

# Transistor NPN

## 140V 0.3W SOT-23

MMBT5550

MERITEK

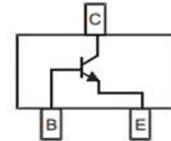
### FEATURE

- Epitaxial Planar Die Construction
- Collector-emitter Voltage  $V_{CE}=140V$
- Collector current: 600mA
- Application: Signal Processing, Switching, Amplification



### MECHANICAL DATA

- Case: SOT-23, Molded Plastic Meets UL94V-0
- Terminals: Solderable per MIL-STD-750, Method 2026



### MAXIMUM RATING

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	160	V
Collector-Emitter Voltage	$V_{CEO}$	140	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	600	mA
Total Power Dissipation	$P_{tot}$	300	mW
Typical Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	416	$^{\circ}C/W$
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 ~ +150	$^{\circ}C$

### ELECTRICAL CHARACTERISTICS

Parameter- ON Characteristic	Conditions	Symbol	Min.	Max.	Unit
DC Current Gain	$V_{CE}=5V, I_C=1.0mA$	$h_{FE}$	60	-	-
	$V_{CE}=5V, I_C=10mA$		60	300	
	$V_{CE}=5V, I_C=50mA$		20	-	
Collector-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$	$V_{CE(SAT)}$	-	0.15	V
	$I_C=50mA, I_B=5mA$		-	0.25	V
Base-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$	$V_{BE(SAT)}$	-	1.0	V
	$I_C=50mA, I_B=5mA$		-	1.2	V
Parameter- OFF Characteristics	Conditions	Symbol	Min.	Max.	Unit
Collector-Base Breakdown Voltage	$I_C=100\mu A, I_E=0$	$V_{(BR)CBO}$	160	-	V
Collector-Emitter Breakdown Voltage	$I_C=1mA, I_B=0$	$V_{(BR)CEO}$	140	-	V
Emitter-Base Breakdown Voltage	$I_E=10\mu A, I_C=0$	$V_{(BR)EBO}$	6	-	V
Collector Base Cut-Off Current	$V_{CB}=100V, I_E=0$	$I_{CBO}$	-	100	nA
Emitter Base Cut-Off Current	$V_{EB}=4V, I_C=0$	$I_{EBO}$	-	50	nA

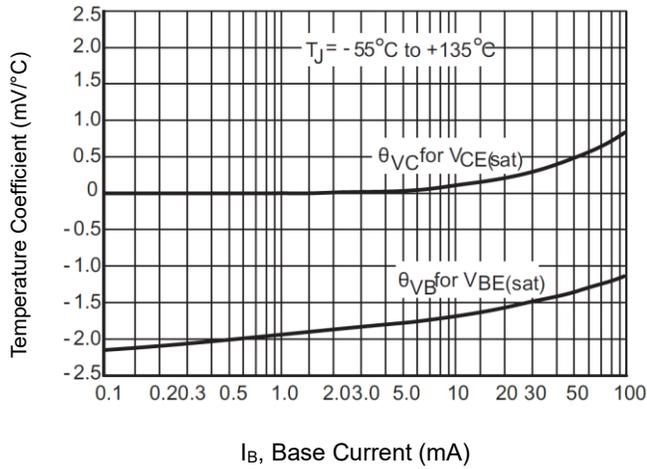
Note:

1.  $T_A=25^{\circ}C$  unless otherwise noted.

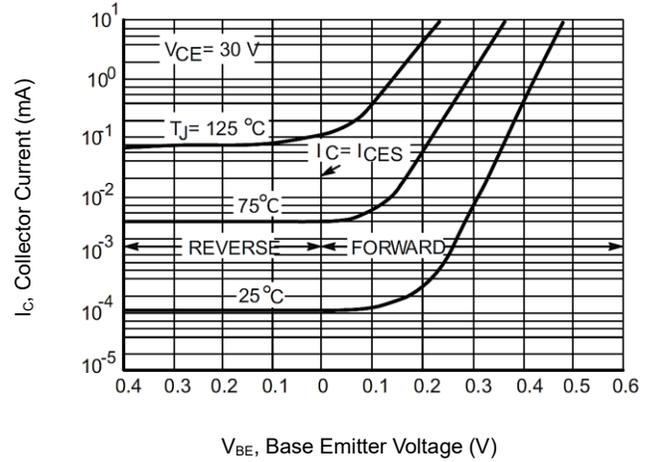
2. Pulse test : pulse width 300us, duty cycle 2.0%

**CHARACTERISTIC CURVES**

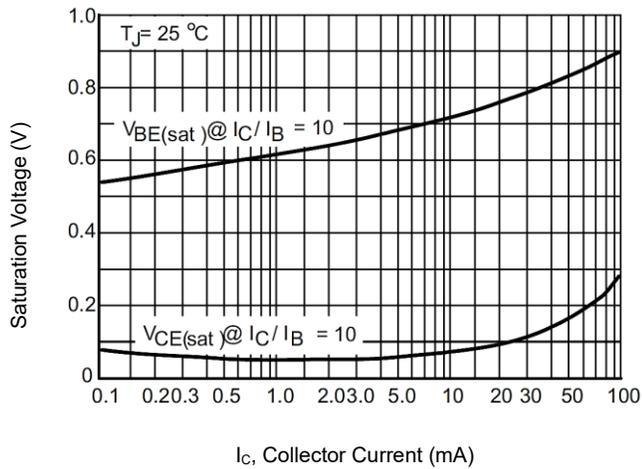
**Collector Saturation Region**



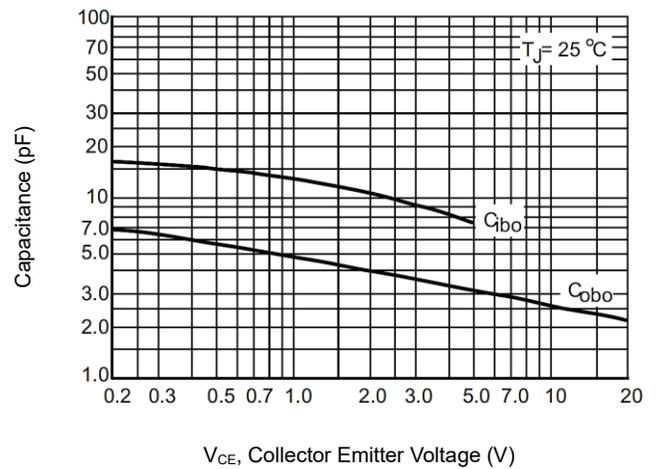
**Collector Current vs Base-Emitter Voltage**



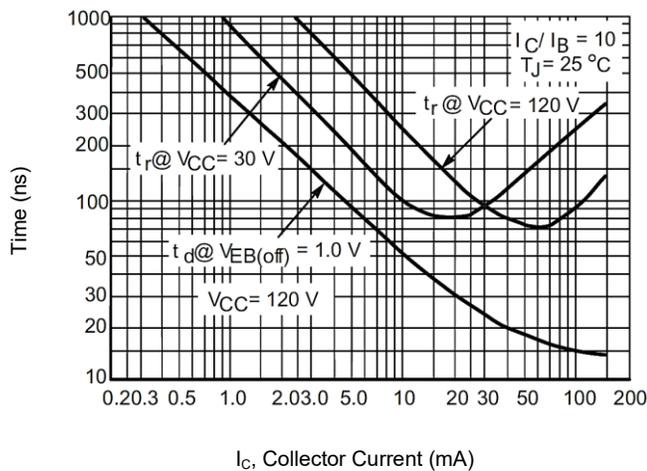
**Saturation Voltage**



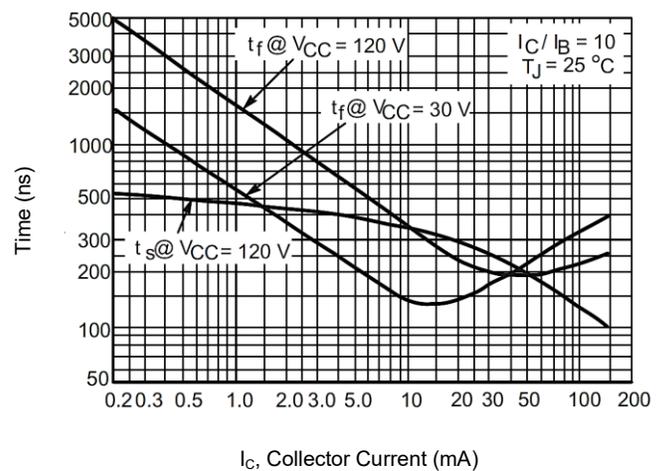
**Capacitance**



**Turn-On Time**

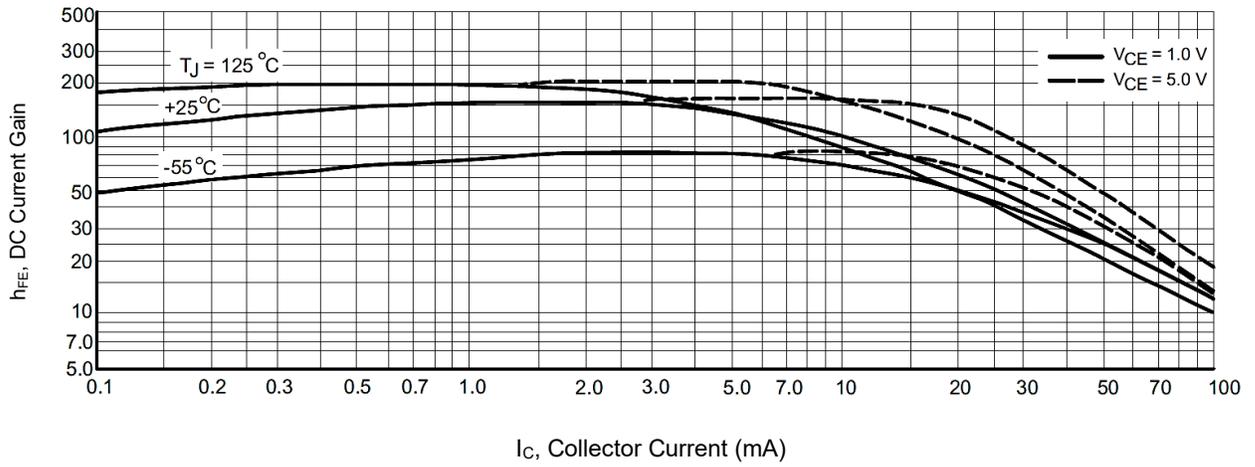


**Turn-Off Time**

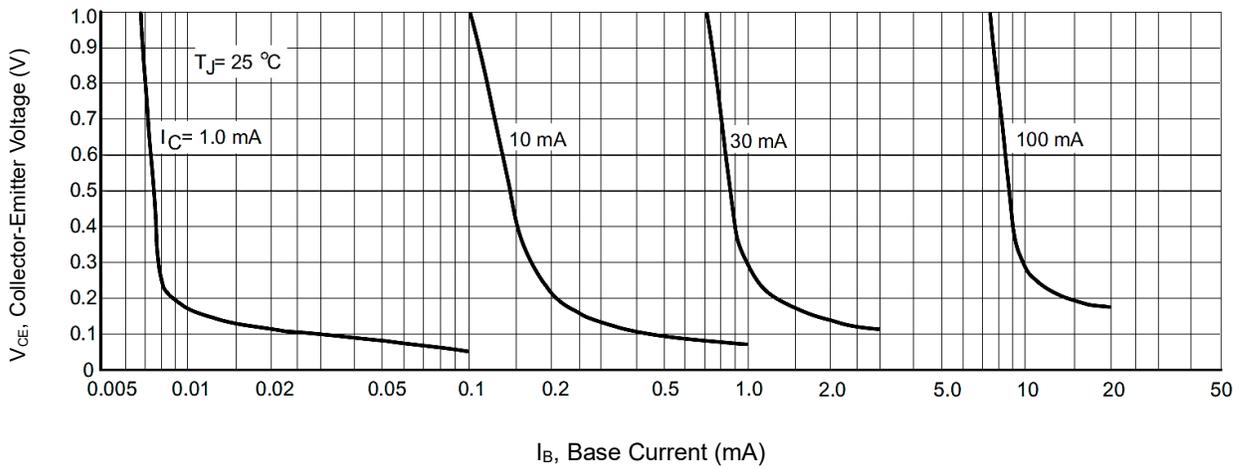


**CHARACTERISTIC CURVES**

**DC Current Gain**



**Collector Saturation Region**



**DIMENSIONS**

Item	Min (mm)	Max (mm)
A	0.89	1.30
b	0.30	0.50
c	0.09	0.18
D	2.80	3.04
e	0.85	1.15
e1	1.70	2.10
E	2.10	2.75
E1	1.20	1.60
X	0.80	
X1	0.95	
Y	1.10	
Y1	0.90	
Y2	2.90	

