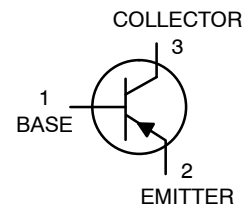


GENERAL PURPOSE APPLICATION

■ FEATURES

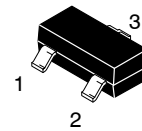
- * Collector-Emitter Voltage: $V_{CE0}=40V$
- * Collector Dissipation: $P_{D(MAX)}=350mW$
- * Complementary to MMBT3904



■ ORDERING INFORMATION

Device	Package	Shipping [†]
MMBT3906	SOT-23 (Pb-Free)	3000 / Tape & Reel

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.



SOT-23

■ ABSOLUTE MAXIMUM RATING (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector Base Voltage	V _{CBO}	-40	V
Collector Emitter Voltage	V _{CEO}	-40	V
Emitter Base Voltage	V _{EBO}	-5	V
Collector Current	I _C	-200	mA
Base Current	I _B	-50	mA
Collector Dissipation	P _C	350	mW
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

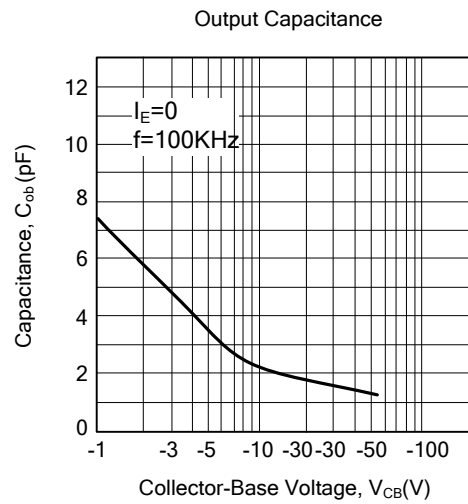
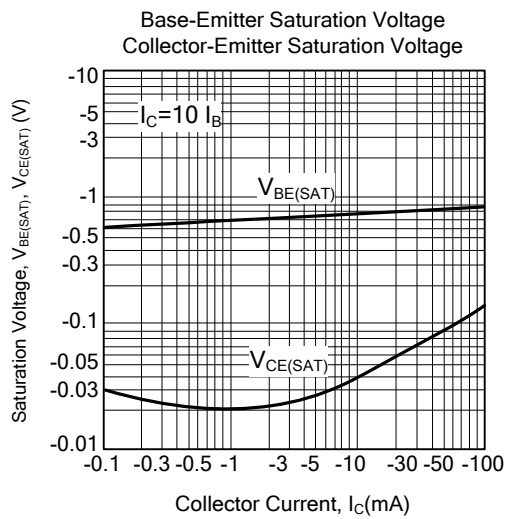
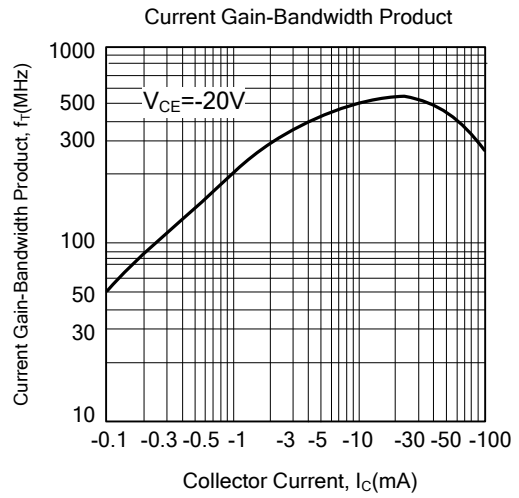
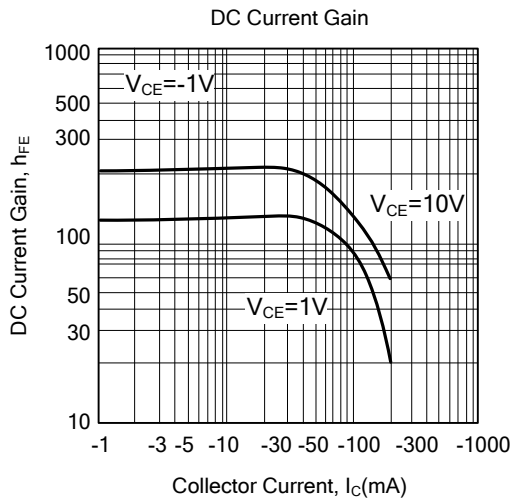
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current	I _{CEX}	V _{CE} =-30V, V _{EB} =-3V			-50	nA
Base Cut-off Current	I _{BL}	V _{CE} =-30V, V _{EB} =-3V			-50	nA
Collector-Base Breakdown Voltage	V _{CBO}	I _C =-10μA, I _E =0	-40			V
Collector-Emitter Breakdown Voltage (Note)	V _{CEO}	I _C =-1mA, I _B =0	-40			V
Emitter-Base Breakdown Voltage	V _{EBO}	I _E =-10μA, I _C =0	-6			V
DC Current Gain (Note)	h _{FE1}	V _{CE} =-1V, I _C =-0.1mA	60			
	h _{FE2}	V _{CE} =-1V, I _C =-1mA	80			
	h _{FE3}	V _{CE} =-1V, I _C =-10mA	100		300	
	h _{FE4}	V _{CE} =-1V, I _C =-50mA	60			
	h _{FE5}	V _{CE} =-1V, I _C =-100mA	30			
Collector-Emitter Saturation Voltage (Note)	V _{CE(SAT)1}	I _C =-10mA, I _B =-1mA			-0.25	V
	V _{CE(SAT)2}	I _C =-50mA, I _B =-5mA			-0.4	V
Base-Emitter Saturation Voltage	V _{BE(SAT)1}	I _C =-10mA, I _B =-1mA	-0.65		-0.85	V
	V _{BE(SAT)2}	I _C =-50mA, I _B =-5mA			-0.95	V
Transition Voltage	f _T	V _{CE} =-20V, I _C =-10mA, f=100MHz	250			MHz
Output Capacitance	C _{ob}	V _{CB} =-5V, I _E =0, f=1MHz			4.5	pF
Turn on Time	t _{ON}	V _{CC} =-3V, V _{BE} =-0.5V, I _C =-10mA, I _{B1} =-1mA			70	ns
Turn off Time	t _{OFF}	I _{B1} =1B ₂ =-1mA			300	ns

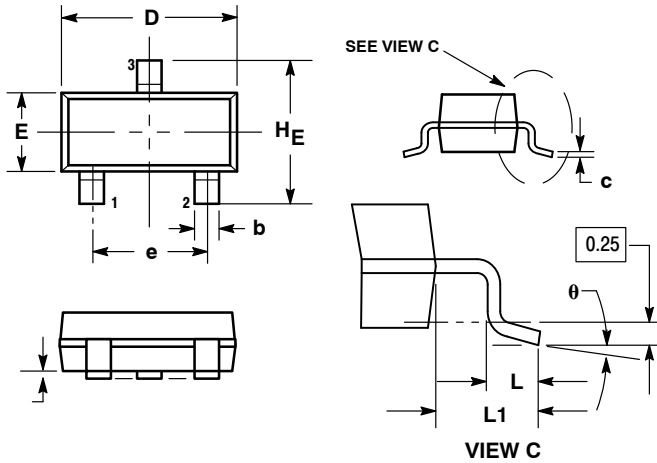
Note: Pulse test: PW ≦ 300μs, Duty Cycle ≦ 2%

■ TYPICAL CHARACTERISTICS



PACKAGE DIMENSIONS

SOT-23



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
 4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.10	0.20	0.30	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.40	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

- STYLE 6:
 PIN 1. BASE
 2. EMITTER
 3. COLLECTOR

SOLDERING FOOTPRINT

