

■ PNP Transistor

■ Features

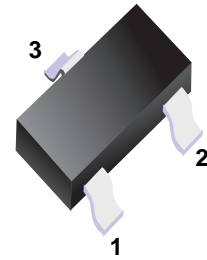
- Collector Current Capability $I_C = -0.2A$
- Collector Emitter Voltage $V_{CE0} = -40V$
- Complementary to MMBT3904W

■ Marking

Marking	2A
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■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-40	V
Collector - Emitter Voltage	V_{CEO}	-40	
Emitter - Base Voltage	V_{EBO}	-5	
Collector Current - Continuous	I_C	-200	mA
Collector Power Dissipation	P_C	200	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	625	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	



- 1.Base
- 2.Emitter
- 3.Collector

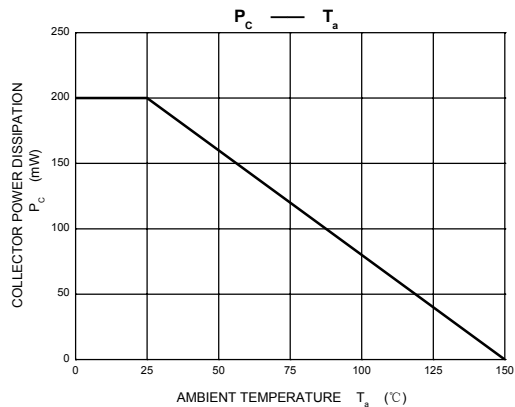
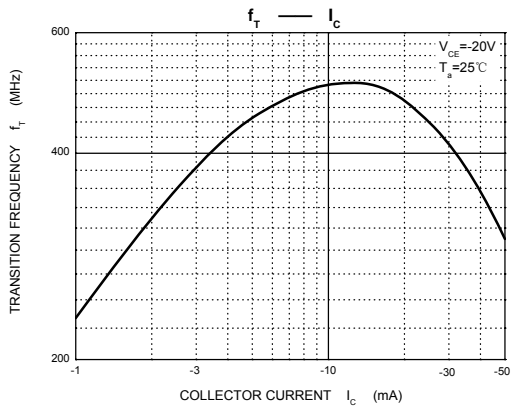
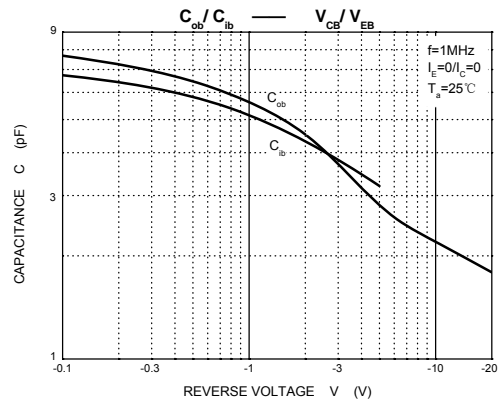
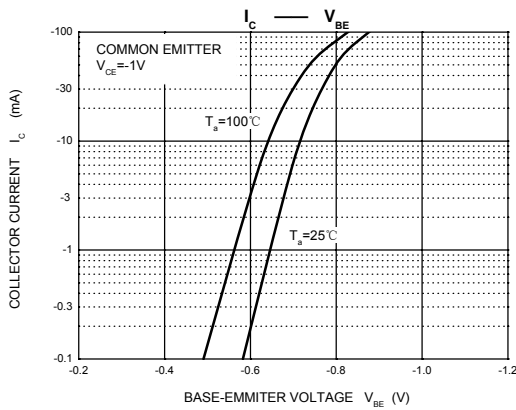
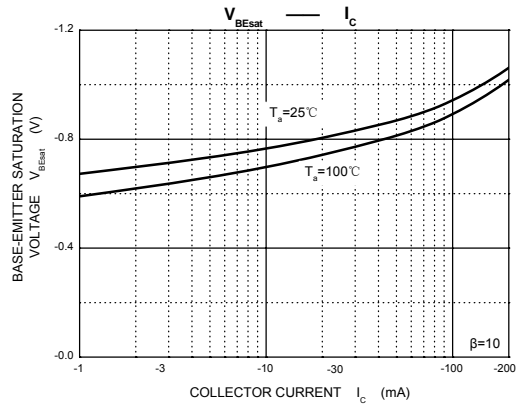
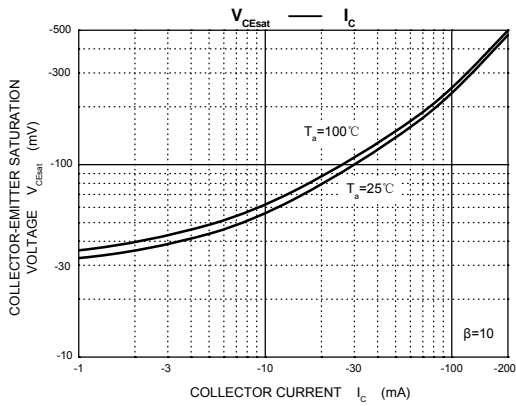
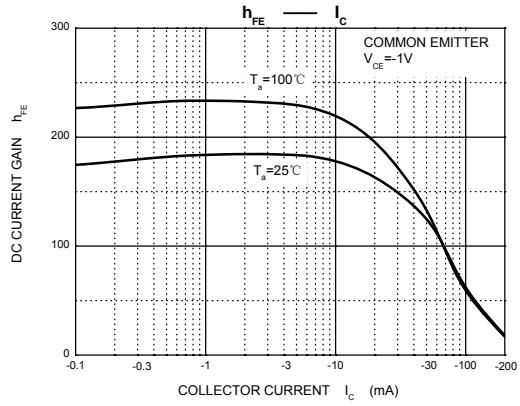
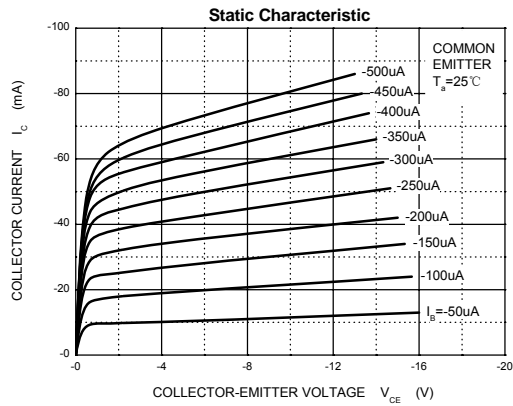
■ Simplified outline(SOT-323)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CB0}	I _c = -100 μA, I _E = 0 (Note.1)	-40			V
Collector- emitter breakdown voltage	V _{CEO}	I _c = -1 mA, I _B = 0 (Note.1)	-40			
Emitter - base breakdown voltage	V _{EBO}	I _E = -100 μA, I _C = 0 (Note.1)	-5			
Collector-base cut-off current	I _{CB0}	V _{CB} = -40 V, I _E = 0 (Note.1)			-100	nA
Base cut-off current	I _{BL}	V _{CE} = -30 V, V _{BE(off)} = -3V (Note.1)			-50	
Collector- emitter cut-off current	I _{CEX}	V _{CE} = -30 V, V _{BE(off)} = -3V			-50	
Emitter cut-off current	I _{EBO}	V _{EB} = -5V, I _C =0			-100	
Collector-emitter saturation voltage (Note.1)	V _{CE(sat)}	I _C =-10 mA, I _B =-1 mA			-0.2	V
		I _C =-50 mA, I _B =-5 mA			-0.3	
Base - emitter saturation voltage (Note.1)	V _{BE(sat)}	I _C =-10 mA, I _B =-1 mA			-0.85	
		I _C =-50 mA, I _B =-5 mA			-0.95	
DC current gain (Note.1)	h _{FE(1)}	V _{CE} = -1V, I _C = -100 μA	60			
	h _{FE(2)}	V _{CE} = -1V, I _C = -1 mA	80			
	h _{FE(3)}	V _{CE} = -1V, I _C = -10 mA	100		300	
Delay time	t _d	V _{CC} =-3V, V _{BE(off)} =-0.5V I _C =-10mA, I _{B1} =-1mA			35	nS
Rise time	t _r				35	
Storage time	t _s				225	
Fall time	t _f				75	
Collector input capacitance	C _{ib}	V _{EB} = -0.5V, I _E = 0, f=1MHz			10	pF
Collector output capacitance	C _{ob}	V _{CB} = -5V, I _E = 0, f=1MHz			4.5	
Transition frequency	f _T	V _{CE} = -20V, I _C = -10mA, f=100MHz	250			MHz

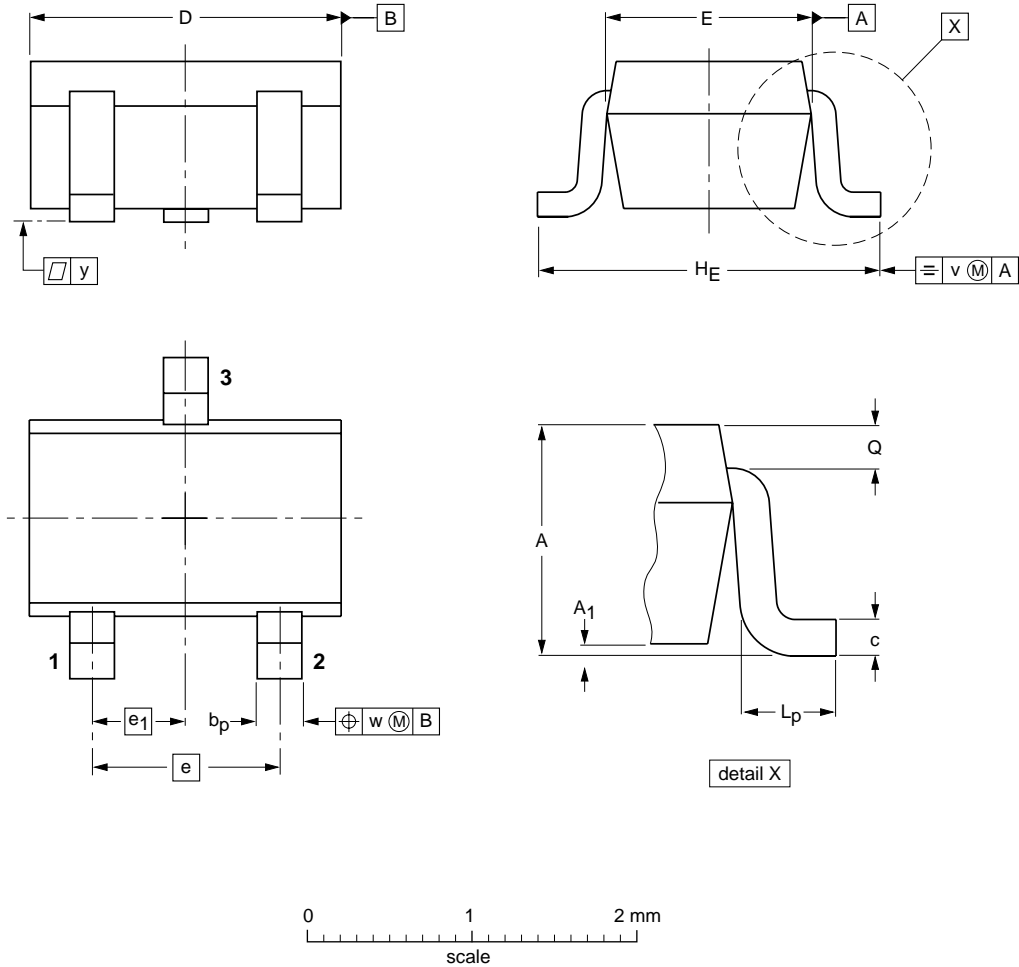
Note.1: Pulse test: pulse width ≤ 300μs, duty cycle ≤ 2.0%.

■ Typical Characteristics



Package Outline

SOT-323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-323	Tape/Reel, 7" reel	3000	EIA-481-1