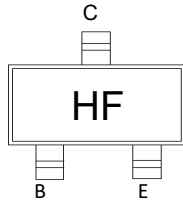


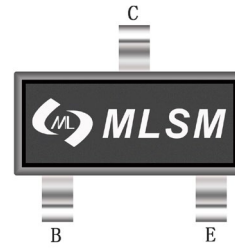
Features

- Power dissipation

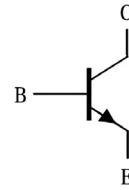
Marking:HF



Marking and pin assignment



SOT-23 top view



Schematic diagram



Pb-Free



Halogen-Free

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	150	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	625	$^{\circ}\text{C/W}$
T_J, T_{STG}	Operating and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=100\mu\text{A}, I_E=0$	60	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=0.1\text{mA}, I_B=0$	50	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=100\mu\text{A}, I_C=0$	5	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB}=60\text{V}, I_E=0$	--	--	0.1	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=5\text{V}, I_C=0$	--	--	0.1	μA
h_{fe}	DC current gain	$V_{CE}=6\text{V}, I_C=2\text{mA}$	120	--	400	
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=100\text{mA}, I_B=10\text{mA}$	--	--	0.25	V
$V_{BE(sat)}$	Base-emitter saturation voltage	$V_{CE}=100\text{mA}, I_B=10\text{mA}$	--	--	1	V
f_T	Transition frequency	$V_{CE}=10\text{V}, I_C=1\text{mA}, f=30\text{MHz}$	80	--	--	MHz

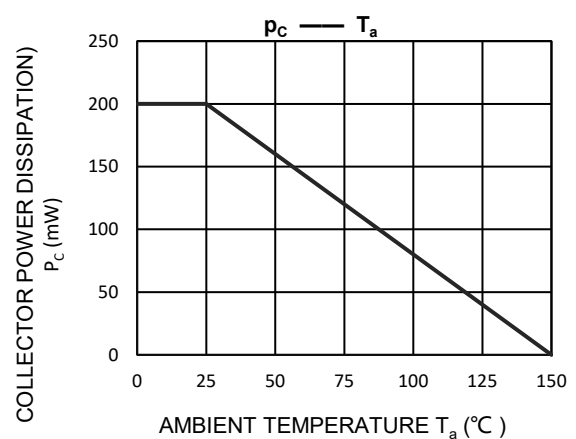
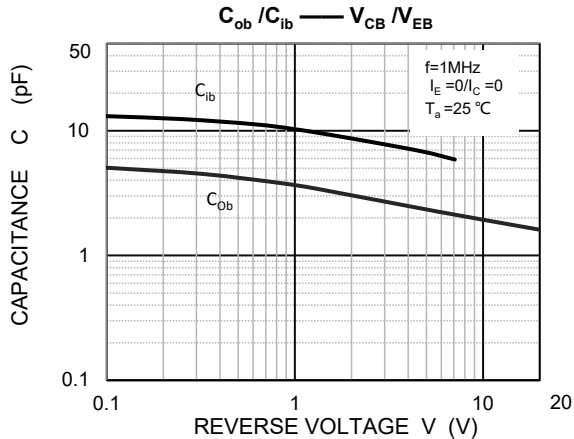
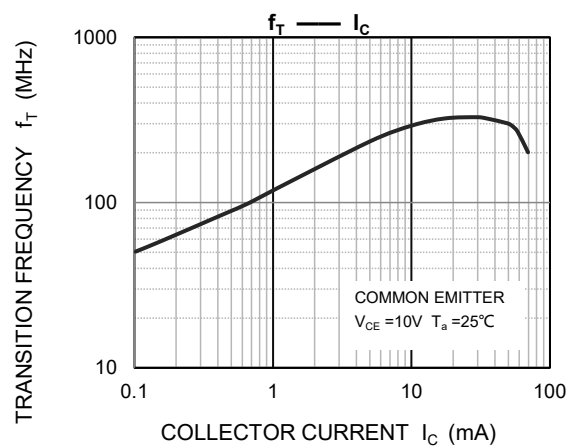
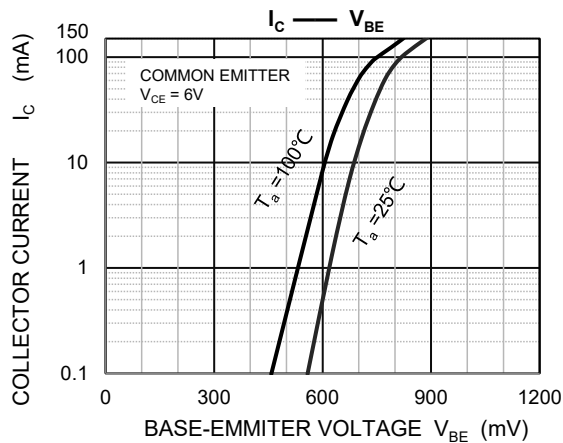
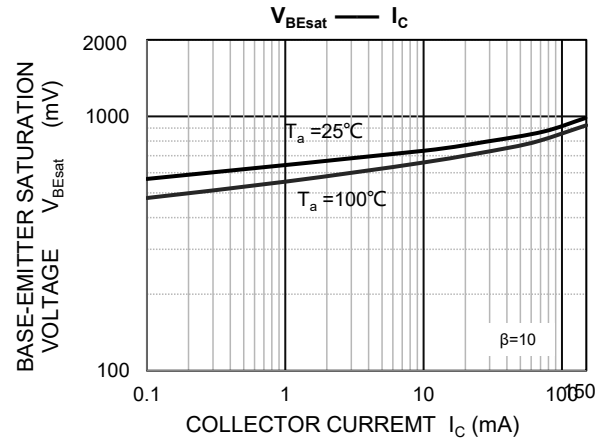
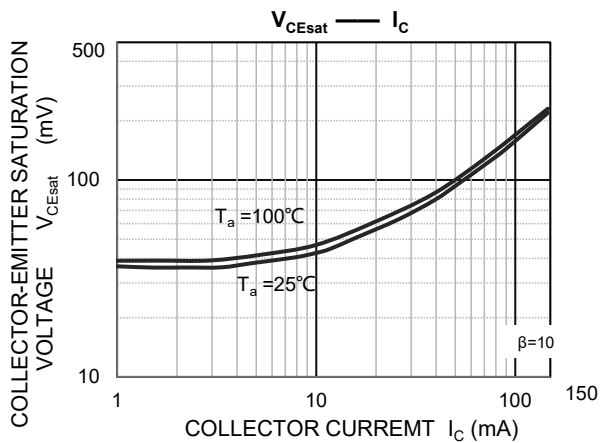
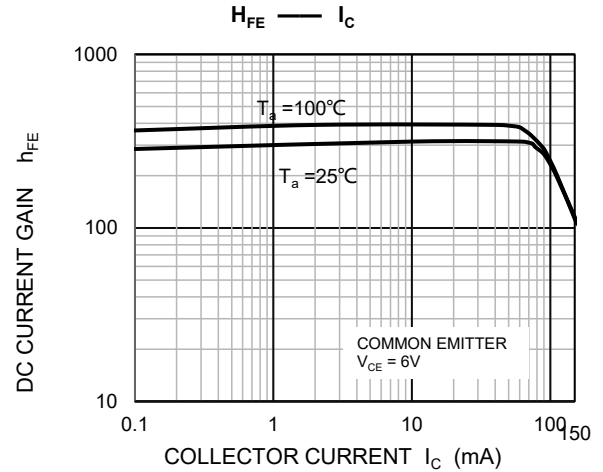
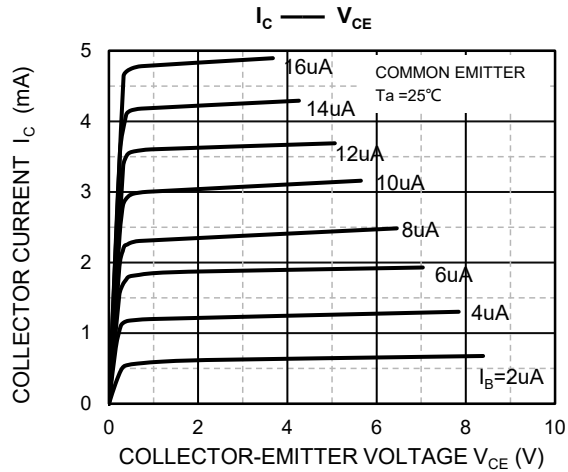
Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
C1815	SOT-23	HF	3,000	45,000	180,000	7"reel

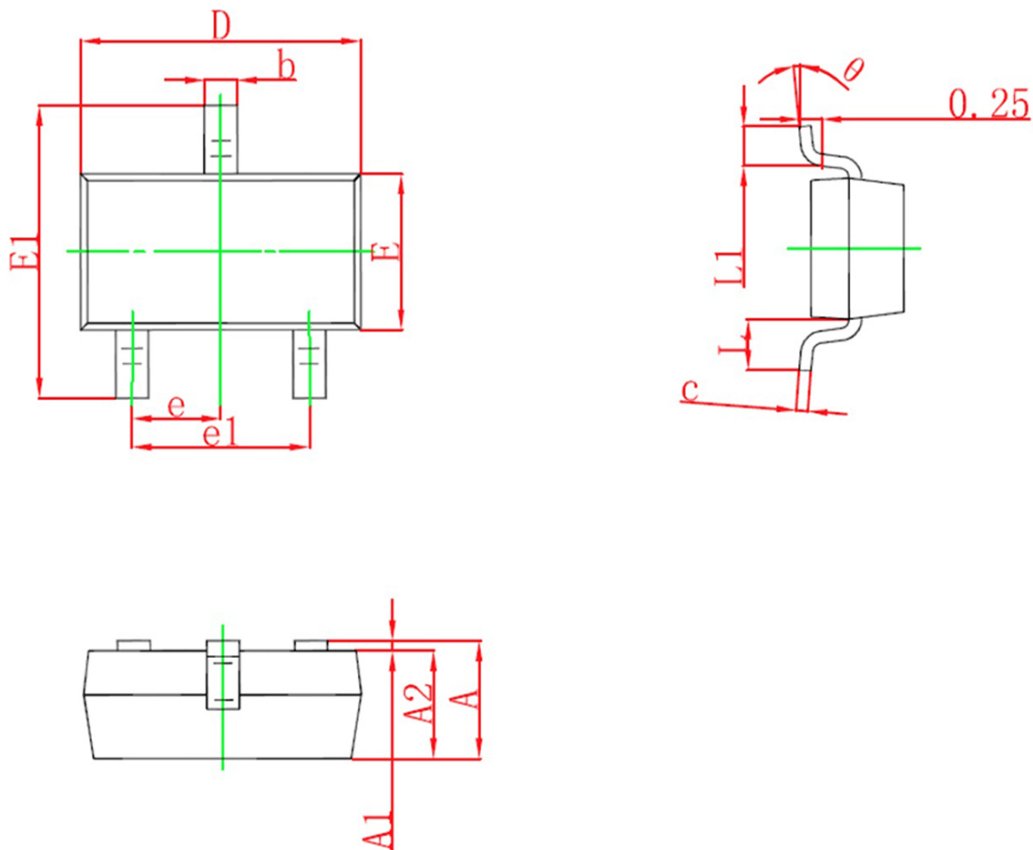
Classification Of h_{FE}

Rank	L	H
Range	120-240	200-400

Typical Operating Characteristics



SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		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
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
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°