



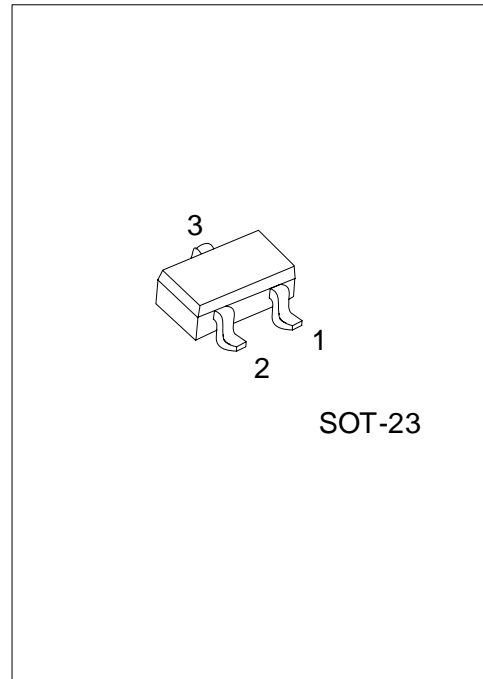
## MMBT5551

## NPN EPITAXIAL SILICON TRANSISTOR

### HIGH VOLTAGE SWITCHING TRANSISTOR

#### FEATURES

- \* High Collector-Emitter Voltage:  
V<sub>CEO</sub>=160V
- \* High current gain



\*Pb-free plating product number:MMBT5551L

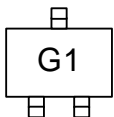
[www.DataSheet4U.com](http://www.DataSheet4U.com)

#### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
MMBT5551-x-AE3-6-R	MMBT5551L-x-AE3-6-R	SOT-23	E	B	C	Tape Reel

<p>MMBT5551L-x-AE3-6-R</p> <p>(1)Packing Type (2)Pin Assignment (3)Package Type (4)Rank (5)Lead Plating</p>	<p>(1) R: Tape Reel (2) refer to Pin Assignment (3) AE3: SOT-23 (4) x: refer to Classification of h<sub>FE</sub> (5) L: Lead Free Plating, Blank: Pb/Sn</p>
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#### MARKING



# MMBT5551

## NPN EPITAXIAL SILICON TRANSISTOR

### ■ ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector -Base Voltage	$V_{CBO}$	180	V
Collector -Emitter Voltage	$V_{CEO}$	160	V
Emitter -Base Voltage	$V_{EBO}$	6	V
DC Collector Current	$I_C$	600	mA
Power Dissipation	$P_D$	350	mW
Operating and Storage Junction Temperature	$T_J, T_{STG}$	-55 ~ +150	

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ ELECTRICAL CHARACTERISTICS (Ta= 25 °C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$V_{CBO}$	$I_C=100\mu A, I_E=0$	180			V
Collector-Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1mA, I_B=0$	160			V
Emitter-Base Breakdown Voltage	$V_{EBO}$	$I_E=10\mu A, I_C=0$	6			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=120V, I_E=0$			50	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{BE}=4V, I_C=0$			50	nA
DC Current Gain(note)	$h_{FE}$	$V_{CE}=5V, I_C=1mA$	80	160	400	
		$V_{CE}=5V, I_C=10mA$	80			
		$V_{CE}=5V, I_C=50mA$	80			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10mA, I_B=1mA$ $I_C=50mA, I_B=5mA$			0.15 0.2	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=10mA, I_B=1mA$ $I_C=50mA, I_B=5mA$			1 1	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=10mA, f=100MHz$	100		300	MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, I_E=0, f=1MHz$			6.0	pF
Noise Figure	$N_F$	$I_C=0.25mA, V_{CE}=5V$ $R_S=1k\Omega, f=10Hz \sim 15.7kHz$			8	dB

Note: Pulse test: PW<300μs, Duty Cycle<2%

### ■ CLASSIFICATION OF $h_{FE}$

RANK	A	B	C
RANGE	80-170	150-240	200-400

## TYPICAL CHARACTERISTICS

Fig.1 Collector Output Capacitance

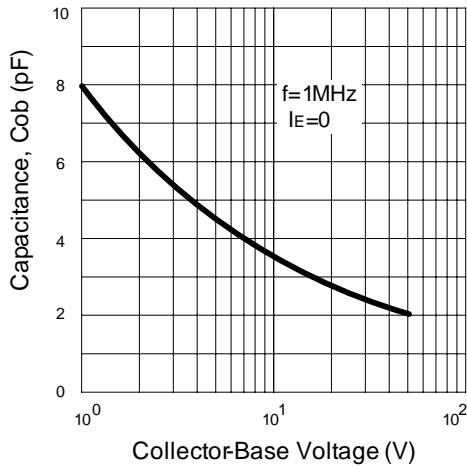


Fig.2 DC Current Gain

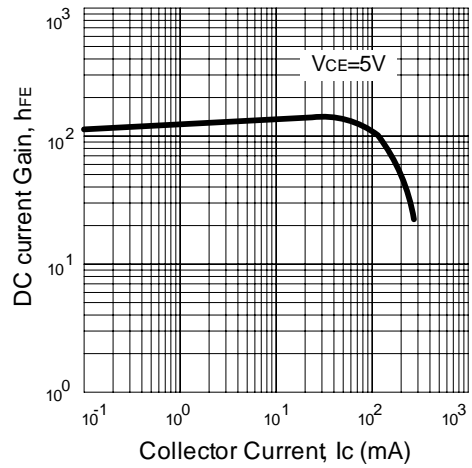


Fig.3 Base-Emitter on Voltage

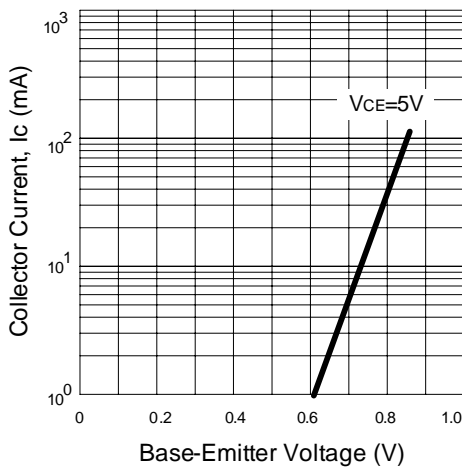


Fig.4 Saturation Voltage

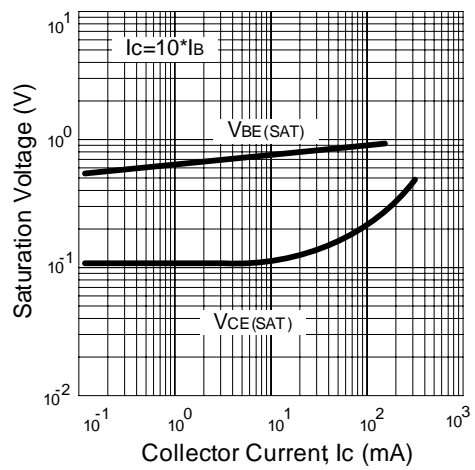
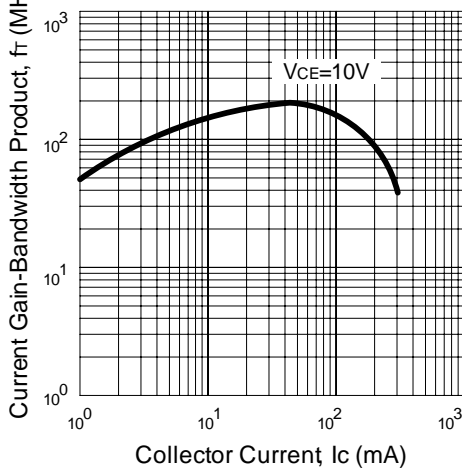


Fig.5 Current Gain-Bandwidth Product



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