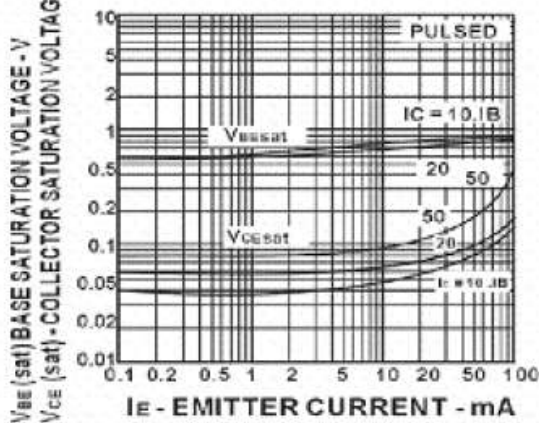
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



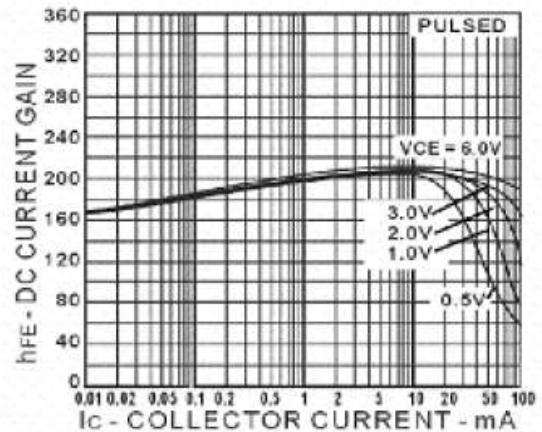
DC CURRENT GAIN vs. COLLECTOR CURRENT



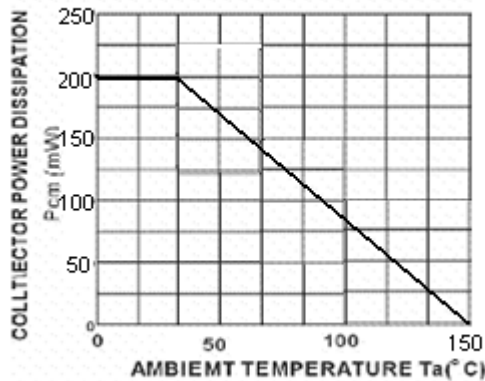
COLLECTOR AND BASE SATURATION VOLTAGE vs. COLLECTOR CURRENT



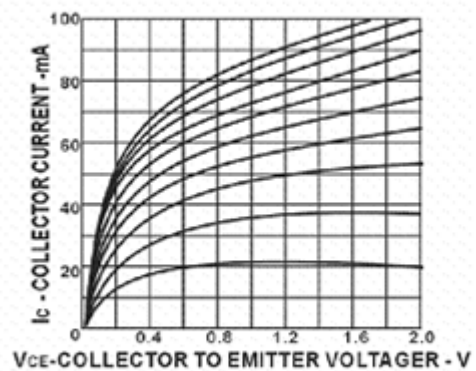
DC CURRENT GAIN vs. COLLECTOR CURRENT



TOTAL Power Dissipation vs AMBIENT Temperature



COLLECTOR CURRENT vs COLLECTOR TO EMITTER VOLTAGE



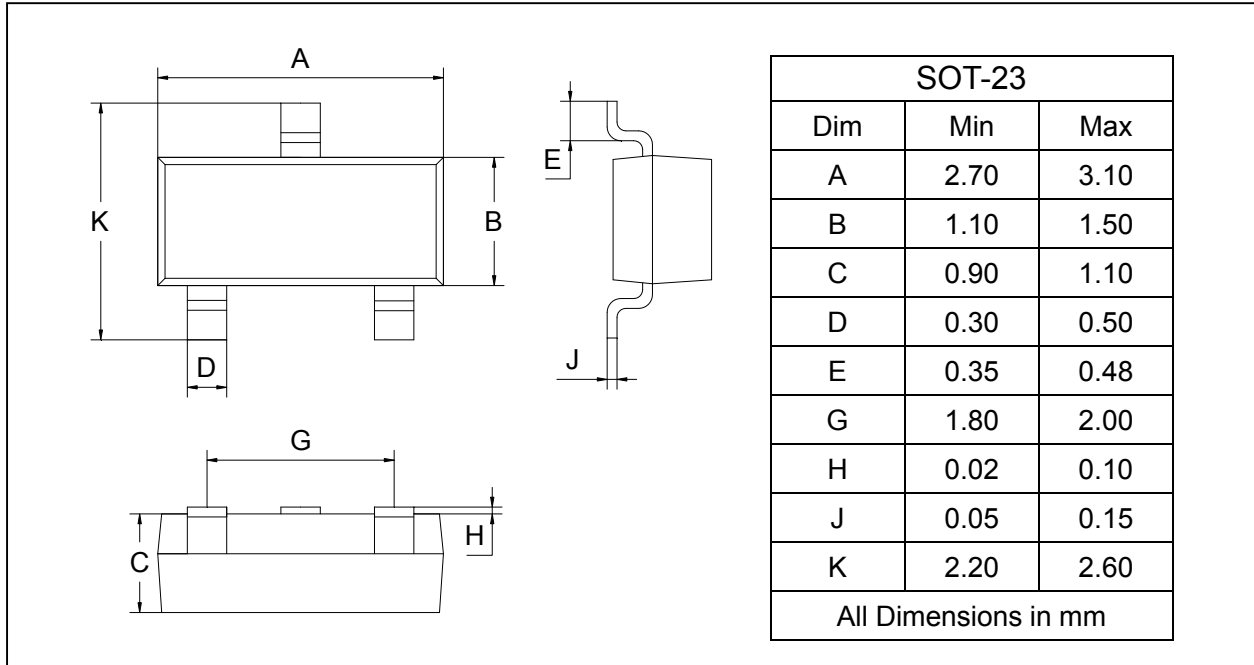
## Silicon Epitaxial Planar Transistor

## 2SC945

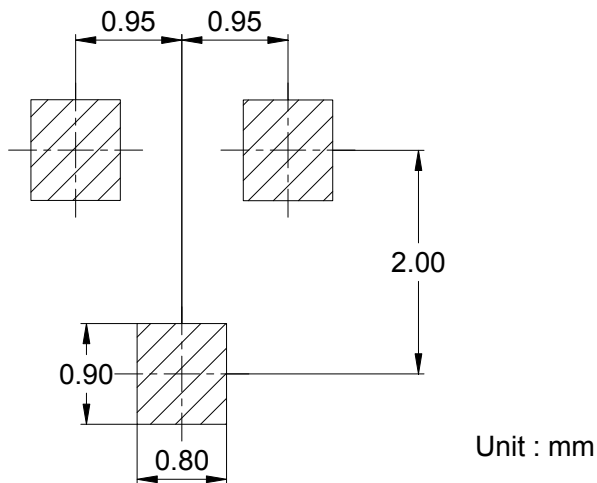
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
2SC945	SOT-23	3000/Tape&Reel