MMBT5551

NPN HIGH VOLTAGE TRANSISTOR

VOLTAGE 160 Volts **POWER** 250 mWatts

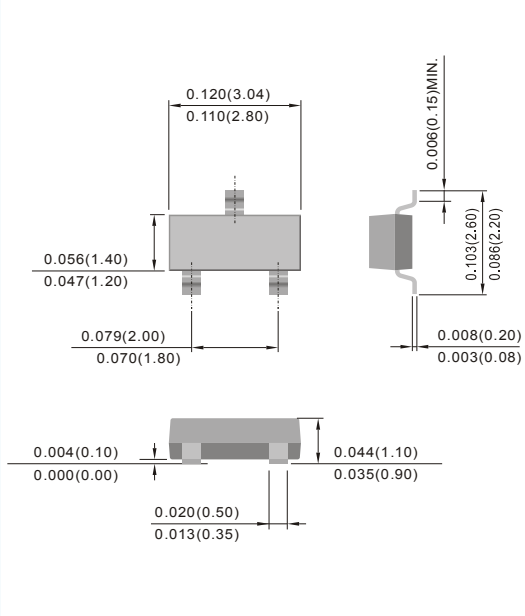
FEATURES

- 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

MECHANICAL DATA

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

SOT-23 Unit : inch(mm)



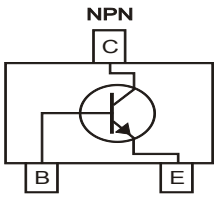


Fig.34(TOP VIEW)

ABSOLUTE MAXIMUM RATINGS (T_A=25°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°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	°C/W
Operating Junction Temperature and Storage Temperature Range	T_J,T_{STG}	-55 to +150	°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

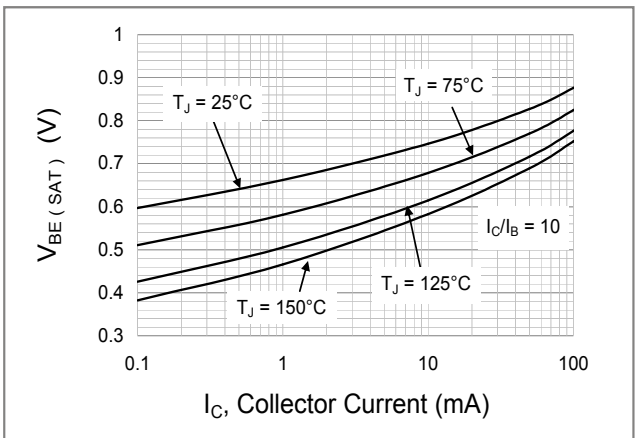

Fig.1 Base-Emitter Saturation Voltage

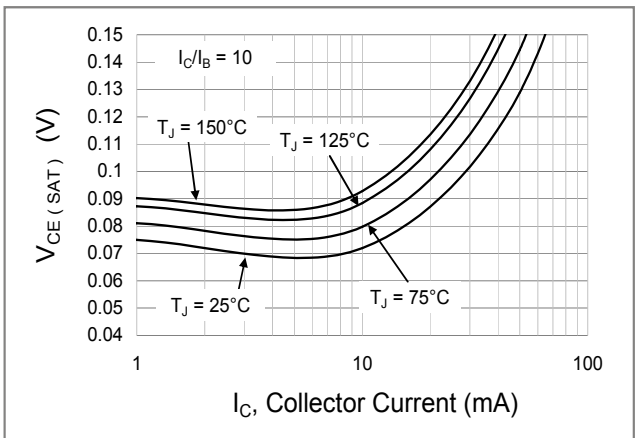

Fig.2 Collector-Emitter Saturation Voltage

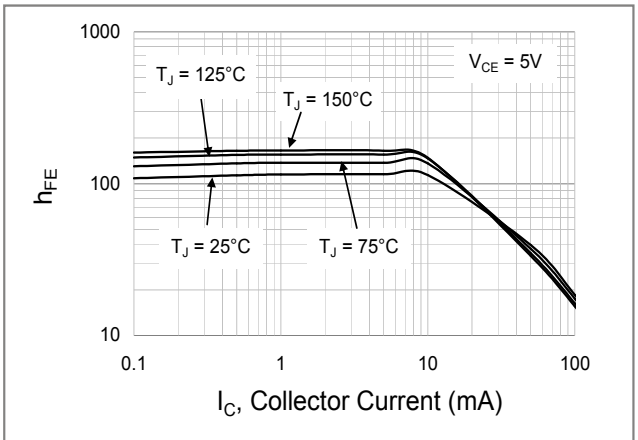

Fig.3 Typical DC Current Gain

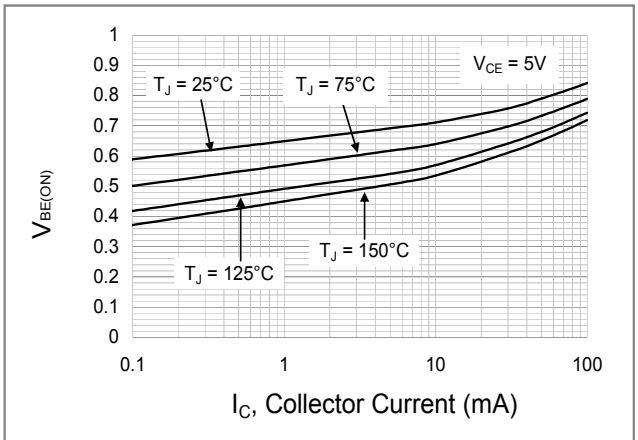

Fig.4 Base-Emitter Voltage vs. Collector Current

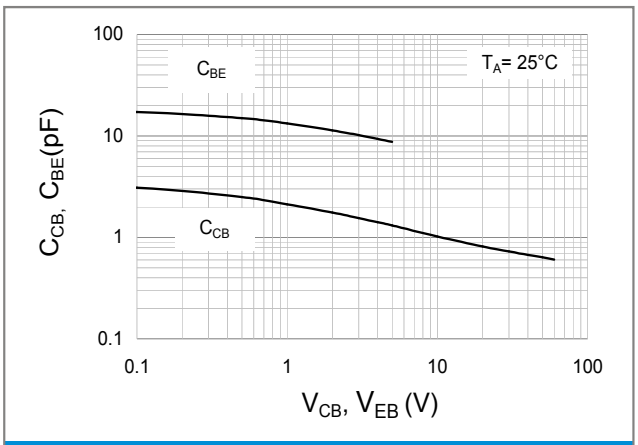

Fig.5 Typical Capacitance

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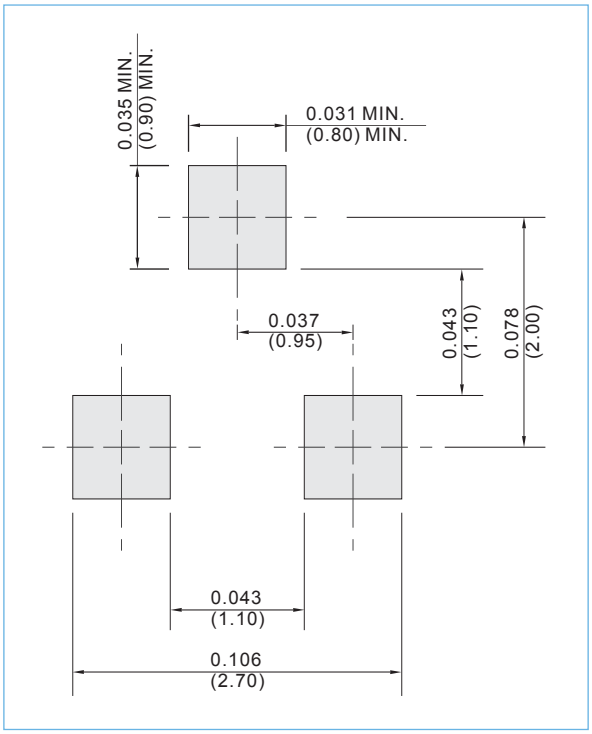
MOUNTING PAD LAYOUT

SOT-23 Unit : inch(mm)



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_R1_00001

MMBT5551_R2_00001

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	1st Code	Packing size code	2nd Code	HF or RoHS	1st Code	2nd~5th 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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