



MMBT5401

PNP EPITAXIAL SILICON TRANSISTOR

HIGH VOLTAGE SWITCHING TRANSISTOR

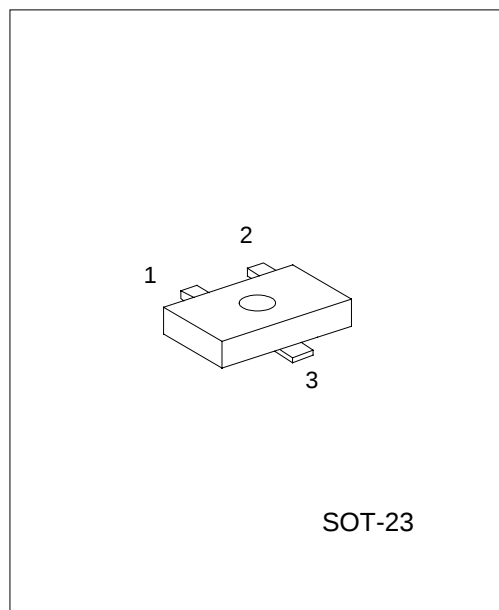
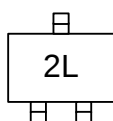
■ FEATURES

*Collector-Emitter Voltage: $V_{CE0}=-150V$

*Collector Dissipation: $P_c(max)=350mW$

*High current gain

■ MARKING



SOT-23

*Pb-free plating product number:MMBT5401L

■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	Emitter
2	Base
3	Collector

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead free		
MMBT5401-AE3-R	MMBT5401L-AE3-R	SOT-23	Tape Reel

MMBT5401

PNP EPITAXIAL SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector -Base Voltage	V_{CBO}	-160	V
Collector -Emitter Voltage	V_{CEO}	-150	V
Emitter -Base Voltage	V_{EBO}	-5	V
DC Collector Current	I_C	-600	mA
Power Dissipation	P_D	350	mW
Operating Temperature	T_J	+150	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V_{CBO}	$I_C = -100\mu A, I_E = 0$	-160			V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C = -1mA, I_B = 0$	-150			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}	$V_{BE} = -3V, I_C = 0$			-50	nA
DC Current Gain(note)	h_{FE}	$V_{CE} = -5V, I_C = -1mA$	80			
		$V_{CE} = -5V, I_C = -10mA$	80		400	
		$V_{CE} = -5V, I_C = -50mA$	80			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 1mA$			-0.2	V
		$I_C = 50mA, I_B = 5mA$			-0.5	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -10mA, I_B = -1mA$			1	V
		$I_C = -50mA, I_B = -5mA$			1	
Current Gain Bandwidth Product	f_T	$V_{CE} = -10V, I_C = -10mA, f = 100MHz$	100		400	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

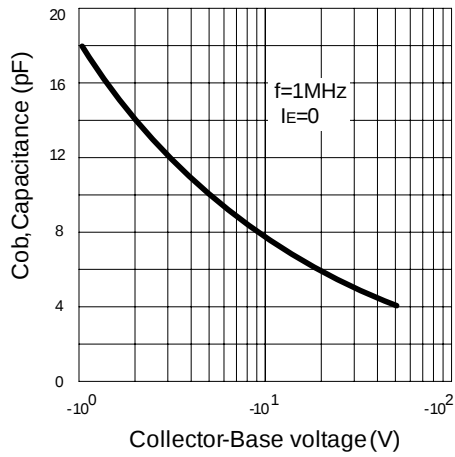


Fig.2 DC current Gain

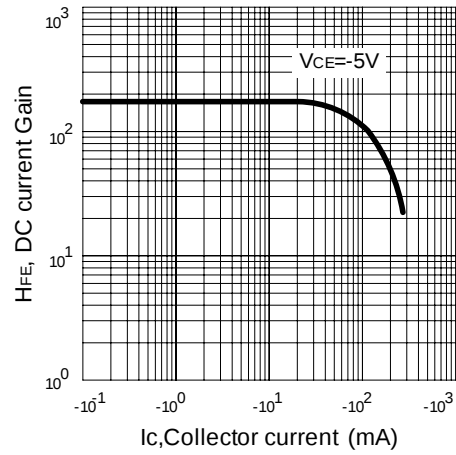


Fig.3 Base-Emitter on Voltage

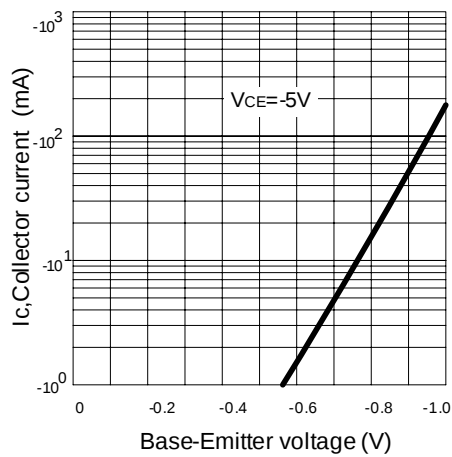


Fig.4 Saturation voltage

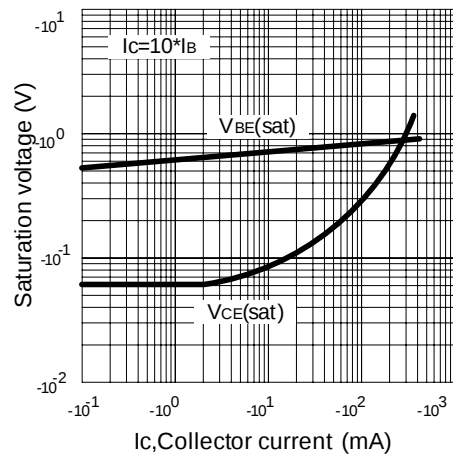
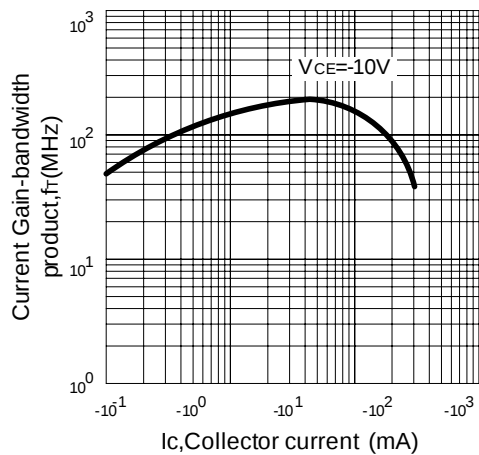


Fig.5 Current gain -bandwidth product



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