



MMBT5551

NPN SILICON TRANSISTOR

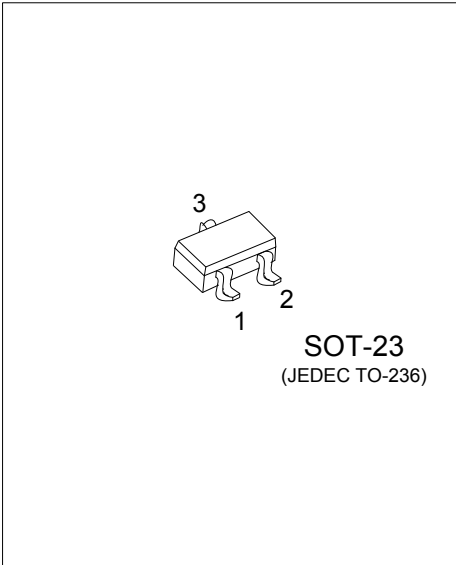
HIGH VOLTAGE SWITCHING TRANSISTOR

DESCRIPTION

The UTC **MMBT5551** is a high voltage fast-switching NPN power transistor. It is characterized with high breakdown voltage, high current gain and high switching speed.

FEATURES

- * High Collector-Emitter Voltage: $V_{CE0}=160V$
- * High current gain



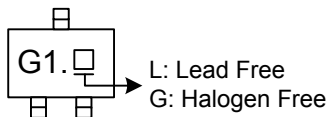
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBT5551L-x-AE3-R	MMBT5551G-x-AE3-R	SOT-23	B	E	C	Tape Reel

Note: Pin Assignment: B: Base E: Emitter C: Collector

<p>MMBT5551G-x-AE3-R</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) x: refer to Classification of h_{FE}</p> <p>(4) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



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■ ABSOLUTE MAXIMUM RATINGS (T_A= 25°C, unless otherwise specified)

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
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-40 ~ +150	°C

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.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	357	°C/W
Junction to Case	θ _{JC}	104	°C/W

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V _{CBO}	I _C =100μA, 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 =10μA, 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			
		V _{CE} =5V, I _C =10mA	80	160	400	
		V _{CE} =5V, I _C =50mA	80			
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =10mA, I _B =1mA			0.15	V
		I _C =50mA, I _B =5mA			0.2	V
Base-Emitter Saturation Voltage	V _{BE(SAT)}	I _C =10mA, I _B =1mA			1	V
		I _C =50mA, I _B =5mA			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	NF	I _C =0.25mA, V _{CE} =5V R _S =1kΩ, f=10Hz ~ 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

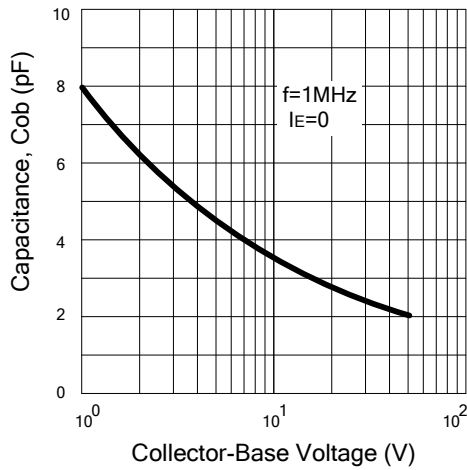


Fig.2 DC Current Gain

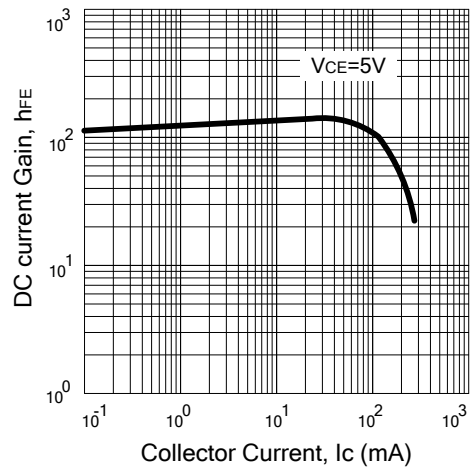


Fig.3 Base-Emitter on Voltage

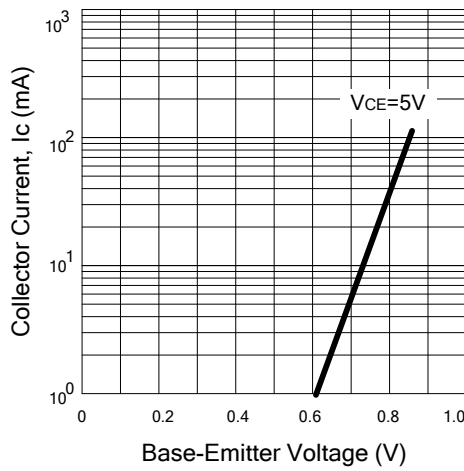


Fig.4 Saturation Voltage

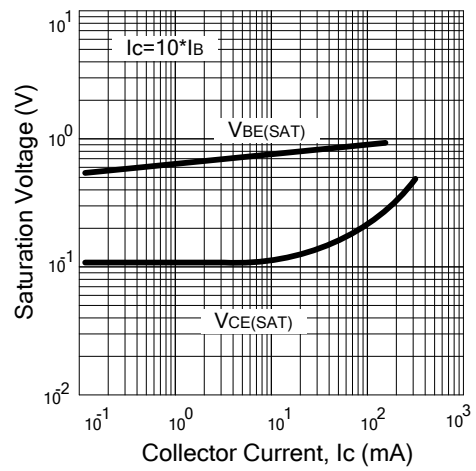
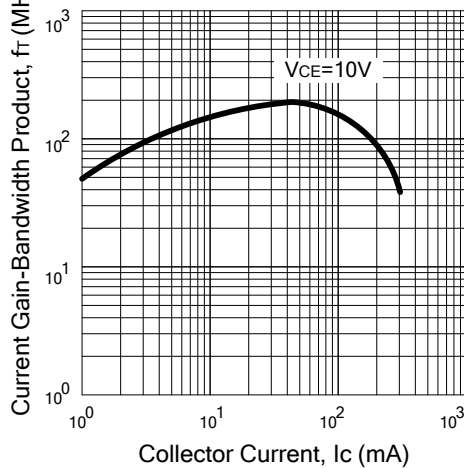
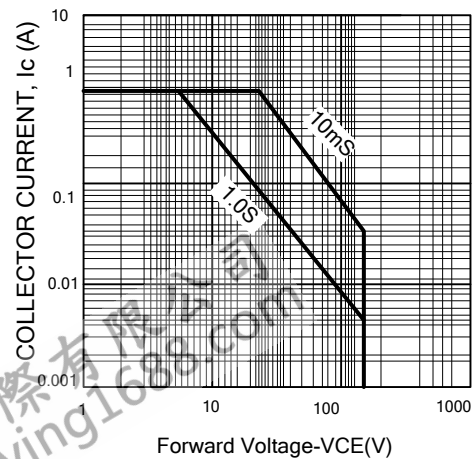


Fig.5 Current Gain-Bandwidth Product



SAFE OPERATING AREA



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