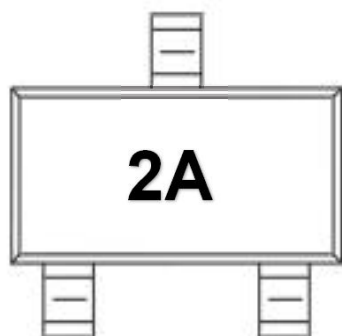


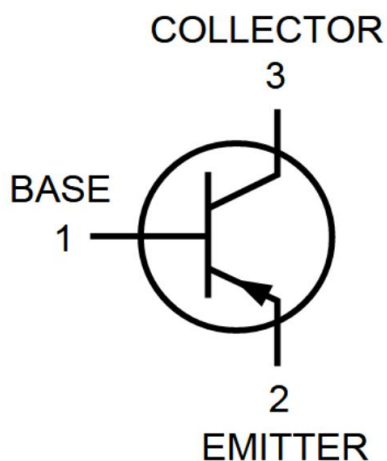
SOT-23 Plastic-Encapsulate Transistors

TRANSISTOR (PNP)

MARKING:



Equivalent Circuit:



SOT-23



FEATURES:

- ※ Complimentary to MMBT3904
- ※ Collector Current: $I_c=200\text{mA}$

MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	VCBO	-40	V
Collector-Emitter Voltage	VCEO	-40	V
Emitter-Base Voltage	VEBO	-5	V
Collector Current	IC	-200	mA
Collector Power Dissipation	PC	200	mW
Thermal Resistance From Junction To Ambient	ROJA	325	$^\circ\text{C}/\text{W}$
Junction Temperature	Tj	150	$^\circ\text{C}$
Storage Temperature	Tstg	-55~+150	$^\circ\text{C}$

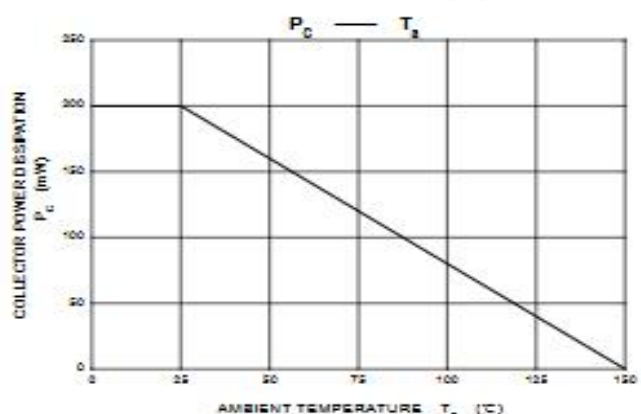
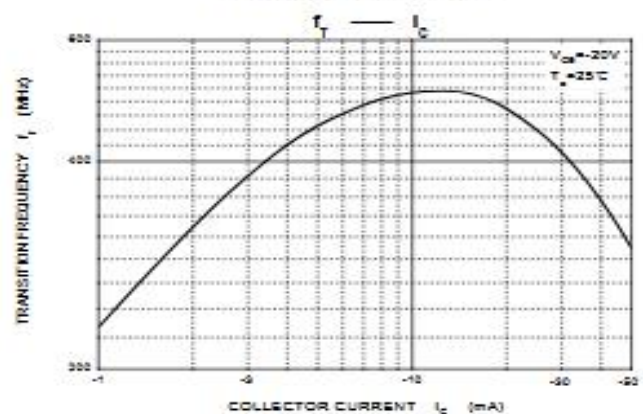
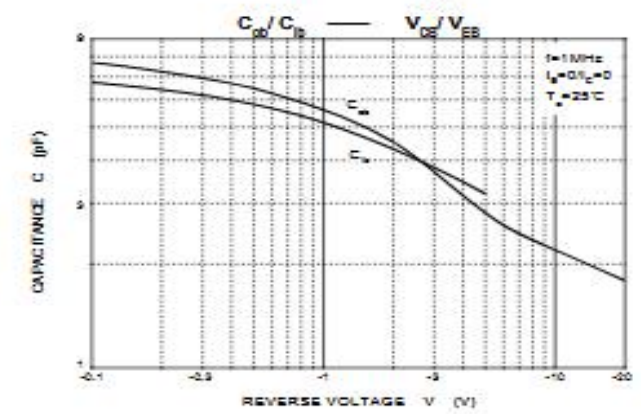
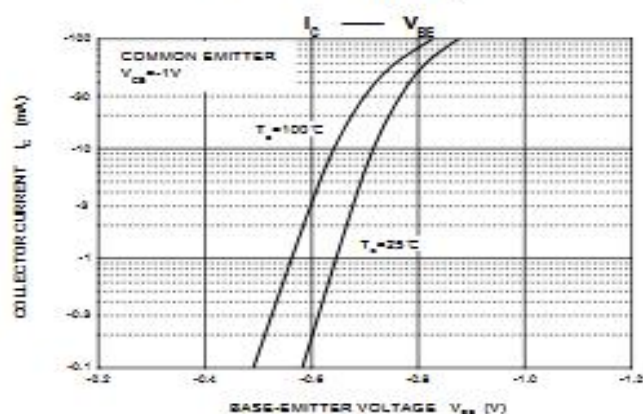
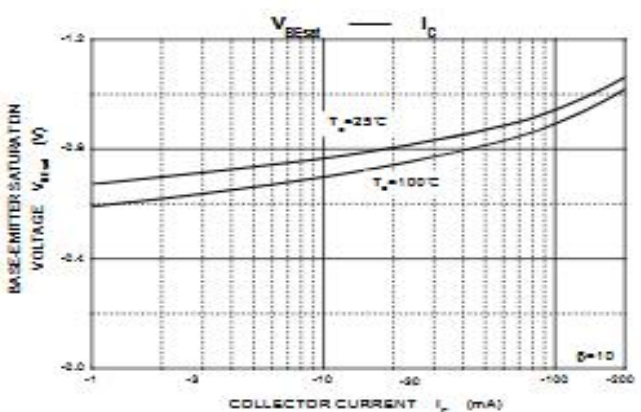
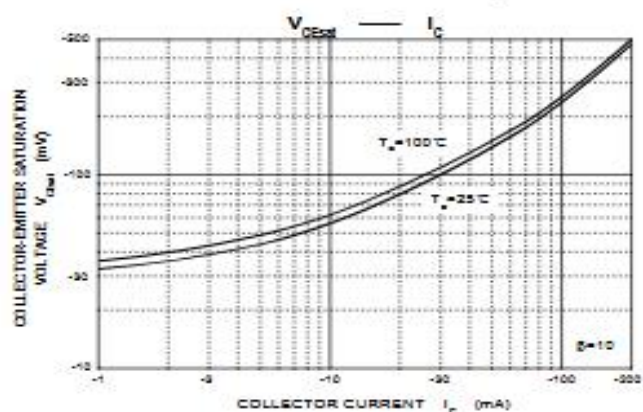
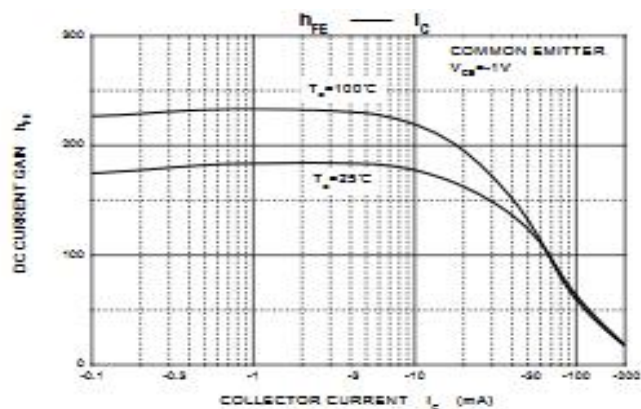
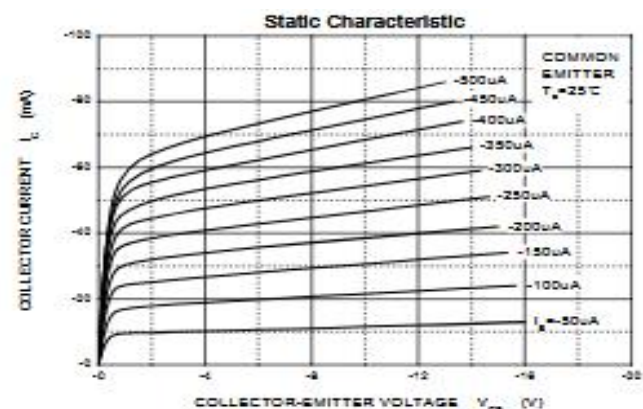
ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-base breakdown voltage	V(BR)CBO	IC= -10μA, IE=0	-40			V
Collector-emitter breakdown voltage	V(BR)CEO	IC= -1mA, IB=0	-40			V
Emitter-base breakdown voltage	V(BR)EBO	IE= -10μA, IC=0	-5			V
Collector cut-off current	ICBO	VCB= -40 V, IE=0			-0.1	μA
Collector cut-off current	ICEO	VCE=-30V, VBE(off)=-3V			-50	nA
Emitter cut-off current	IEBO	VEB= -6V, IC=0			-0.1	μA
DC current gain	hFE	VCE= -1V, IC= -10mA	100		300	
	hFE	VCE= -1V, IC= -50mA	60			
	hFE	VCE= -1V, IC= -100mA	30			
Collector-emitter saturation voltage	VCE(sat)	IC= -50 mA, IB= -5mA			-0.3	V
Base-emitter saturation voltage	VBE(sat)	IC= -50 mA, IB= -5mA			-1	V
Transition frequency	fT	VCE=6V, IC= 20mA f=30MHz	300			MHz
Delay time	td	VCC=3V, VBE=0.5V, IC=10mA, IB=1mA,			35	ns
Rise time	tr	VCC=3V, VBE=0.5V, IC=10mA, IB=1mA,			35	ns
Storage time	ts	VCC=3V, VBE=0.5V, IC=10mA, IB=1mA,			225	ns
Fall time	tf	VCC=3V, VBE=0.5V, IC=10mA, IB=1mA,			75	ns

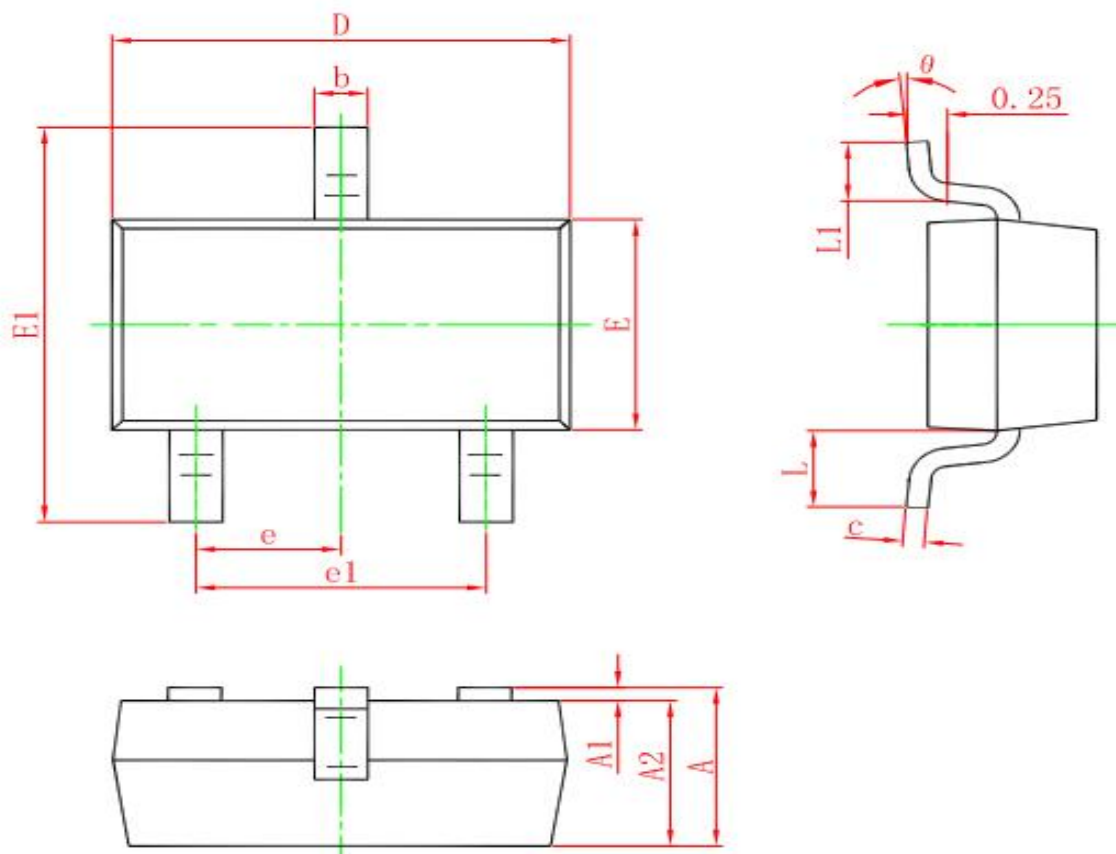
CLASSIFICATION OF hFE

HFE	100-300	
Rank	L	H
Range	100-200	200-300

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS



SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Flow (wave) soldering (solder dipping)

Product	Peak Temperature	Dipping Time
Pb device	245°C±5°C	5sec±1sec
Pb-Free device	260°C+0/-5°C	5sec±1sec



This integrated circuit can be damaged by ESD. BYSEMI Corporation recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedure can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.