



Micro Commercial Components



Micro Commercial Components  
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# MMBT945-L MMBT945-H

## Features

- Halogen free available upon request by adding suffix "-HF"
- Capable of 0.2Watts of Power Dissipation.
- Collector-current 0.15A
- Collector-base Voltage 60V
- Operating and storage junction temperature range: -55°C to +150°C
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: CR

### Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
<b>OFF CHARACTERISTICS</b>				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ( $I_C=1mA_{dc}, I_B=0$ )	50		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=100\mu A_{dc}, I_E=0$ )	60		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=100\mu A_{dc}, I_C=0$ )	5.0		Vdc
$I_{CBO}$	Collector Cutoff Current ( $V_{CB}=60V_{dc}, I_E=0A_{dc}$ )		0.1	$\mu A_{dc}$
$I_{CER}$	Collector Cutoff Current ( $V_{CE}=55V_{dc}, R=10M\Omega$ )		0.1	$\mu A_{dc}$
$I_{EBO}$	Emitter Cutoff Current ( $V_{EB}=5.0V_{dc}, I_C=0A_{dc}$ )		0.1	$\mu A_{dc}$

### ON CHARACTERISTICS

$h_{FE(1)}$	DC Current Gain ( $I_C=1.0mA_{dc}, V_{CE}=6.0V_{dc}$ )	130	400	
$h_{FE(2)}$	DC Current Gain ( $I_C=0.1mA_{dc}, V_{CE}=6.0V_{dc}$ )	40		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=100mA_{dc}, I_B=10mA_{dc}$ )		0.3	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C=100mA_{dc}, I_B=10mA_{dc}$ )		1.0	Vdc
$C_{ob}$	Collector output capacitance ( $V_{CB}=10V, I_E=0, f=1MHz$ )		3.0	pF

### SMALL-SIGNAL CHARACTERISTICS

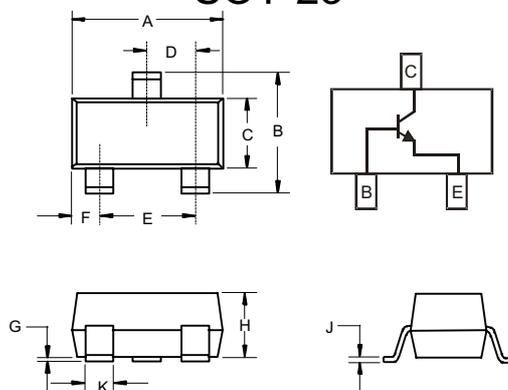
$f_T$	Transistor Frequency ( $I_C=10mA_{dc}, V_{CE}=6.0V_{dc}, f=30MHz$ )	150		MHz
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### CLASSIFICATION OF $h_{FE(1)}$

Rank	L	H
Range	130-200	200-400

## NPN Silicon Plastic-Encapsulate Transistor

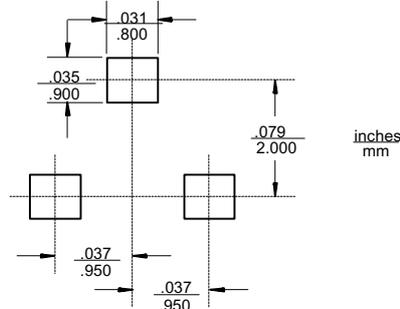
### SOT-23



#### DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

### Suggested Solder Pad Layout





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### Ordering Information :

Device	Packing
Part Number-TP	Tape & Reel; 3 Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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