



Silicon Epitaxial Planar Transistor

2SC945

FEATURES

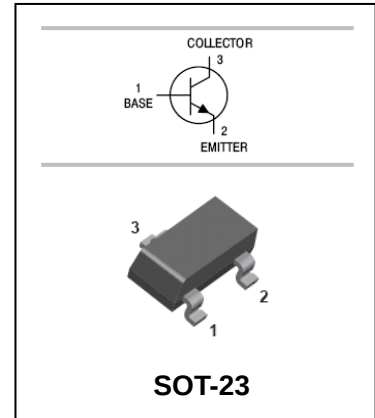
- High voltage and high current.
- Excellent h_{FE} linearity.
- Low noise.



Lead-free

APPLICATIONS

- Audio frequency amplifier.



ORDERING INFORMATION

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

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	$^{\circ}\text{C}$



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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	μA
Collector cut-off current	I_{CEO}	$V_{CE}=50V, I_B=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			0.1	μA
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 $h_{FE(1)}$

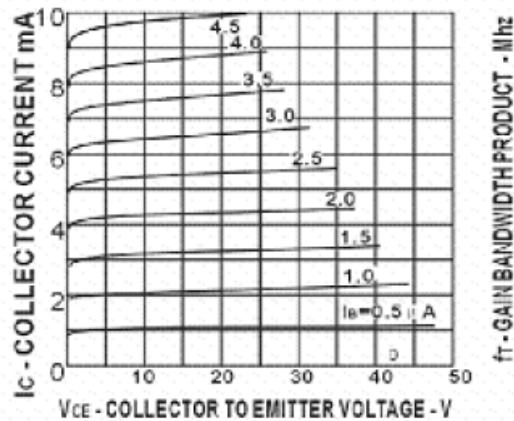
Rank	L	H
Range	130-200	200-400

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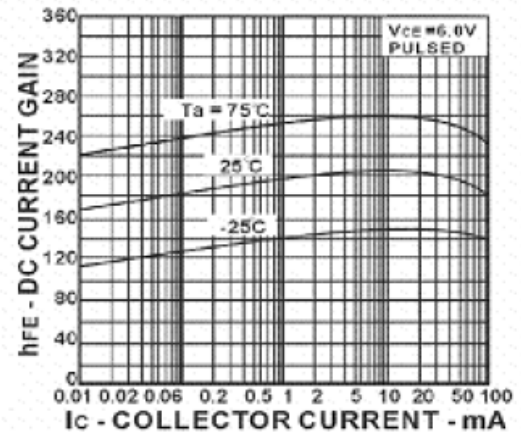
2SC945

TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

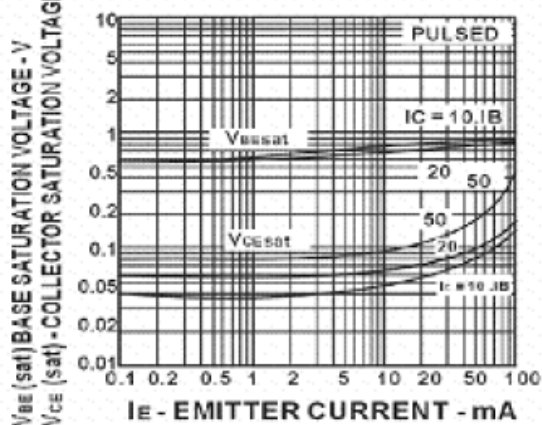
**COLLECTOR CURRENT
vs. COLLECTOR TO EMITTER VOLTAGE**



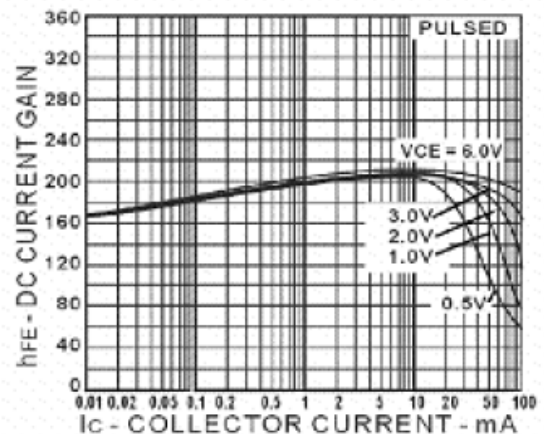
**DC CURRENT GAIN
vs. COLLECTOR CURRENT**



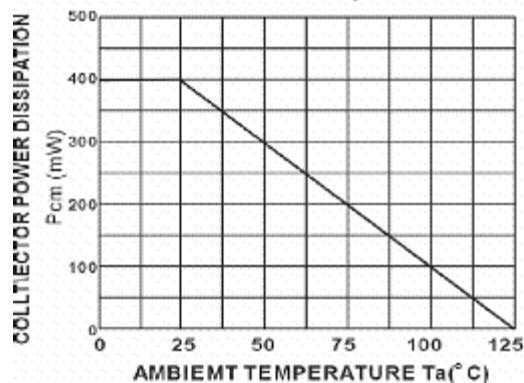
**COLLECTOR AND BASE SATURATION
VOLTAGE vs. COLLECTOR CURRENT**



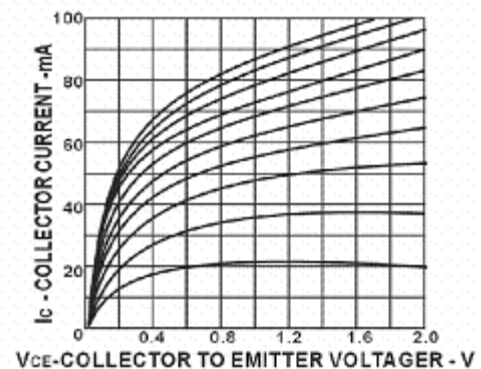
**DC CURRENT GAIN
vs. COLLECTOR CURRENT**



**TOTAL Power Dissipation
vs AMBIENT Temperature**



**COLLECTOR CURRENT
vs COLLECTOR TO EMITTER VOLTAGE**





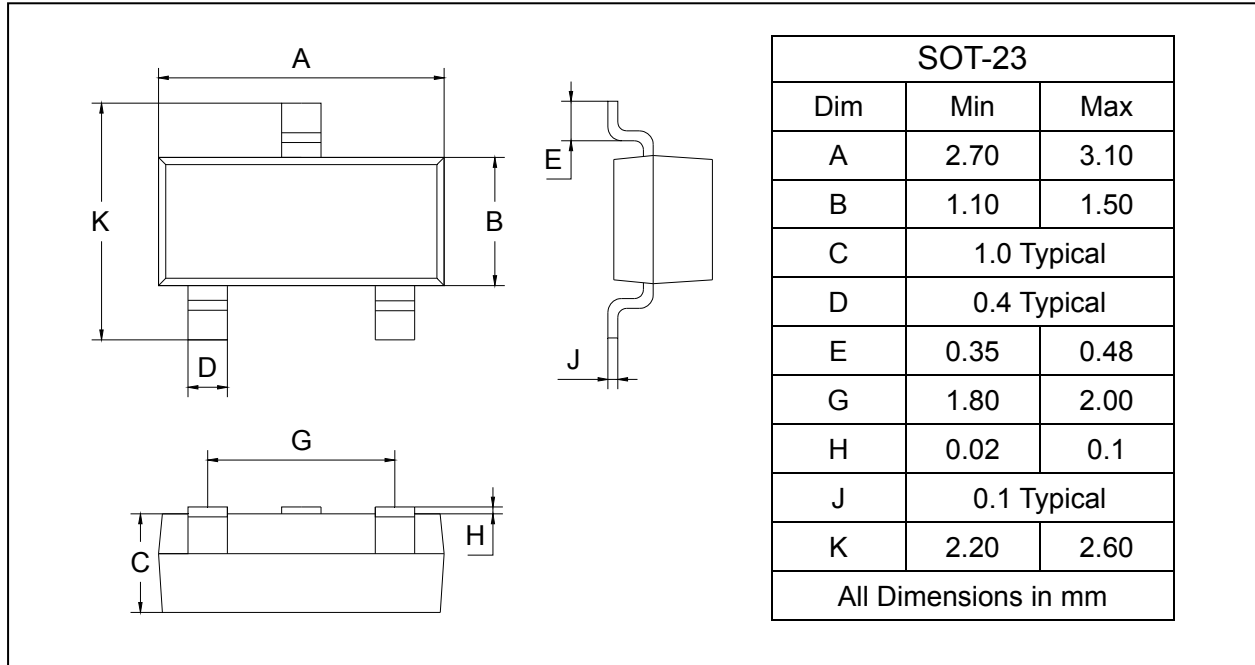
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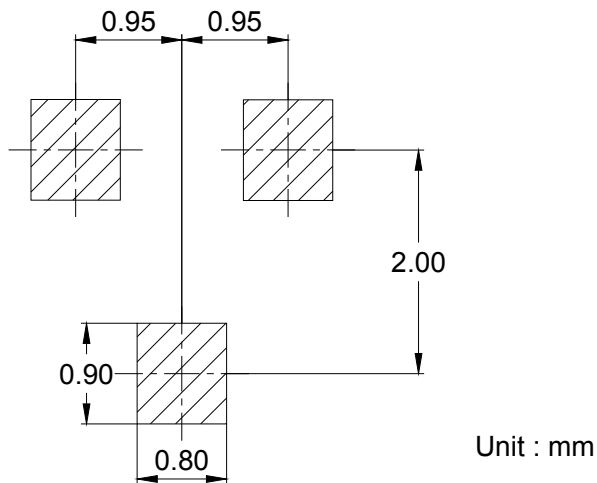
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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