

NPN Transistor

160V 350mW SOT-23

MMBT5551

MERITEK

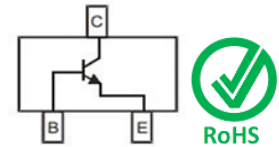
FEATURE

- Epitaxial Planar Die Construction
- High Surge Current Capability
- Application: Signal Processing, Switching, Amplification



MECHANICAL DATA

- Case: SOT-23, Molded Plastic
- 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}	6.0	V
Collector Current	I_C	600	mA
Total Power Dissipation	P_{tot}	350	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 ~+150	°C

ELECTRICAL CHARACTERISTICS

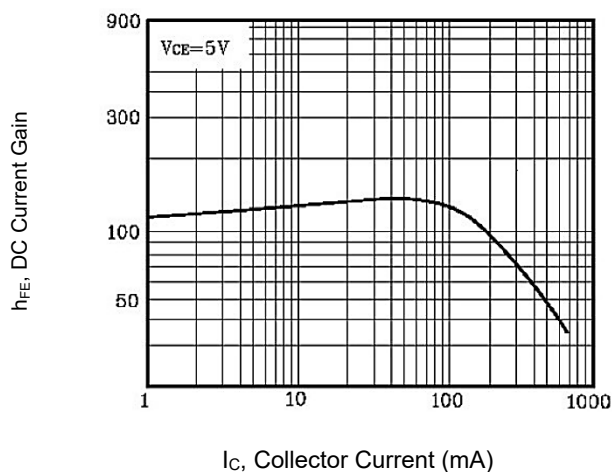
Parameter- ON Characteristic	Conditions	Symbol	Min.	Max.	Unit
DC Current Gain	$V_{CE}=5V, I_C=1.0mA$	h_{FE}	80	-	-
	$V_{CE}=5V, I_C=10mA$		80	250	
	$V_{CE}=5V, I_C=50mA$		30	-	
Collector-Emitter Saturation Voltage	$I_C=10mA, I_B=1mA$	$V_{CE(SAT)}$	-	0.15	V
	$I_C=50mA, I_B=5mA$		-	0.20	V
Base-Emitter 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	$I_E=10\mu A, I_C=0$	$V_{(BR)EBO}$	6.0	-	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
Output Capacitance	$V_{CB}=10V, I_E=0, f=1MHz$	C_{ob}	-	6.0	pF
Parameter-Small Signal	Conditions	Symbol	Min.	Max.	Unit
Current-Gain – Bandwidth Product	$I_C=10mA, V_{CE}=10V, f=100MHz$	f_T	100	300	MHz

Note:

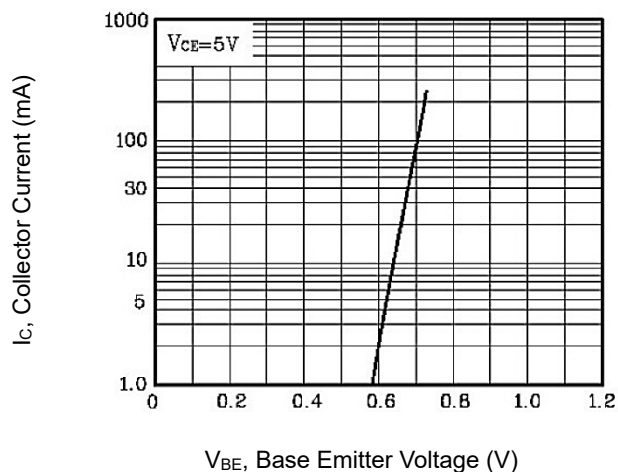
1. $T_A=25^{\circ}C$ unless otherwise noted.

CHARACTERISTIC CURVES

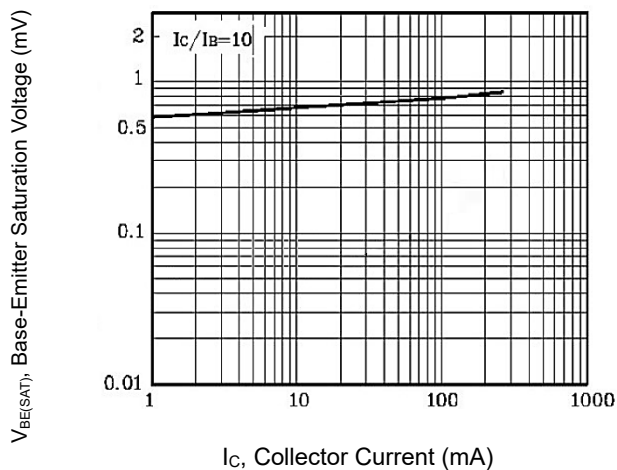
DC Current Gain



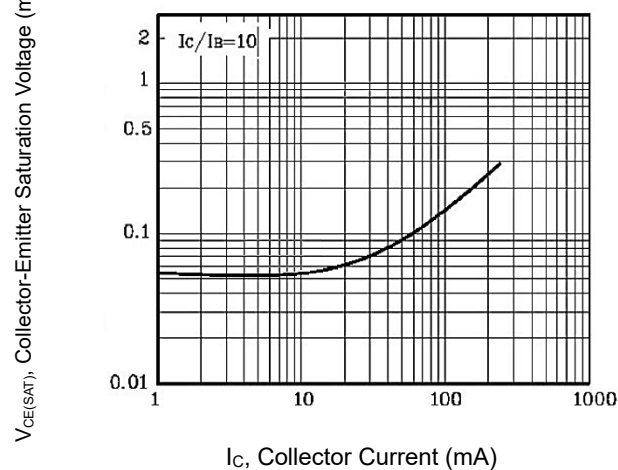
Collector Current vs Base-Emitter Voltage



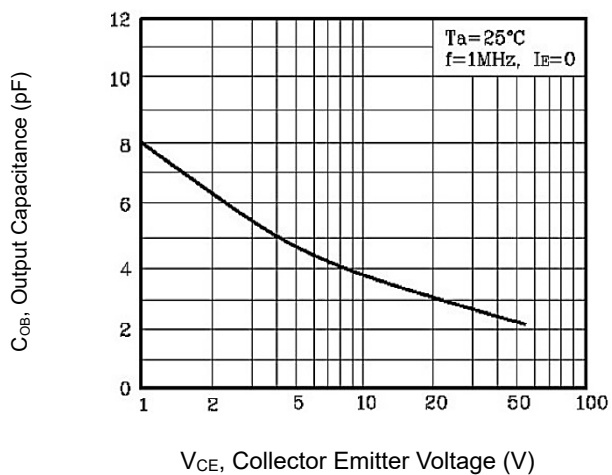
Base-Emitter Saturation Voltage



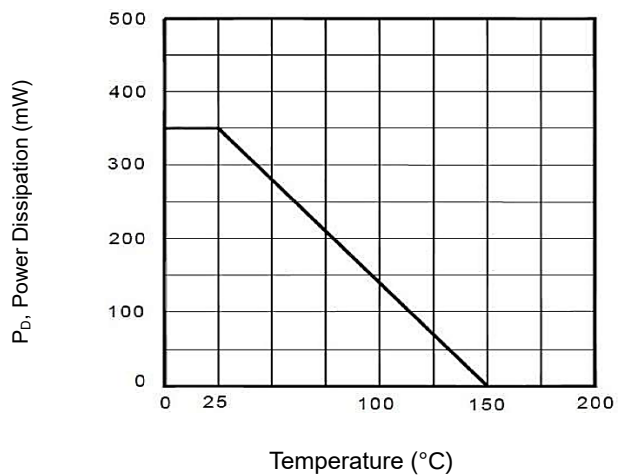
Collector-Emitter Saturation Voltage



Output Characteristics Curves



Power Derating Curves



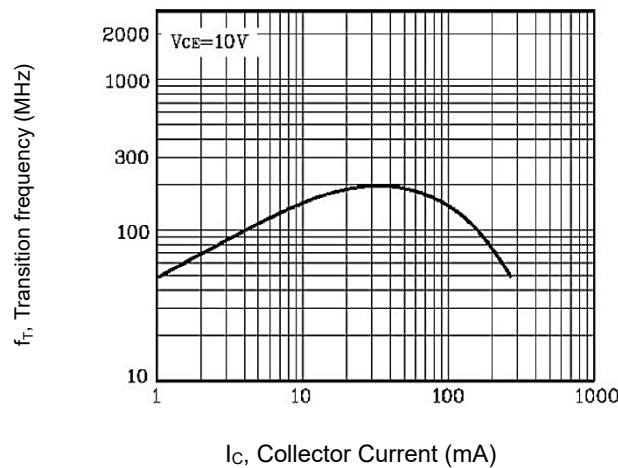
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CHARACTERISTIC CURVES

Transition frequency



DIMENSIONS

Item	Min (mm)	Max (mm)
A1	--	0.10
A2	0.79	1.40
b	0.30	0.50
c	0.08	0.20
D	2.70	3.10
e	0.89	1.02
e1	1.78	2.04
E	2.10	2.80
E1	1.20	1.60
L	0.15	--
X	0.80	
X1	0.95	
Y	1.00	
Y1	1.00	
Y2	3.00	

