

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 $I_C = 600mA$
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

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

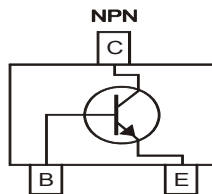
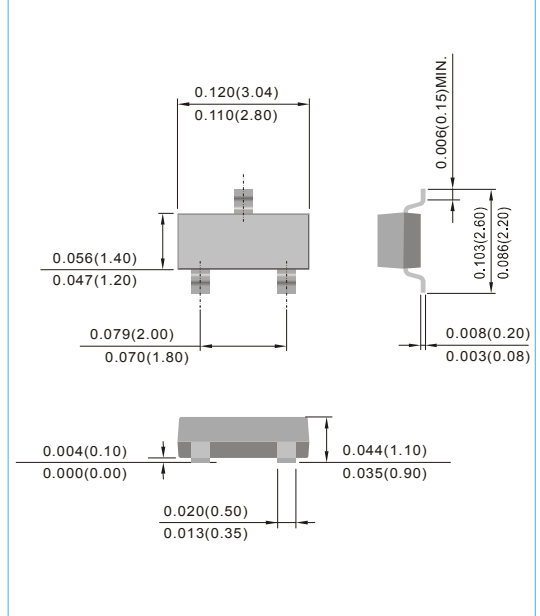


Fig.34(TOP VIEW)

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

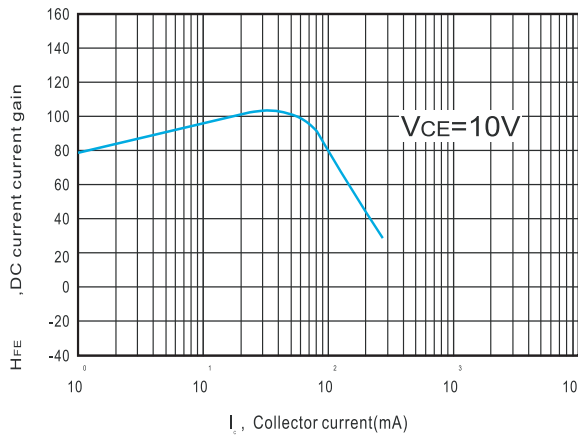


Fig.1 DC current gain

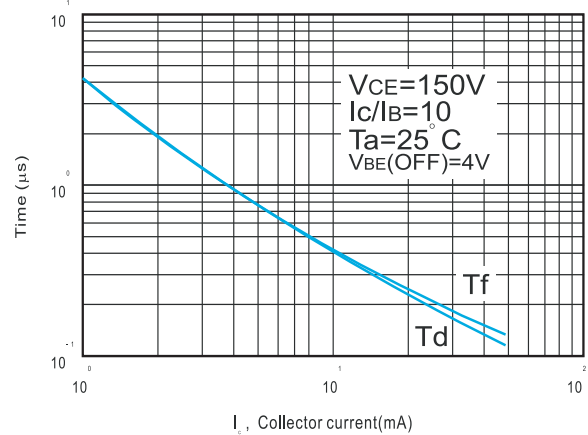


Fig.2 Turn-on switching time

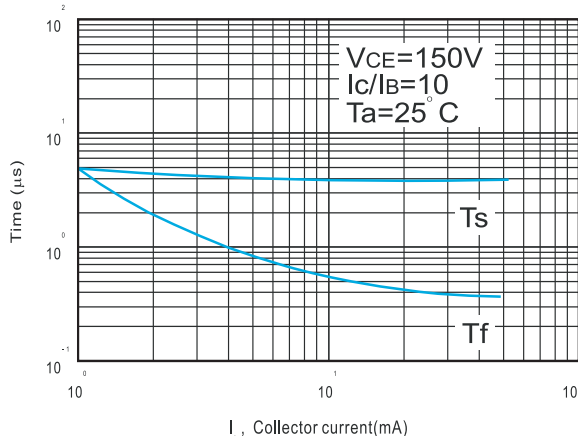


Fig.3 Turn-off switching time

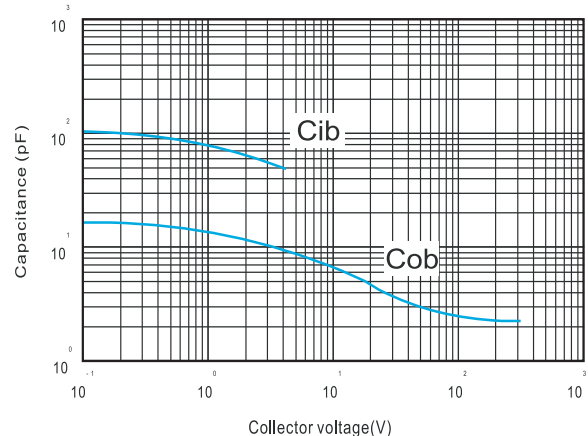


Fig.4 Capacitance

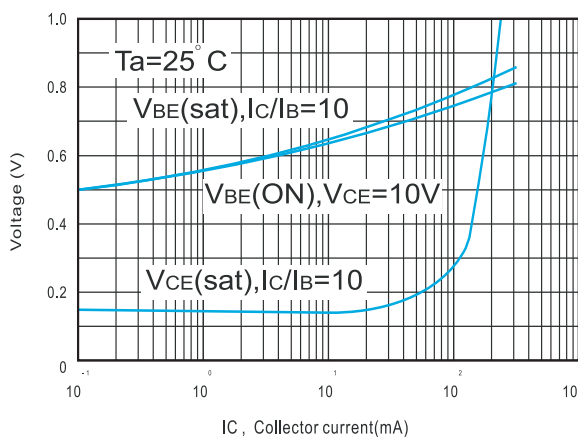


Fig.5 ON Voltage

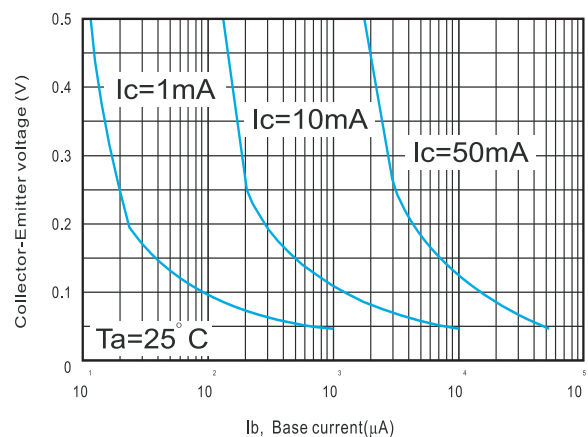


Fig.6 Collector saturation region

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RATING AND CHARACTERISTIC CURVES

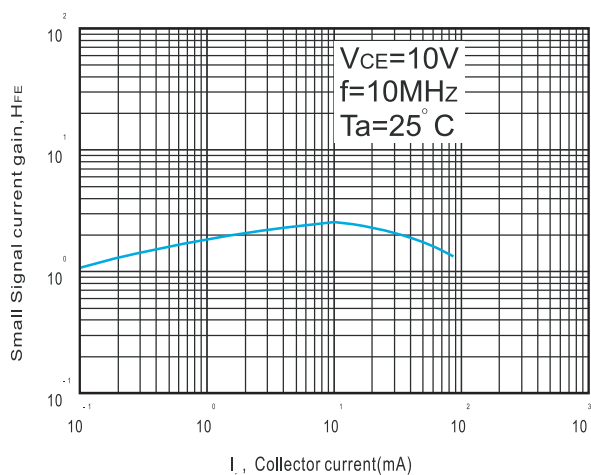


Fig.7 High Frequency current gain

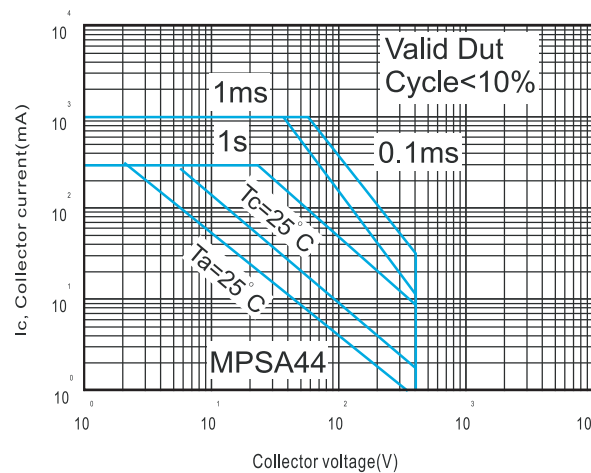


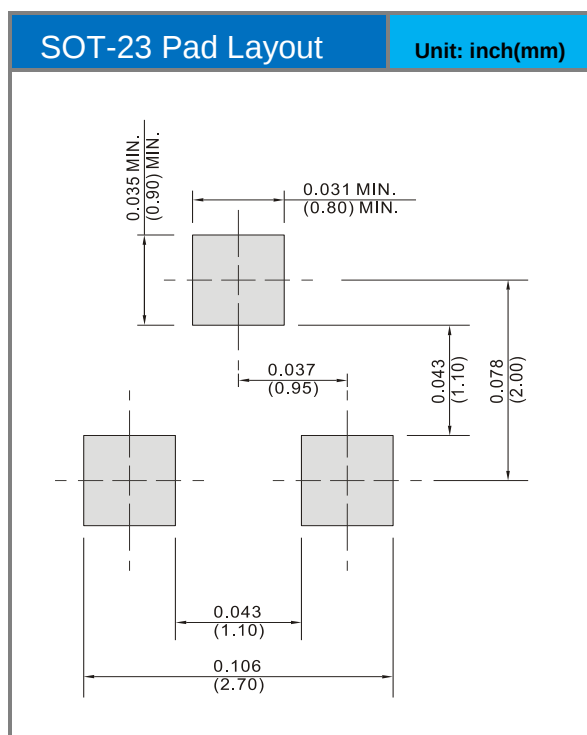
Fig.8 Safe operating area

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
MMBT5551-AU	SOT-23	3K pcs / 7" reel	M51

Mounting Pad Layout



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