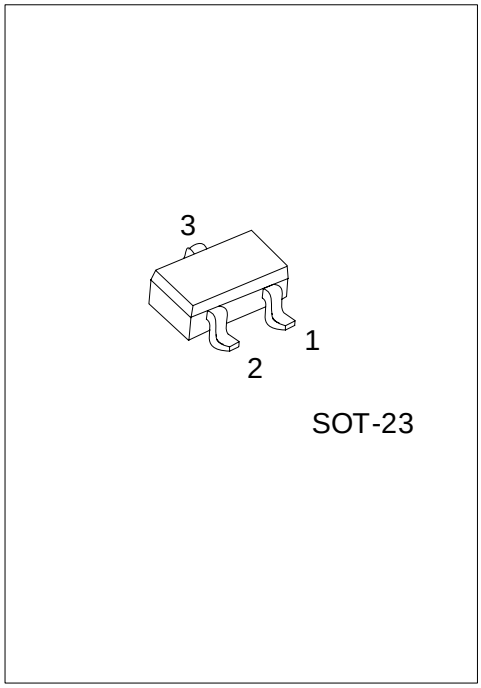
MMBT5551

NPN EPITAXIAL SILICON TRANSISTOR

HIGH VOLTAGE SWITCHING TRANSISTOR



*Pb-free plating product number:MMBT5551L

■ FEATURES

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

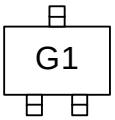
■ ORDERING INFORMATION

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

MMBT5551L-x-AE3-6-R

(1)Packing Type	(1) R: Tape Reel
(2)Pin Assignment	(2) refer to Pin Assignment
(3)Package Type	(3) AE3: SOT-23
(4)Rank	(4) x: refer to Classification of h_{FE}
(5)Lead Plating	(5) L: Lead Free Plating, Blank: Pb/Sn

■ MARKING



■ ABSOLUATE MAXIUM RATINGS (Ta = 25℃)

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℃, 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 V_{CE}=5V, I_C =10mA V_{CE}=5V, I_C =50mA	80 80 80	160	400	
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=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 CHARACTERICS

Fig.1 Collector Output Capacitance

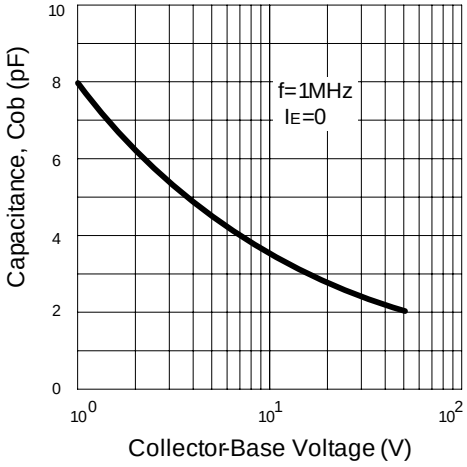


Fig.2 DC Current Gain

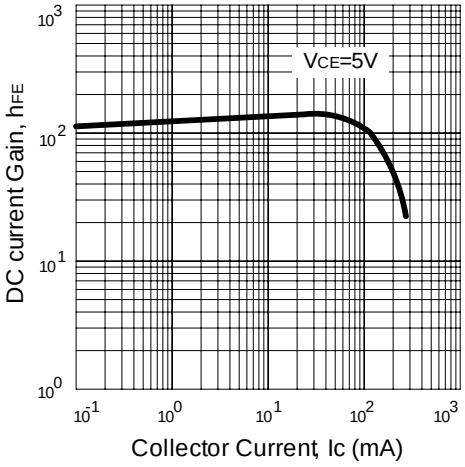


Fig.3 Base-Emitter on Voltage

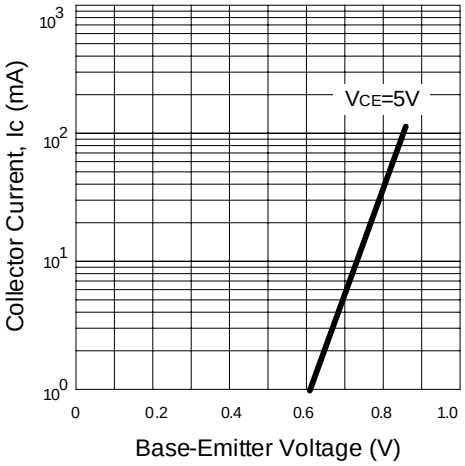


Fig.4 Saturation Voltage

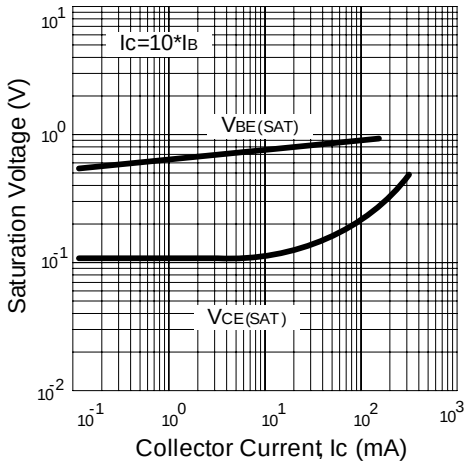


Fig.5 Current Gain-Bandwidth Product