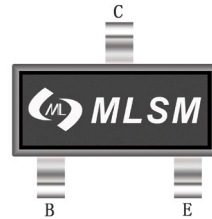
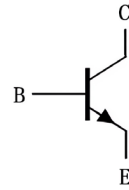


Features

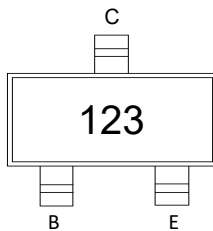
- Low saturation medium current application
- Extremely low collector saturation voltage
- Suitable for low voltage large current drivers
- High DC current gain and large current capability
- Low on resistance : $R_{ON}=0.6\Omega(\text{Max.})$ ($I_B=1\text{mA}$)



SOT-23 top view



Schematic diagram



Marking and pin assignment



Pb-Free



RoHS



Halogen-Free

Maximum Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	15	V
V_{EBO}	Emitter-Base Voltage	6.5	V
I_C	Collector Current	1	A
P_C	Collector Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	357	°C/W
T_J, T_{STG}	Operating and Storage Temperature Range	-55~+150	°C

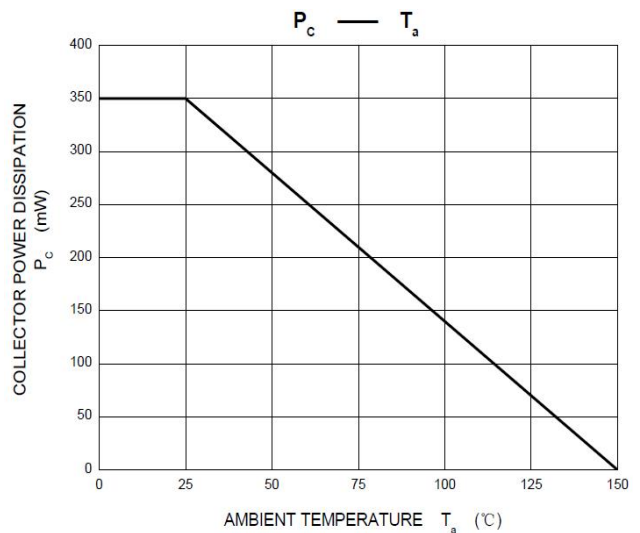
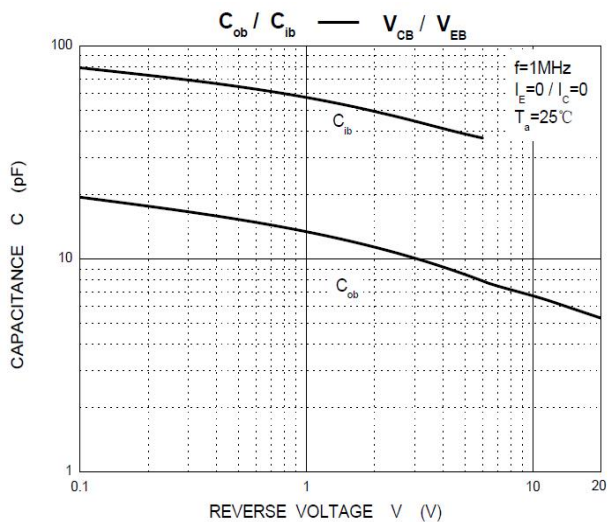
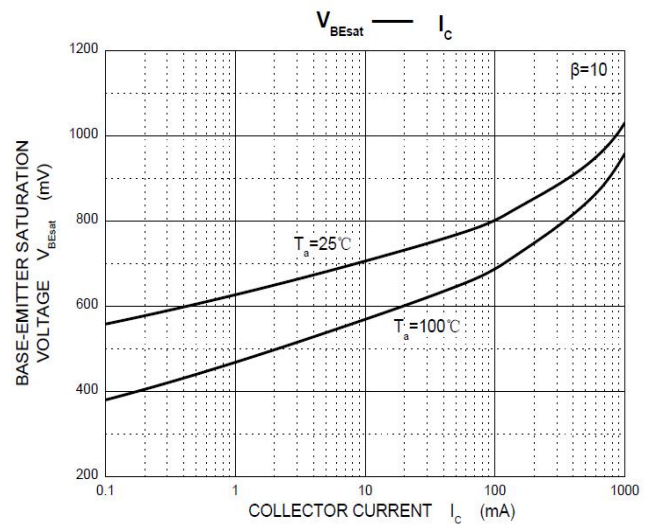
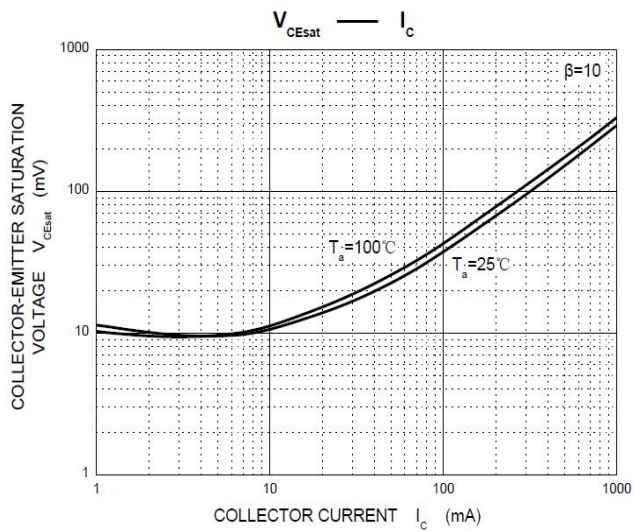
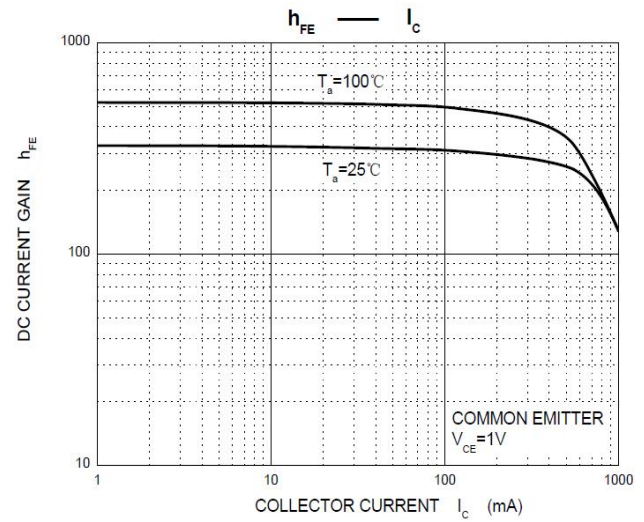
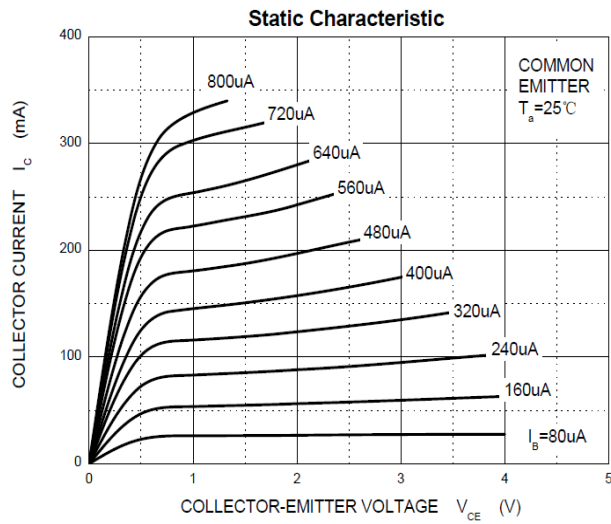
Electrical Characteristics (Ta=25°C unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=50\mu A, I_E=0$	20	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=0.1\text{mA}, I_B=0$	15	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=50\mu A, I_C=0$	6.5	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB}=20\text{V}, I_E=0$	--	--	0.1	μA
I_{EBO}	Emitter cut-off current	$V_{EB}=6\text{V}, I_C=0$	--	--	0.1	μA
h_{FE}	DC current gain	$V_{CE}=1\text{V}, I_C=100\text{mA}$	150	--	--	
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=500\text{mA}, I_B=80\text{mA}$	--	--	0.3	V
f_T	Transition frequency	$V_{CE}=5\text{V}, I_C=50\text{mA}, f=30\text{MHz}$	--	260	--	MHz
C_{ob}	Collector output capacitance	$V_{CB}=-10\text{V}, f=1\text{MHz}, I_E=0$	--	5	--	pF
R_{ON}	On resistance	$f=1\text{KHz}, I_B=1\text{mA}, V_{IN}=0.3\text{V}$	--	0.6	--	Ω

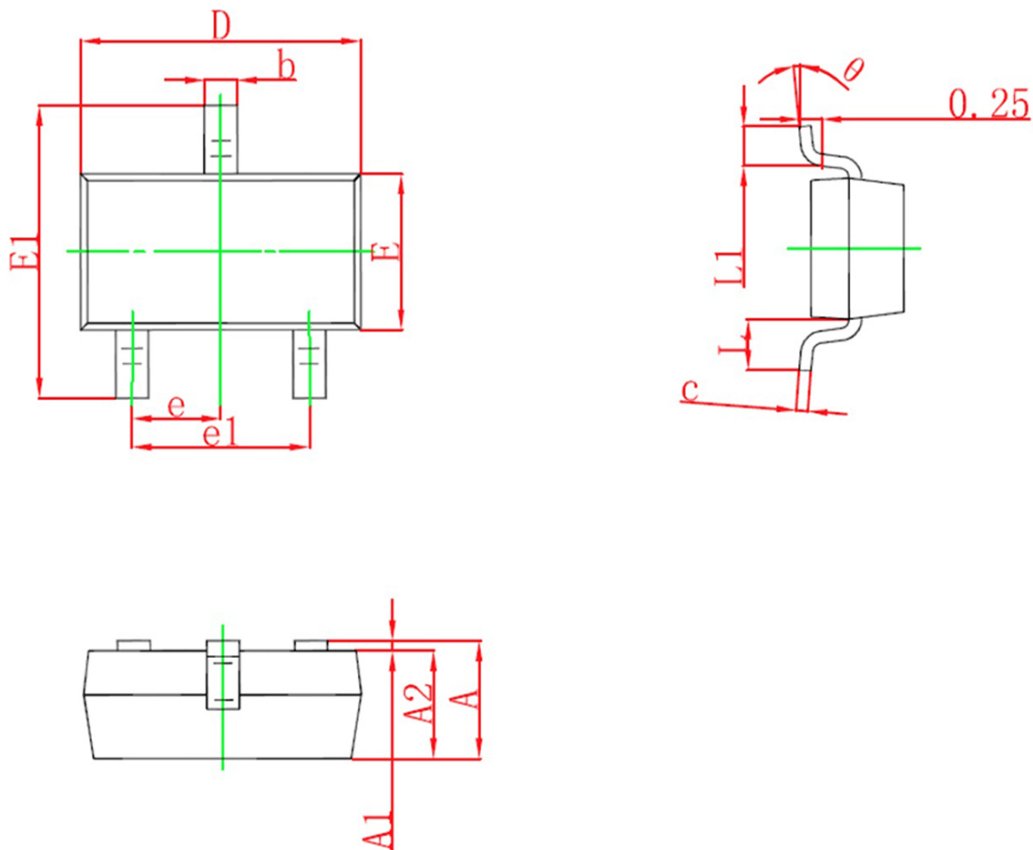
Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
STD123S	SOT-23	123	3,000	45,000	180,000	7"reel

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°