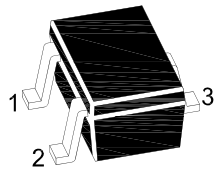
NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications.

The transistor is subdivided into four groups O, Y, G and L, according to its DC current gain.



1.Base 2.Emitter 3.Collector
SOT-523 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	60	V
Collector Emitter Voltage	V_{CEO}	50	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	150	mA
Base Current	I_B	50	mA
Power Dissipation	P_{tot}	150	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain at V_{CE} = 6 V, I_C = 2 mA	Current Gain Group O	h_{FE}	70	140	-
	Y	h_{FE}	120	240	-
	G	h_{FE}	200	400	-
	L	h_{FE}	350	700	-
at V_{CE} = 6 V, I_C = 150 mA		h_{FE}	25	-	-
Collector Base Cutoff Current at V_{CB} = 60 V		I_{CBO}	-	0.1	µA
Emitter Base Cutoff Current at V_{EB} = 5 V		I_{EBO}	-	0.1	µA
Collector Emitter Saturation Voltage at I_C = 100 mA, I_B = 10 mA		$V_{CE(sat)}$	-	0.25	V
Base Emitter Saturation Voltage at I_C = 100 mA, I_B = 10 mA		$V_{BE(sat)}$	-	1	V
Gain Bandwidth Product at V_{CE} = 10 V, I_C = 1 mA		f_T	80	-	MHz
Collector Output Capacitance at V_{CB} = 10 V, f = 1 MHz		C_{ob}	-	3	pF

MMBTSC1815E

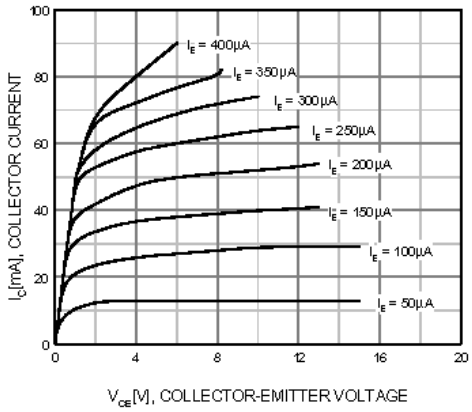


Figure 1. Static Characteristic

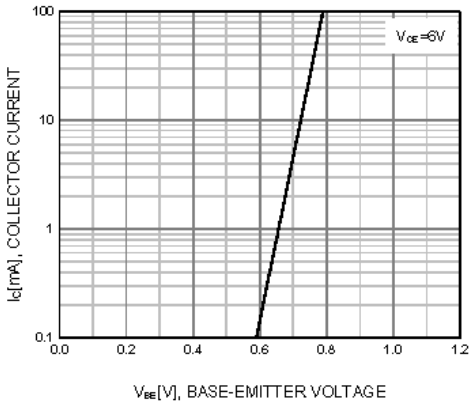


Figure 2. Transfer Characteristic

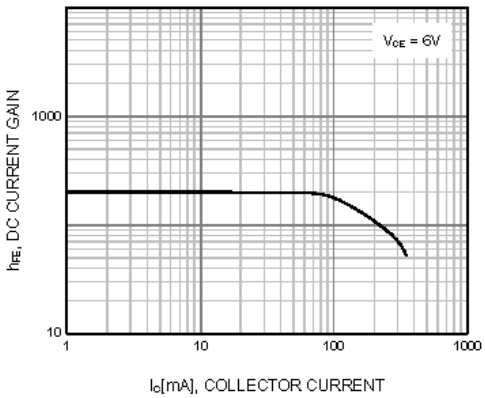


Figure 3. DC current Gain

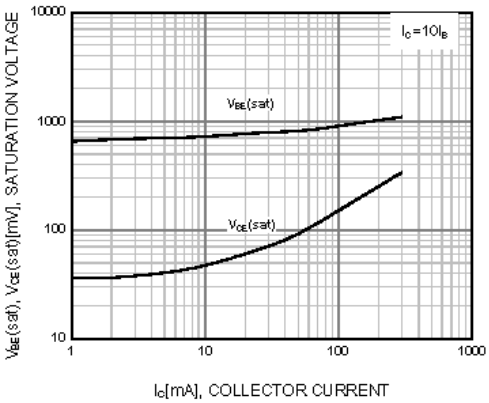


Figure 4. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

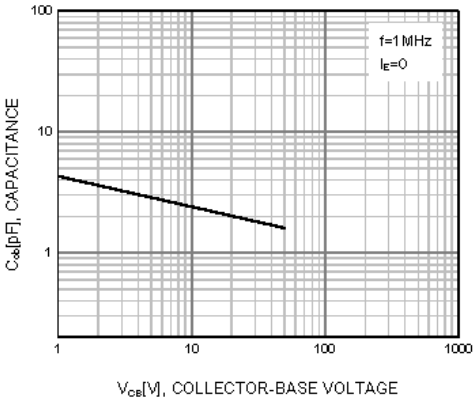


Figure 5. Output Capacitance

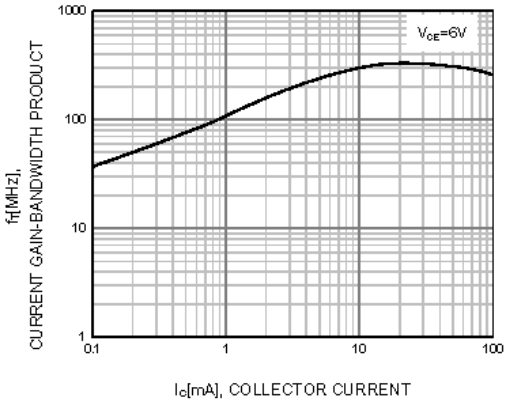
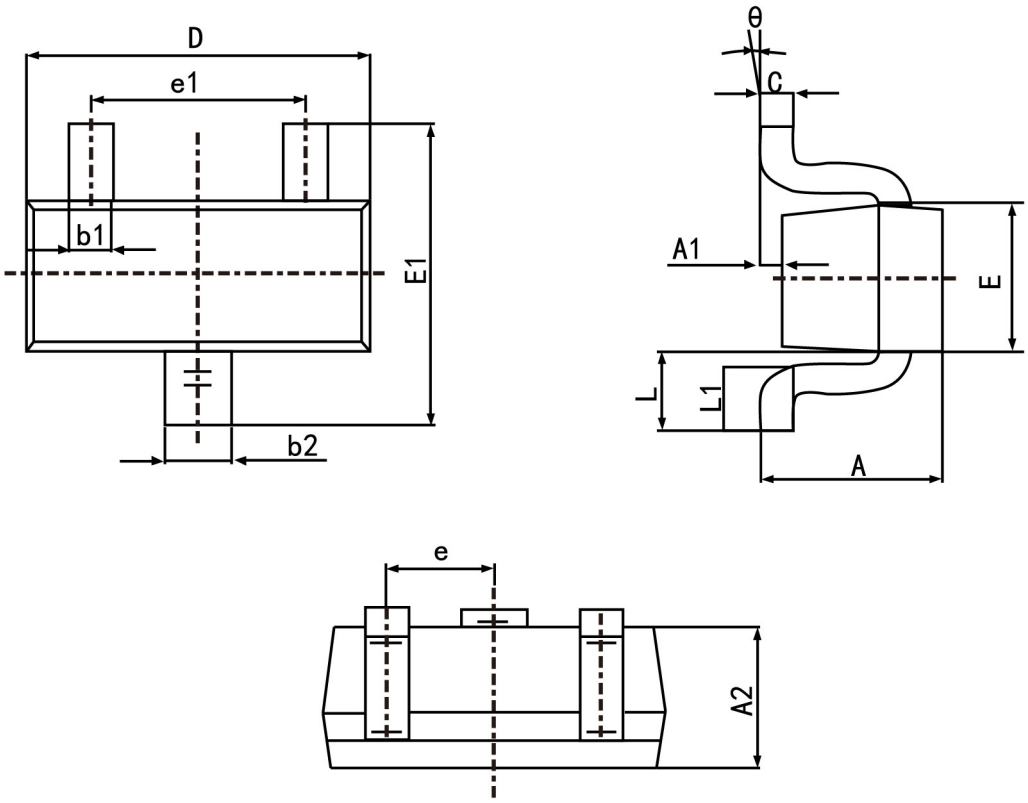


Figure 6. Current Gain Bandwidth Product

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-523**



Symbol	Dimension in Millimeters	
	Min	Max
A	0.700	0.900
A1	0.000	0.100
A2	0.700	0.800
b1	0.150	0.250
b2	0.250	0.350
c	0.100	0.200
D	1.500	1.700
E	0.700	0.900
E1	1.450	1.750
e	0.500	TYP.
e1	0.900	1.100
L	0.400 REF.	
L1	0.260	0.460
θ	0°	8°