

Transistor NPN

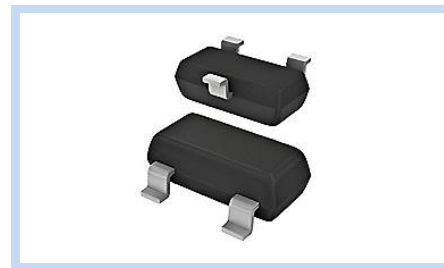
160V 0.3W SOT-23

MMBT5551

MERITEK

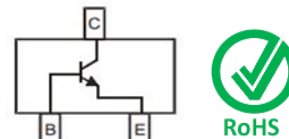
FEATURE

- Collector-emitter Voltage $V_{CE}=160V$
- Collector current: 600mA
- Epitaxial Planar Die Construction
- 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}	180	V
Collector-Emitter Voltage	V_{CEO}	160	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}	80	-	-
	$V_{CE}=5V, I_C=10mA$		100	300	
	$V_{CE}=5V, I_C=50mA$		30	-	
Collector-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$	$V_{CE(SAT)}$	-	0.15	V
	$I_C=50mA, I_B=5mA$		-	0.20	V
Base-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$	$V_{BE(SAT)}$	-	1.0	V
	$I_C=50mA, I_B=5mA$		-	1.0	V
Parameter- OFF Characteristics	Conditions	Symbol	Min.	Max.	Unit
Collector-Base Breakdown Voltage	$I_C=100\mu A, I_E=0$	$V_{(BR)CBO}$	180	-	V
Collector-Emitter Breakdown Voltage	$I_C=1mA, I_B=0$	$V_{(BR)CEO}$	160	-	V
Emitter-Base Breakdown Voltage	$I_E=10\mu A, I_C=0$	$V_{(BR)EBO}$	6	-	V
Collector Base Cut-Off Current	$V_{CB}=120V, I_E=0$	I_{CBO}	-	50	nA
Emitter Base Cut-Off Current	$V_{EB}=4V, I_C=0$	I_{EBO}	-	50	nA

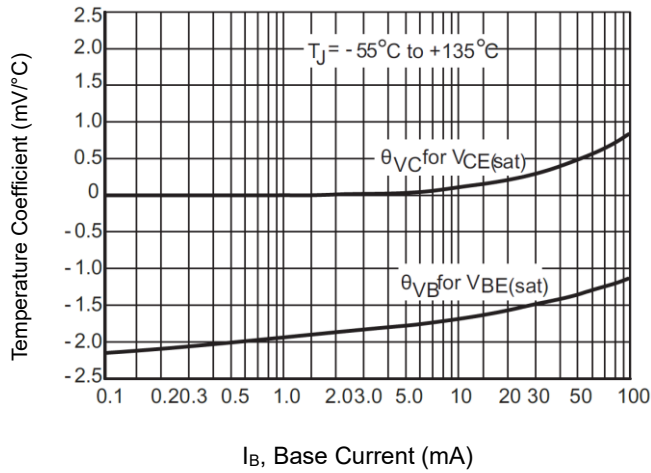
Note:

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

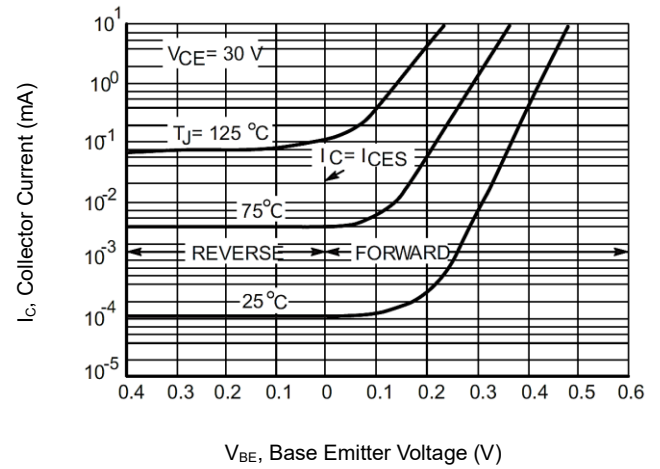
2. Pulse test : pulse width 300us, duty cycle 2.0%

CHARACTERISTIC CURVES

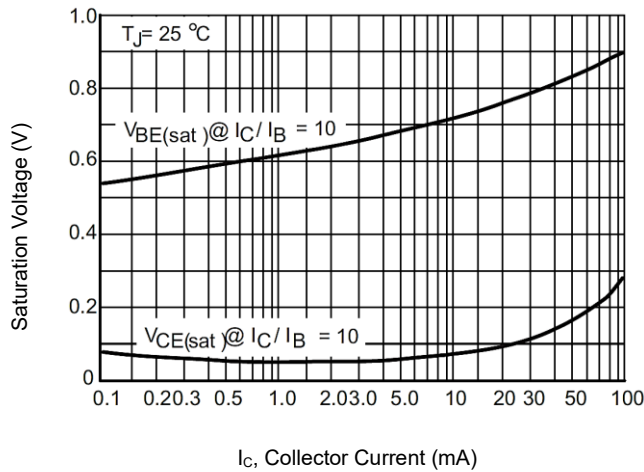
Collector Saturation Region



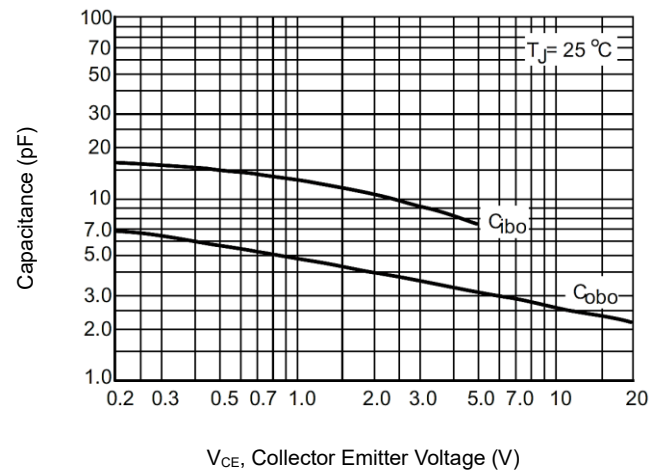
Collector Current vs Base-Emitter Voltage



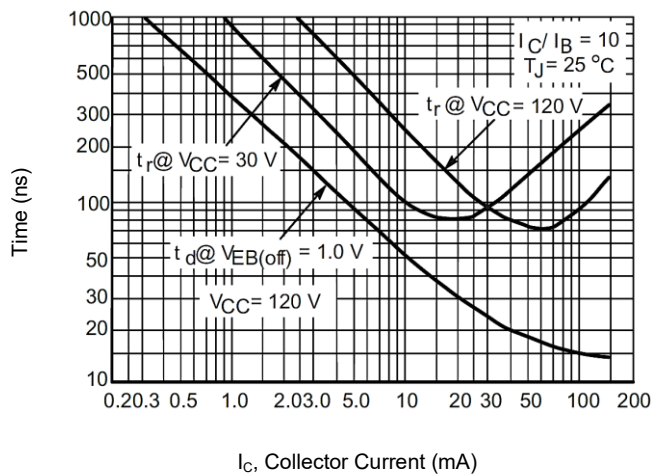
Saturation Voltage



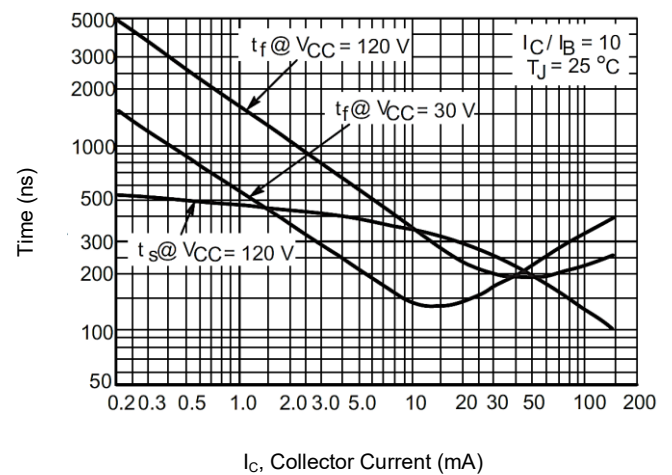
Capacitance



Turn-On Time

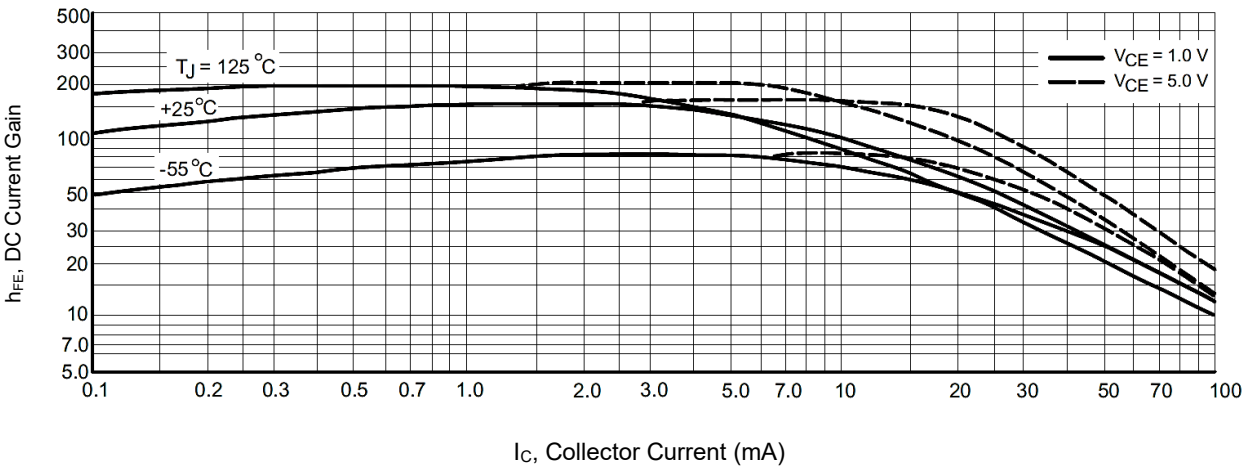


Turn-Off Time

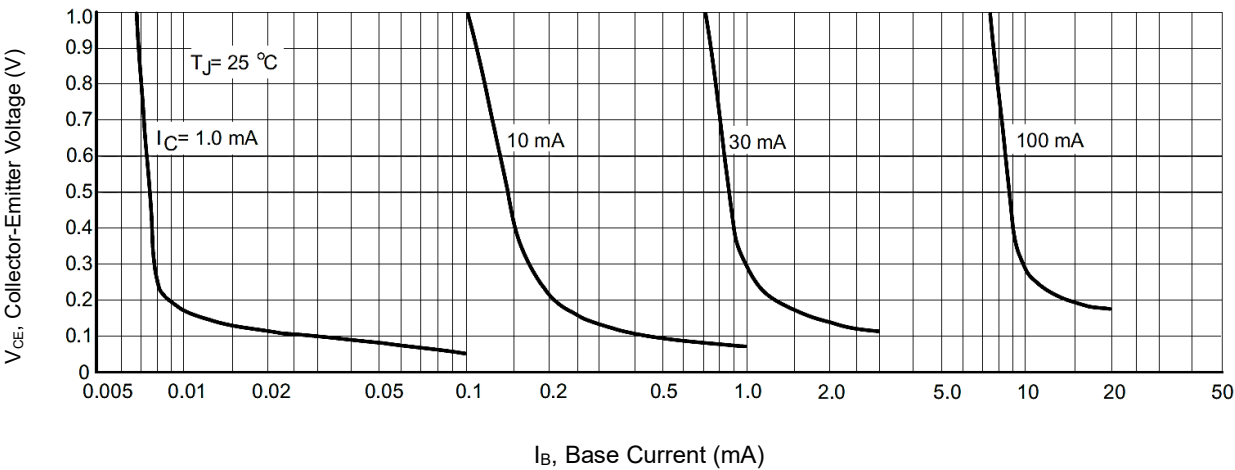


CHARACTERISTIC CURVES

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	

