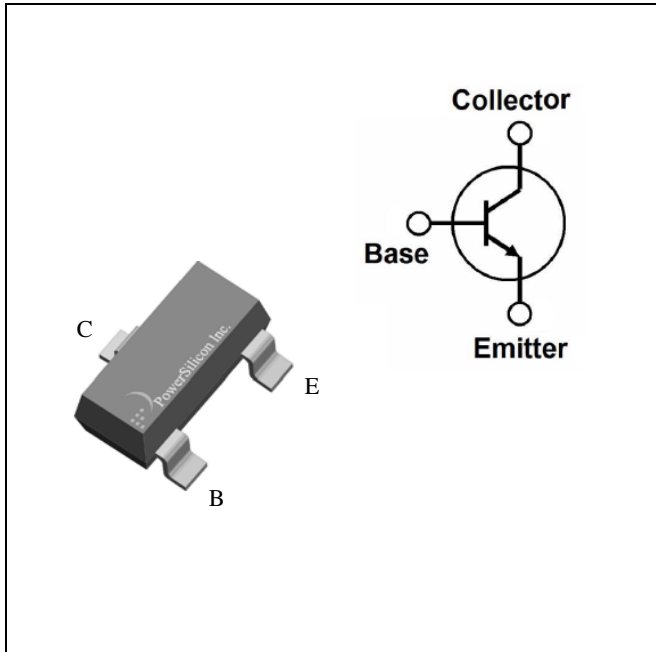


GENERAL PURPOSE TRANSISTORS NPN Silicon



FEATURES

- NPN Silicon Epitaxial planar Transistor For Switching And Amplifier Applications
- Collector Current $I_C=600\text{mA}$

MECHANICAL DATA

- Available in SOT-23 Package
- Solderability : MIL-STD-202, Method 208
- Full RoHS Compliance

ORDERING INFORMATION

PART NUMBER	PACKAGE	SHIPPING	MARKING CODE
MMBT5551□-T3	SOT-23	Tape Reel	G1

Notes:

1. □: none is for Lead Free package;
"G" is for Halogen Free package.

THERMAL DATA

PARAMETER	SYMBOL	VALUES	UNIT
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	417	°C/W

ABSOLUTE MAXIMUM RATINGS
 $T_A = 25^\circ\text{C}$, unless otherwise specified. ^(Note 4)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage	V_{CEO}	160	V
Collector-Base Voltage	V_{CBO}	180	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	600	mA
Collector Power Dissipation	P_C	300	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 ~ +150	$^\circ\text{C}$

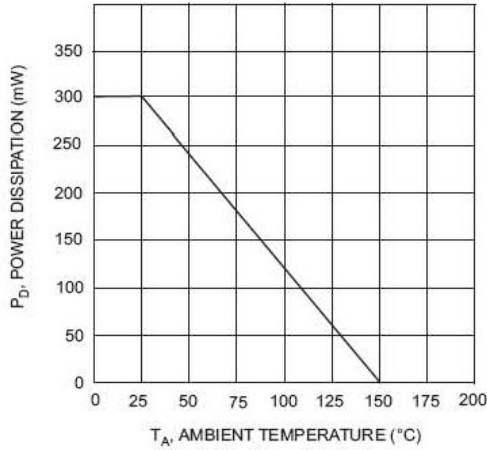
Notes:

2. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

ELECTRICAL CHARACTERISTICS
 $T_A = 25^\circ\text{C}$, unless otherwise noted.

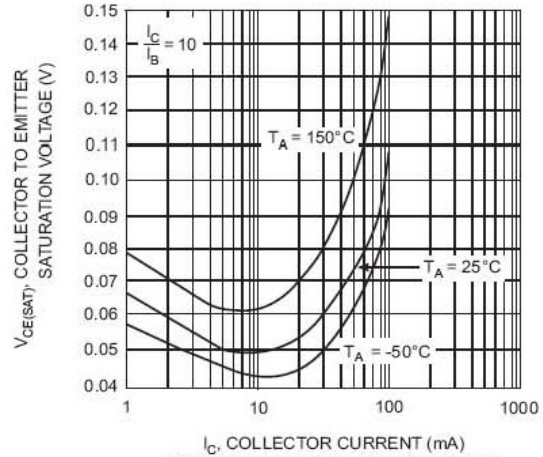
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 0.1\text{mA}, I_B = 0$	160			V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	180			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 120\text{V}, I_E = 0$			0.05	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			0.05	μA
ON CHARACTERISTICS						
Dc Current Gain	$h_{FE(1)}$	$V_{CE} = 5\text{V}, I_C = 1\text{mA}$	80			-
	$h_{FE(2)}$	$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	100		300	
	$h_{FE(3)}$	$V_{CE} = 5\text{V}, I_C = 50\text{mA}$	30			
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.15	V
	$V_{CE(sat)2}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$			0.2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			1	V
	$V_{BE(sat)2}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$			1	V
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage	f_T	$I_C = 10\text{mA}, V_{CE} = 10\text{V}, f = 100\text{MHz}$	100		300	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$			6	pF

TYPICAL PERFORMANCE CHARACTERISTICS



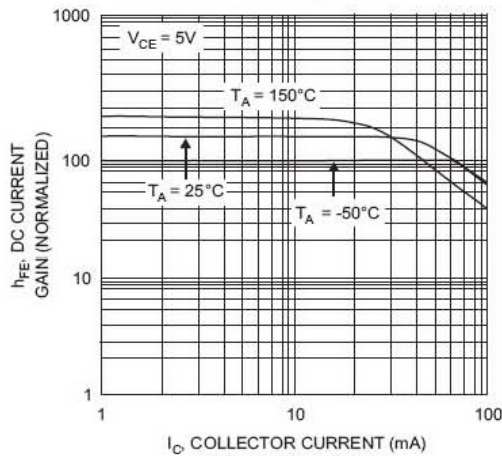
T_A , AMBIENT TEMPERATURE (°C)

Fig. 1, Max Power Dissipation vs Ambient Temperature



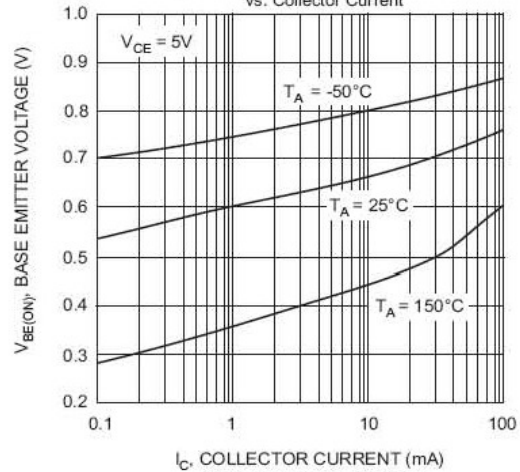
I_C , COLLECTOR CURRENT (mA)

Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current



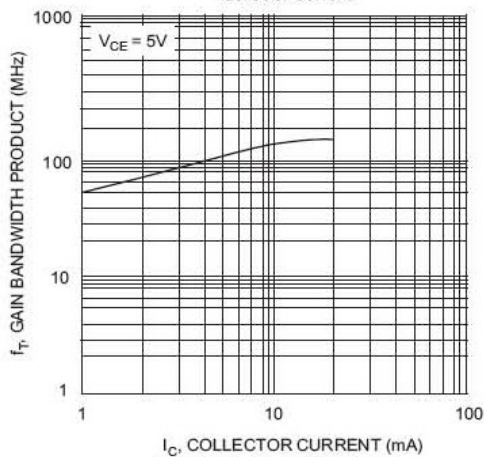
I_C , COLLECTOR CURRENT (mA)

Fig. 3, DC Current Gain vs Collector Current



I_C , COLLECTOR CURRENT (mA)

Fig. 4, Base Emitter Voltage vs. Collector Current



I_C , COLLECTOR CURRENT (mA)

Fig. 5, Gain Bandwidth Product vs. Collector Current

PHYSICAL DIMENSION

Unit : Inch(Millimeter)

