



# MMBT5551W-AU

## NPN HIGH VOLTAGE TRANSISTOR

**VOLTAGE** 160 Volts **POWER** 200 mWatts

### 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-323, Plastic
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.005 gram•

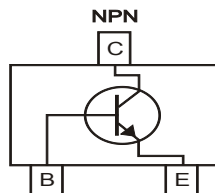
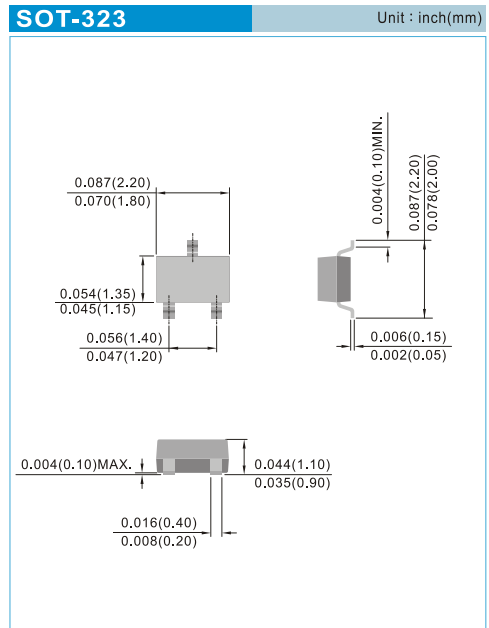


Fig.34(TOP VIEW)



### 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)	$P_D$	200	mW
Thermal Resistance ,Junction to Ambient (Note 1)	$R_{\theta JA}$	625	$^{\circ}C/W$
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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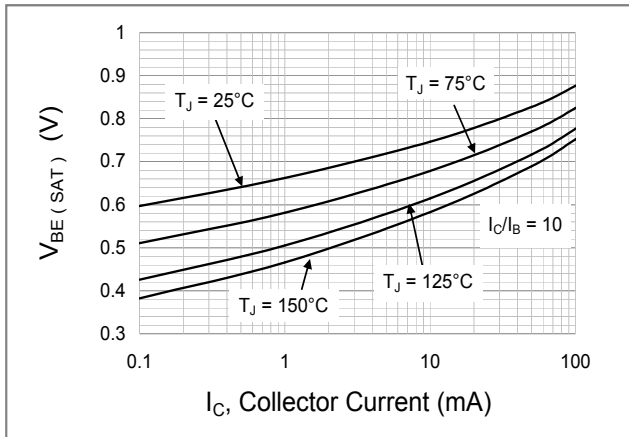
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

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

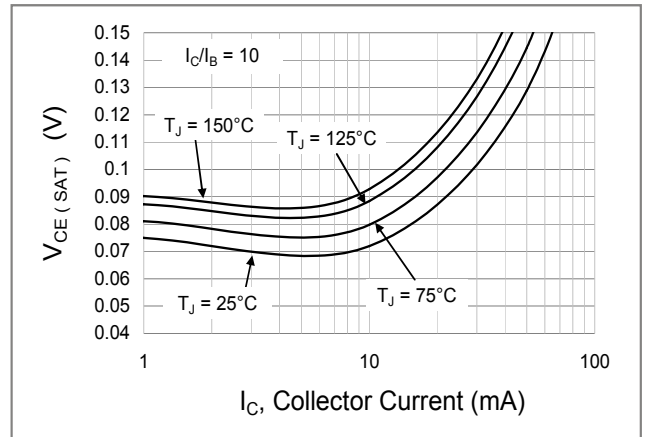


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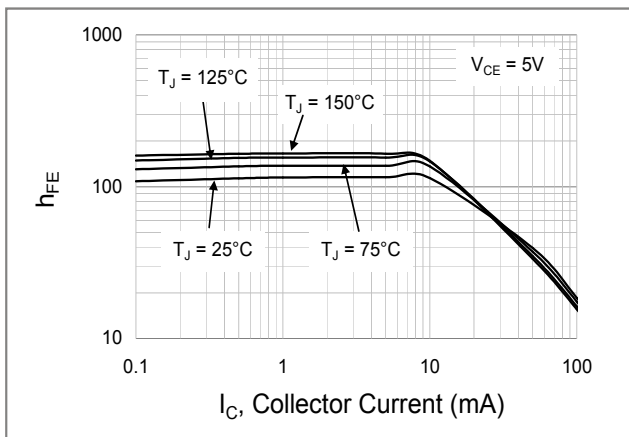
## RATING AND CHARACTERISTIC CURVES



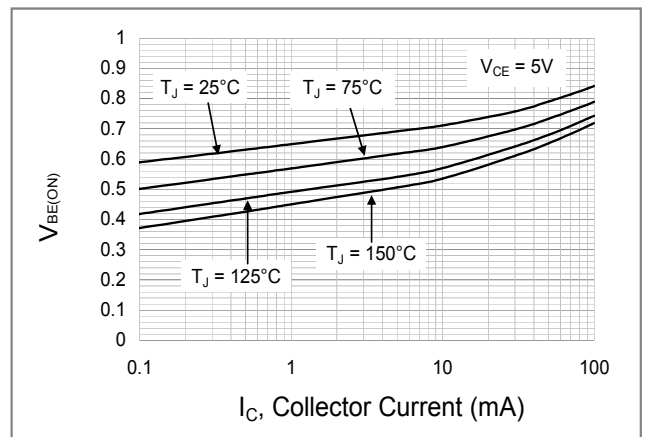
**Fig.1 Base-Emitter Saturation Voltage**



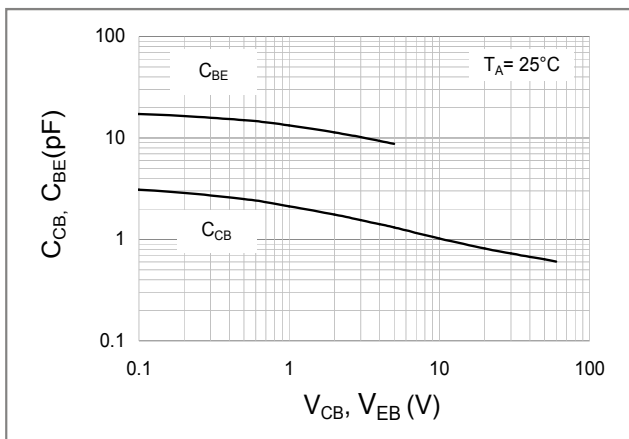
**Fig.2 Collector-Emitter Saturation Voltage**



**Fig.3 Typical DC Current Gain**



**Fig.4 Base-Emitter Voltage vs. Collector Current**



**Fig.5 Typical Capacitance**

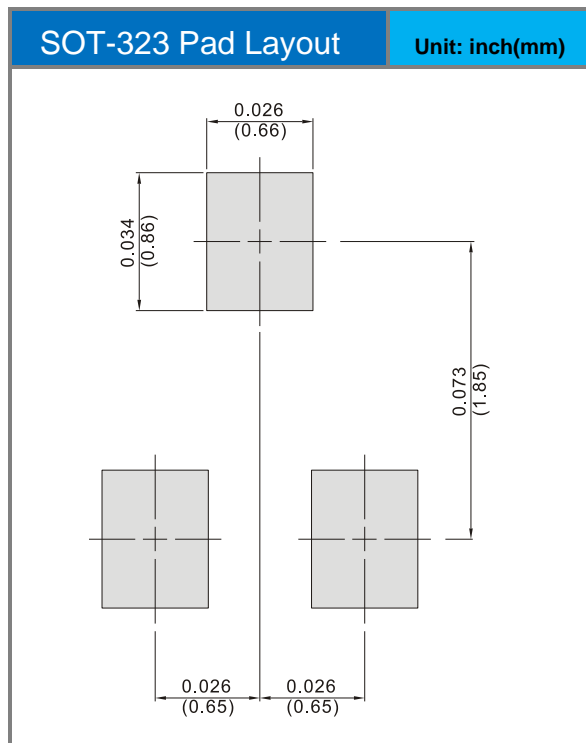


# MMBT5551W-AU

## Product and Packing Information

Part No.	Package Type	Packing Type	Marking
MMBT5551W-AU	SOT-323	3K / 7" reel	M51

## Mounting Pad Layout





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