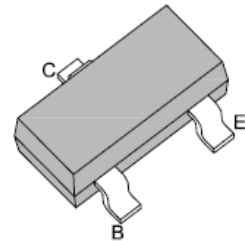
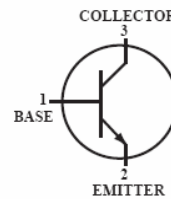


SMD Transistor (NPN)

Features

- NPN Silicon Epitaxial Planar Transistor
- Low Noise
- RoHS compliance



SOT-23



Mechanical Data

Case:	SOT-23, Plastic Package
Terminals:	Solderable per MIL-STD-202G, Method 208
Weight:	0.008 gram

Maximum Ratings *(T_{Ambient}=25°C unless noted otherwise)*

Symbol	Description	C945	Unit
	Marking Code	CR	
V_{CEO}	Collector-Emitter Voltage	50	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_c	Collector Current-Continuous	150	mA

Thermal Characteristics

Symbol	Description	C945	Unit
P_{tot}	Total Device Dissipation FR-5 Board, (Note 1) T _A = 25°C	200	mW
	Derate above 25°C	1.6	mW/°C
R_{θJA}	Thermal Resistance from Junction to Ambient	625	°C/W
T_J, T_{STG}	Junction and Storage Temperature Range	-55 to +150	°C

SMD Transistor (NPN)

C945

Electrical Characteristics ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Off Characteristics

Symbol	Description	C945		Unit	Conditions
		Min.	Max.		
V(BR)CEO	Collector-Emitter Breakdown Voltage	50	-	V	$I_C=1mA, I_B=0$
V(BR)CBO	Collector-Base Breakdown Voltage	60	-	V	$I_C=100\mu A, I_E=0$
V(BR)EBO	Emitter-Base Breakdown Voltage	5.0	-	V	$I_E=100\mu A, I_C=0$
I_{CEO}	Collector Cut-off Current	-	100	nA	$V_{CE}=60V, I_E=0$
I_{CBO}	Collector Cut-off Current	-	100	nA	$V_{CB}=45V, I_E=0$
I_{EBO}	Emitter Cut-off Current	-	100	nA	$V_{EB}=5V, I_C=0$

On Characteristics

Symbol	Description	C945		Unit	Conditions
		Min.	Max.		
h_{FE}	D.C. Current Gain	130	400		$V_{CE}=6V, I_C=1mA$
V_{CE(sat)}	Collector-Emitter Saturation Voltage	-	0.3	V	$I_C=100mA, I_B=10mA$
V_{BEF}	Base-Emitter Voltage	-	1.4	V	$I_E=310mA$
f_T	Transition Frequency	150	-	MHz	$V_{CE}=6V, I_C=10mA, f=30MHz$

Note: 1. FR-5=1.0x0.75x0.062 in.

Classification of h_{FE}

Rank	L	H
Range	130-200	200-400

Typical Characteristics Curves

Fig.1- Total Power Dissipation vs. Ambient Temperature

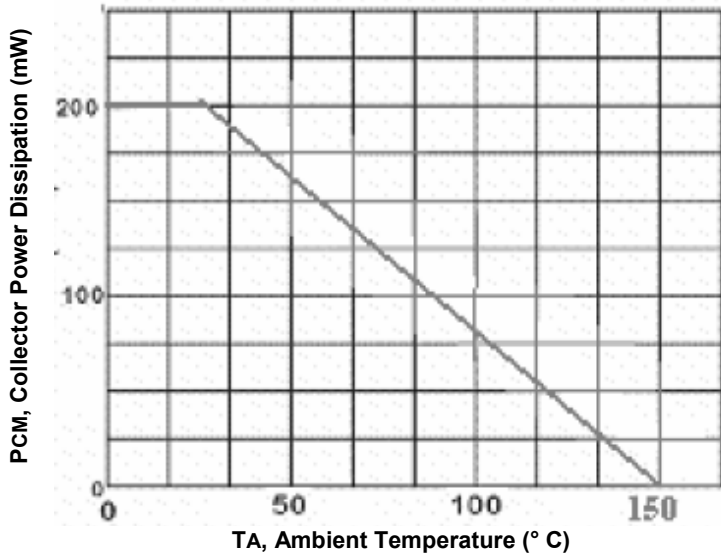


Fig.2- Collector Current vs. Collector to Emitter Voltage

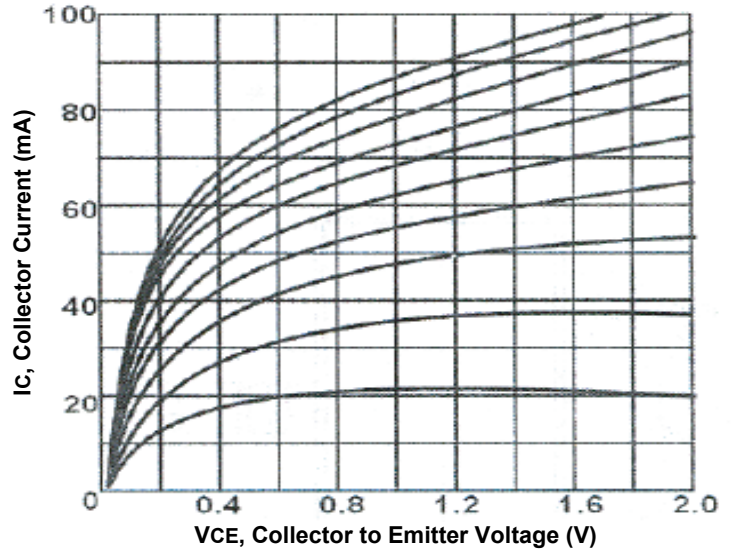


Fig.3- Collector Current vs. Collector to Emitter Voltage

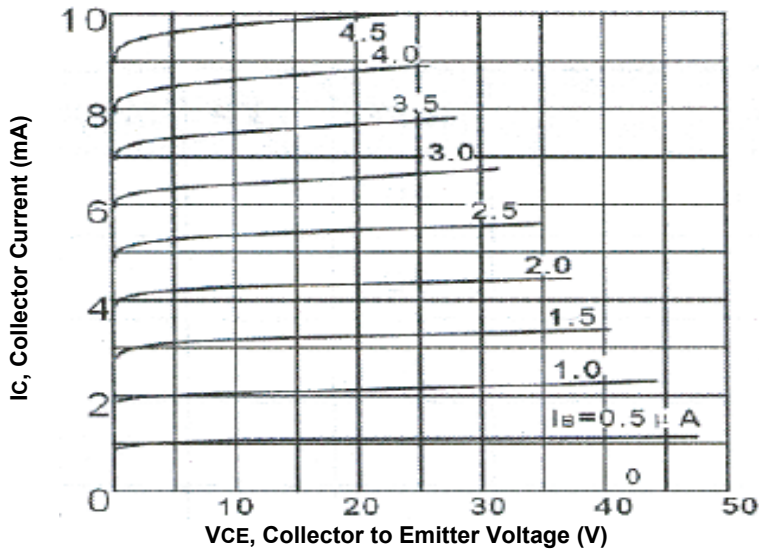
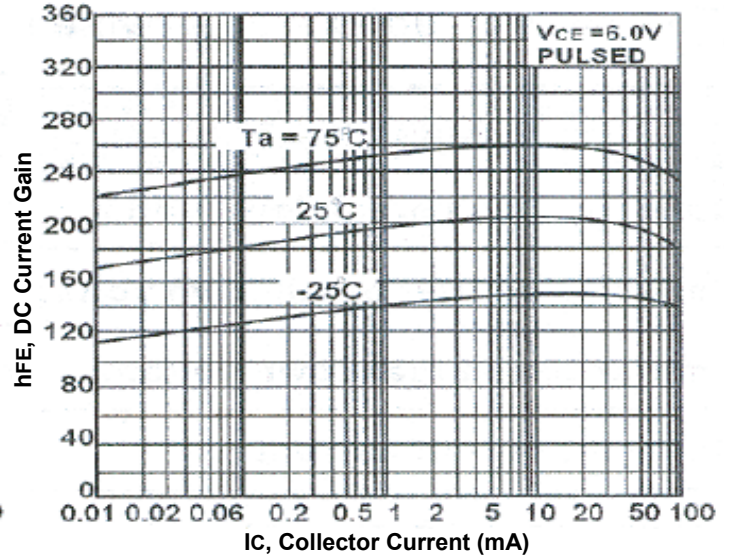


Fig.4- DC Current Gain vs. Collector Current



SMD Transistor (NPN)

C945

Fig.5- Collector and Base Saturation Voltage vs. Collector Current

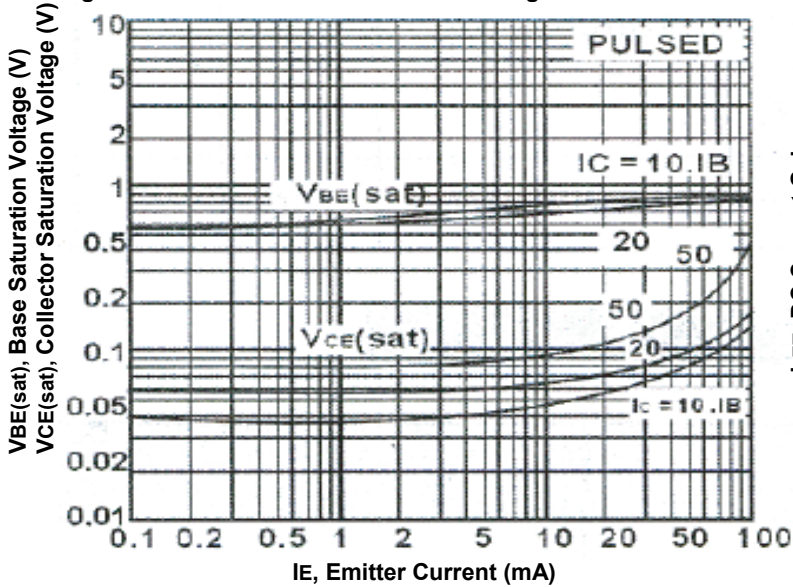
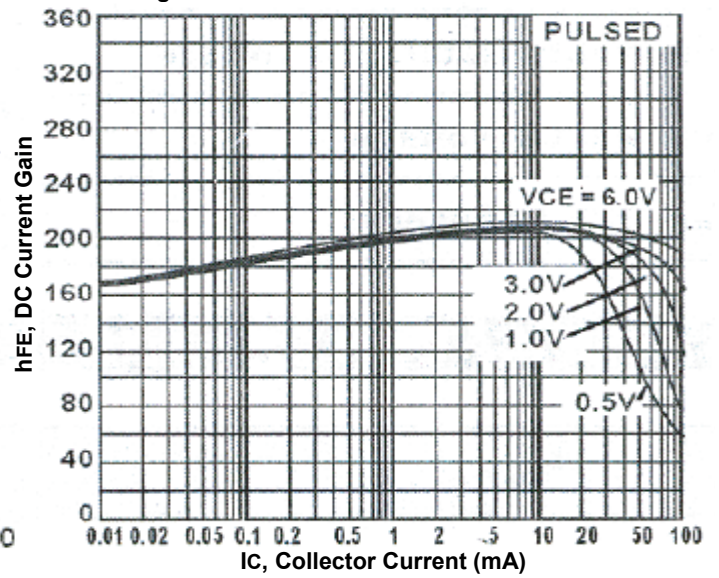


Fig.6- DC Current Gain vs. Collector Current

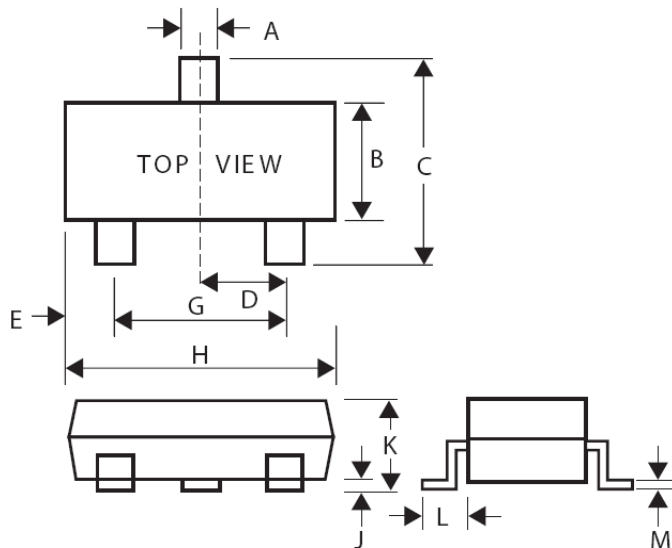


SMD Transistor (NPN)

C945

Dimensions in mm

SOT-23



Dim	Min	Max
A	0.35	0.51
B	1.19	1.80
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.60
L	0.30	0.61
M	0.076	0.25

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