

MMBT5551-AU

NPN HIGH VOLTAGE TRANSISTOR

VOLTAGE 160 Volt **POWER** 250 mWatt

FEATURES

- NPN Silicon, planar design
- Collector-emitter voltage $V_{CE} = 160V$
- Collector current $I_C = 600mA$
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

MECHANICAL DATA

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0084 grams
- Marking: M51

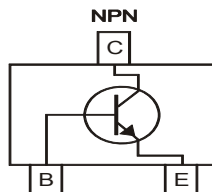
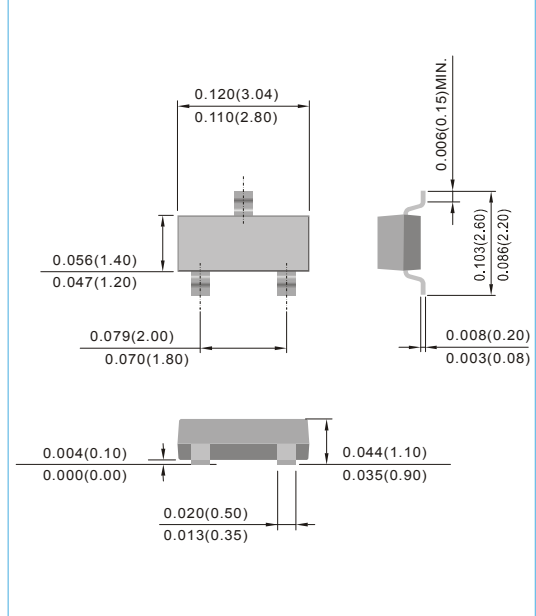


Fig.34(TOP VIEW)

SOT-23

Unit : inch(mm)



ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNITS
Collector - Emitter Voltage	V_{CEO}	160	V
Collector - Base Voltage	V_{CBO}	180	V
Emitter - Base Voltage	V_{EBO}	6	V
Collector Current Continuous	I_C	600	mA

THERMAL CHARACTERISTICS ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNITS
Max Power Dissipation (Note 1)	P_D	250	mW
Thermal Resistance ,Junction to Ambient (Note 1)	$R_{\theta JA}$	325	$^{\circ}C/W$
Operating Junction Temperature and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^{\circ}C$

NOTES :

1. Mounted on FR-4 PCB, single sided copper, mini pad.



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ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Collector - Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, I _B =0A	160	-	-	V
Collector - Base Breakdown Voltage	V _{(BR)CBO}	I _C =100uA, I _E =0A	180	-	-	V
Emitter - Base Breakdown Voltage	V _{(BR)EBO}	I _E =10uA, I _C =0A	6	-	-	V
Collector - Base Cut-off Current	I _{CBO}	V _{CB} =120V, I _E =0A	-	-	50	nA
Emitter - Base Cut-off Current	I _{EBO}	V _{EB} =4V, I _C =0A	-	-	50	nA
DC Current Gain	h _{FE}	V _{CE} =5V, I _C =1mA V _{CE} =5V, I _C =10mA V _{CE} =5V, I _C =50mA	80 80 30	- - -	- 250 -	-
Collector - Emitter Saturation Voltage	V _{CE(SAT)}	I _C =10mA, I _B =1mA I _C =50mA, I _B =5mA	- -	- -	150 200	mV
Base - Emitter Satruation Voltage	V _{BE(SAT)}	I _C =10mA, I _B =1mA I _C =50mA, I _B =5mA	- -	- -	1 1	V
Collector-Base Capacitance	C _{CBO}	V _{CB} =10V, I _E =0A, f=1MHz	-	-	6	pF
Emitter-Base Capacitance	C _{EBO}	V _{EB} =500mV, I _C =0A, f=1MHz	-	-	30	pF
Transition frequency	F _T	I _C =10mA, V _{CE} =10V, f=100MHz	100	-	300	MHz

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RATING AND CHARACTERISTIC CURVES

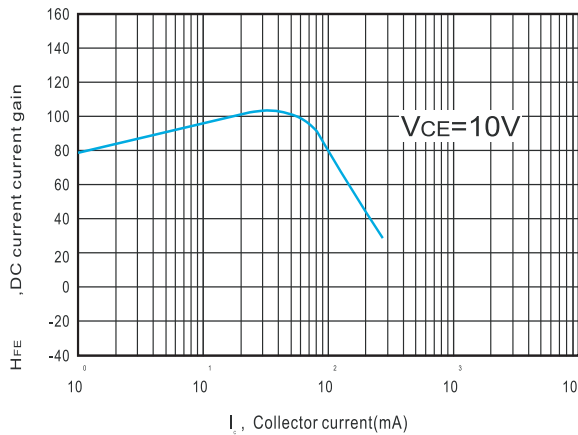


Fig.1 DC current gain

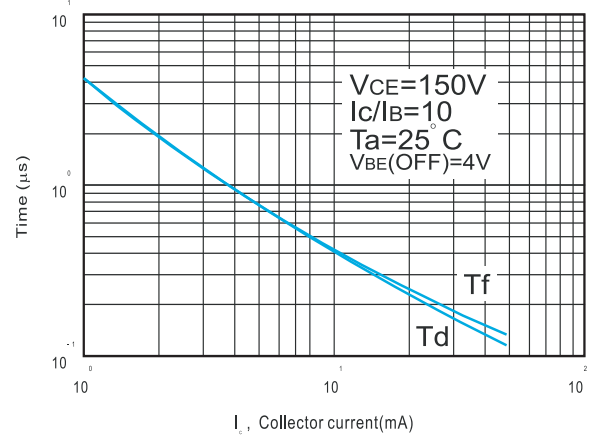


Fig.2 Turn-on switching time

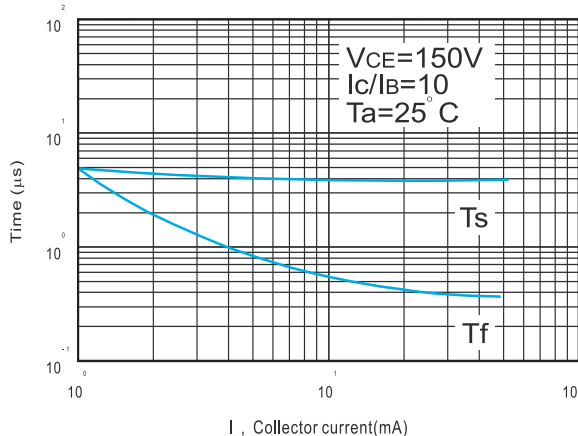


Fig.3 Turn-off switching time

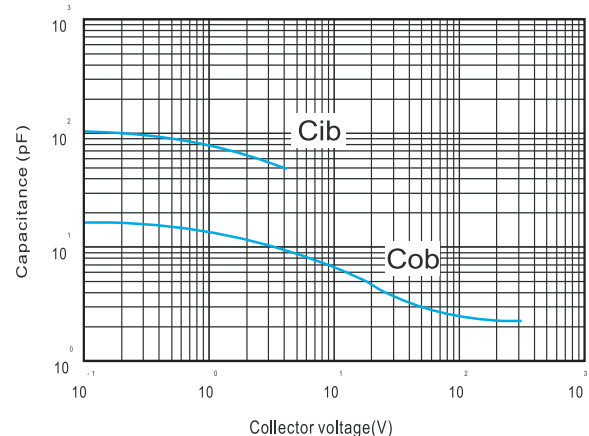


Fig.4 Capacitance

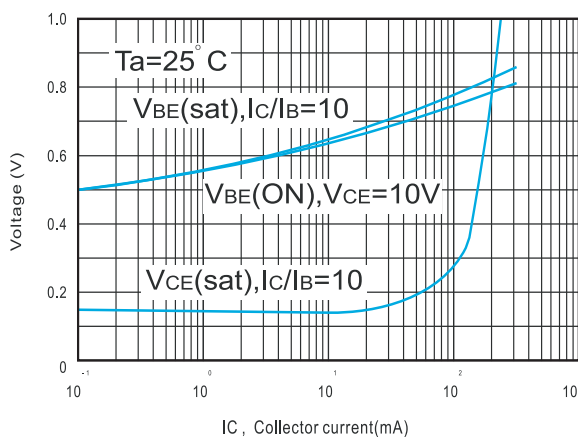


Fig.5 ON Voltage

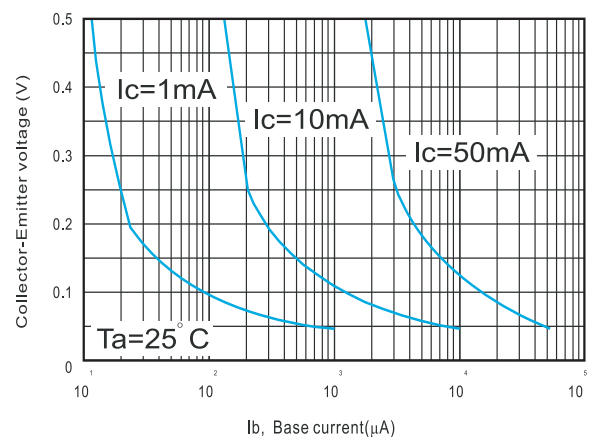


Fig.6 Collector saturation region

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RATING AND CHARACTERISTIC CURVES

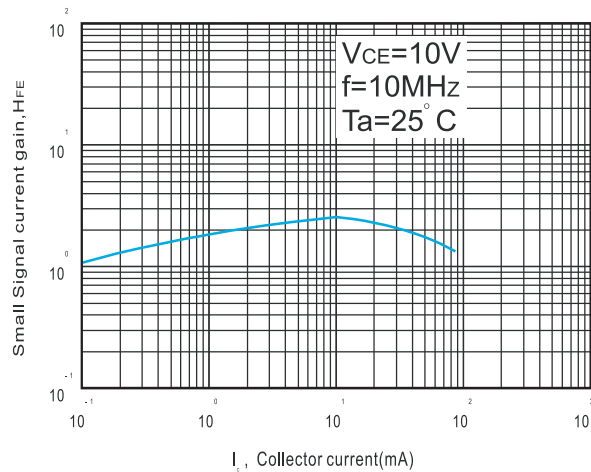


Fig.7 High Frequency current gain

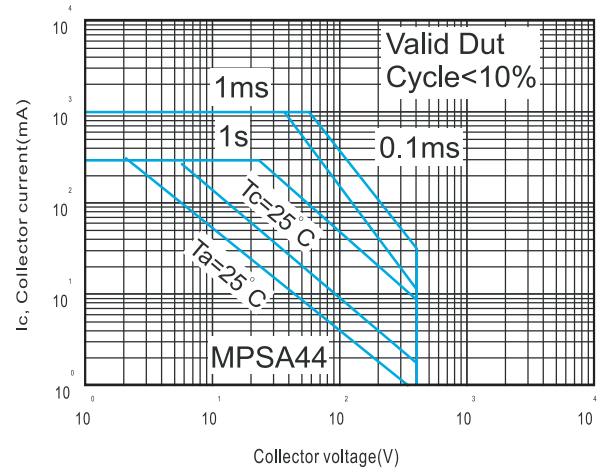
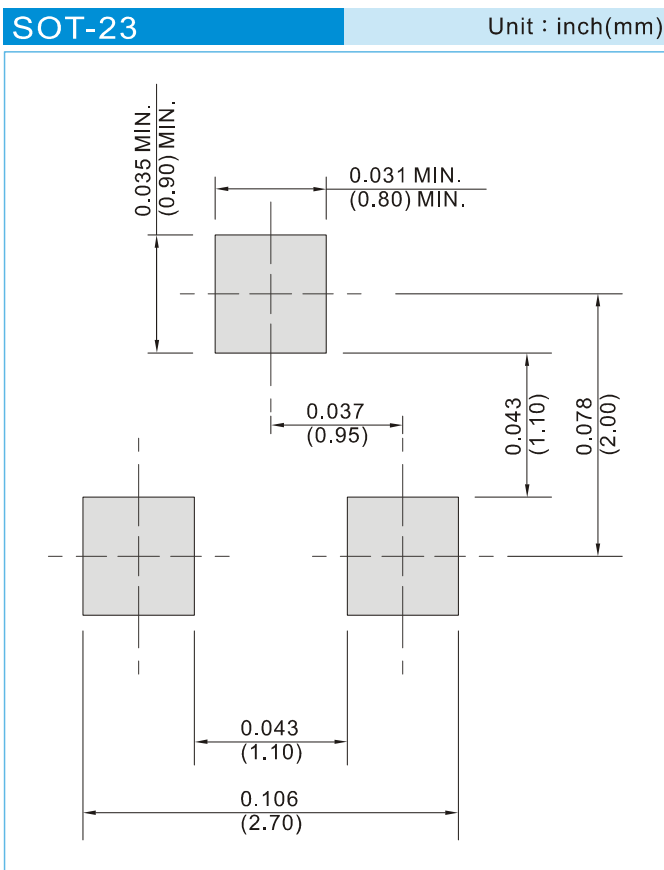


Fig.8 Safe operating area

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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
 - T/R - 12K per 13" plastic Reel
 - T/R - 3K per 7" plastic Reel



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Part No_packing code_Version

MMBT5551-AU_R1_000A1

MMBT5551-AU_R2_000A1

For example :

RB500V-40_R2_00001

Part No.

Serial number

Version code means HF

Packing size code means 13"

Packing type means T/R

Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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