



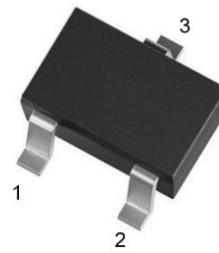
**DESCRIPTION**

The MMBTA06W is available in SC70 (SOT-323) package.

**FEATURE**

- For Switching and Amplifier Applications
- Complementary Type PNP Transistor  
MMBTA56W

**PIN DESCRIPTION**



SC70

SOT-323

**ORDERING INFORMATION**

Package Type	Part Number
SC70 SOT-323	MMBTA06W
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

PIN#	DESCRIPTION
1	Base
2	Emitter
3	Collector

**ABSOLUTE MAXIMUM RATINGS** $T_A = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Value
$V_{CBO}$ , Collector-Base Voltage	80V
$V_{CEO}$ , Collector-Emitter Voltage	80V
$V_{EBO}$ , Emitter-Base Voltage	4V
$I_C$ , Collector Current	500mA
$P_C$ , Collector Power Dissipation	200mW
$T_J$ , Junction Temperature	150°C
$T_{stg}$ , Storage Temperature Range	-55°C ~ +150°C
$R_{\theta JA}$ , Thermal Resistance from Junction to Ambient	416°C/W

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

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

Parameter	Symbol	Conditions	Min.	Max.	Unit
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 1\text{V}, I_C = 10\text{mA}$	100	400	-
	$h_{FE(2)}$	$V_{CE} = 1\text{V}, I_C = 100\text{mA}$	100	-	
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 0.1\text{mA}, I_E = 0$	80	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	80	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 0.1\text{mA}, I_C = 0$	4	-	V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB} = 50\text{V}, I_E = 0$	-	0.1	$\mu\text{A}$
Collector Cut-Off Current	$I_{CES}$	$V_{CE} = 60\text{V}, I_B = 0$	-	0.1	$\mu\text{A}$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB} = 3\text{V}, I_C = 0$	-	0.1	$\mu\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 100\text{mA}, I_B = 10\text{mA}$	-	0.25	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 100\text{mA}, I_B = 10\text{mA}$	-	1.20	V
Transition Frequency	$f_T$	$V_{CE} = 2\text{V}, I_C = 10\text{mA},$ $f = 100\text{MHz}$	100	-	MHz



## TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Static Characteristic

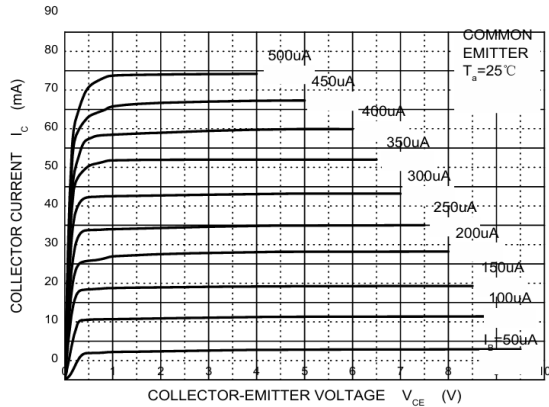


Fig 2.  $h_{FE}$  vs.  $I_C$

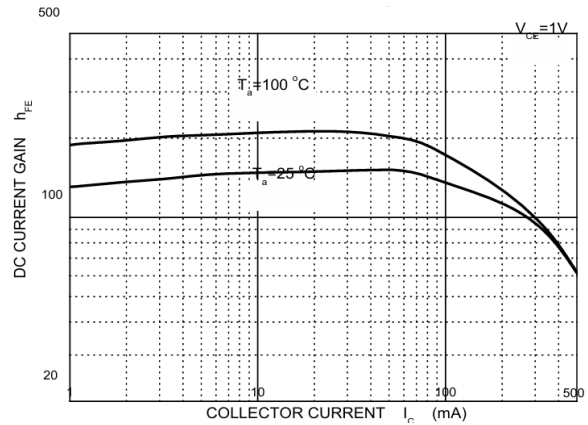


Fig 3.  $V_{CEsat}$  vs.  $I_C$

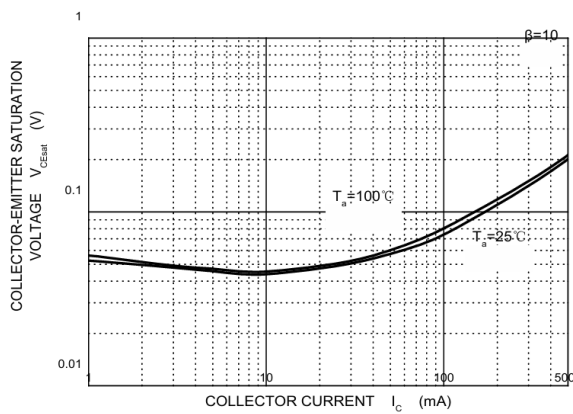


Fig 4.  $V_{BEsat}$  vs.  $I_C$

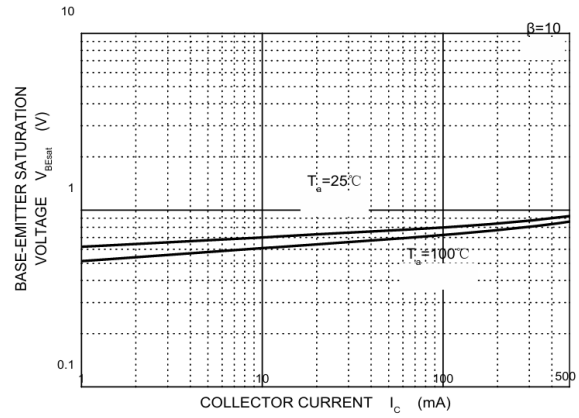


Fig 5.  $V_{BE}$  vs.  $I_C$

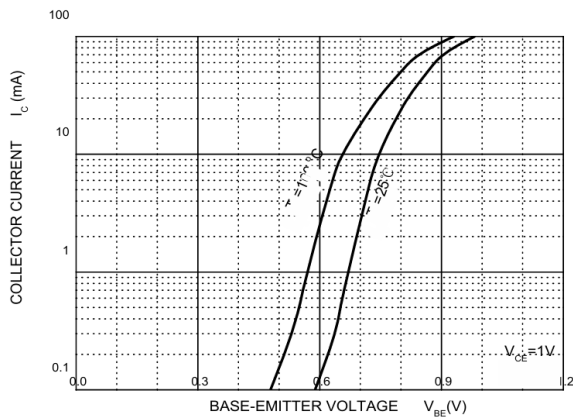


Fig 6.  $C_{ob}/C_{ib}$  vs.  $V_{CB}/V_{EB}$

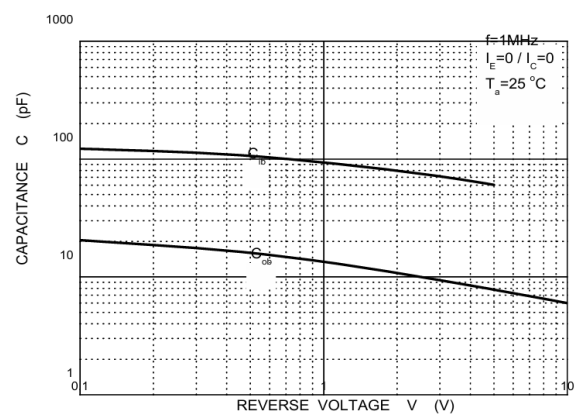




Fig 7.  $f_t$  vs.  $I_c$

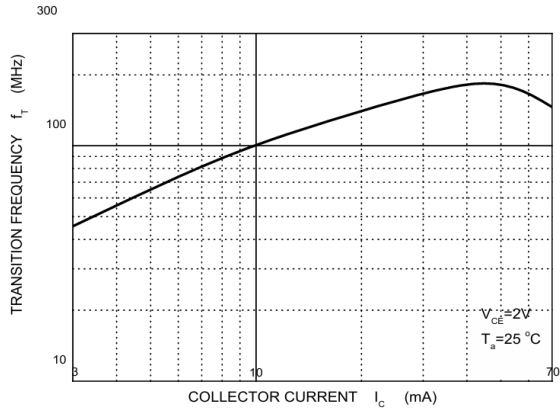
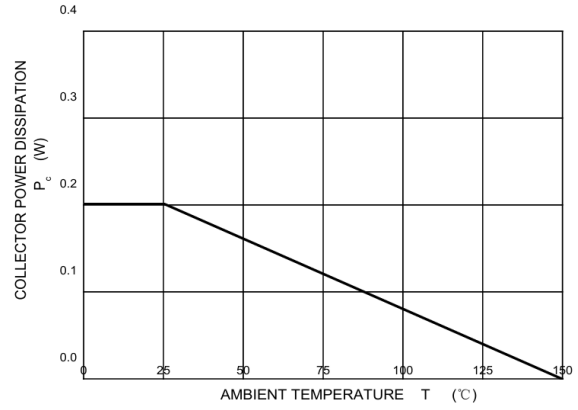


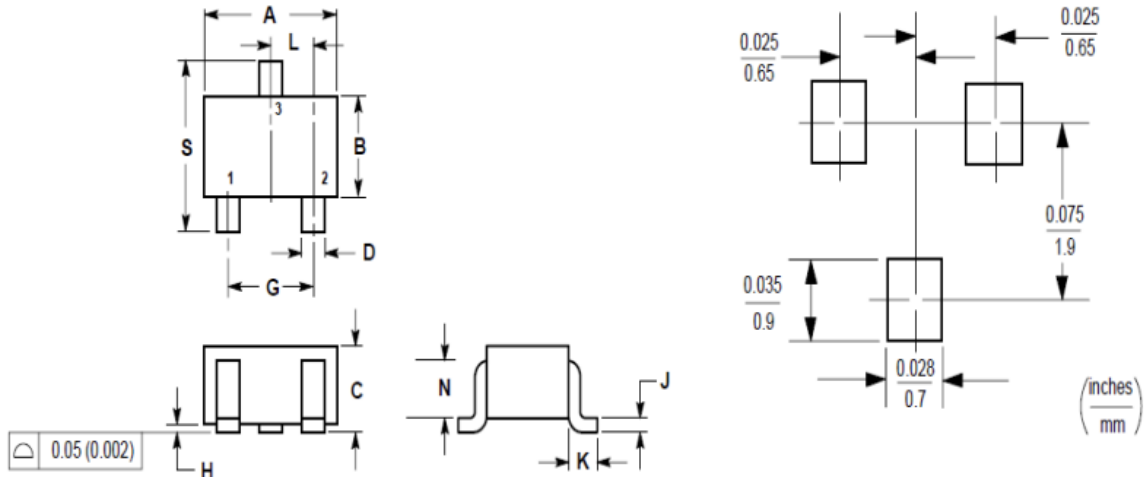
Fig 8.  $P_c$  vs.  $T_a$





**PACKAGE INFORMATION**

Dimension in SC70 (SOT-323)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.80	2.20	0.071	0.087
B	1.15	1.35	0.045	0.053
C	0.80	1.00	0.032	0.040
D	0.30	0.40	0.012	0.016
G	1.20	1.40	0.047	0.055
H	0.00	0.10	0.000	0.004
J	0.10	0.25	0.004	0.010
K	0.425 REF		0.017 REF	
L	0.650 BSC		0.026 BSC	
N	0.700 REF		0.028 REF	
S	2.00	2.40	0.079	0.095



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