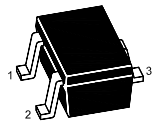
MMBTSC3838W

NPN Silicon Epitaxial Planar Transistor

for high frequency amplifier application



1.Base 2.Emitter 3.Collector
SOT-323 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	20	V
Collector Emitter Voltage	V_{CEO}	11	V
Emitter Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Collector Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_S	- 55 to + 150	°C

Characteristics at T_a = 25 °C

Parameter			Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 10 V, I_C = 5 mA	Current Gain Group	R	h_{FE}	56	-	160	-
		S	h_{FE}	120	-	240	-
Collector Cutoff Current at V_{CB} = 10 V			I_{CBO}	-	-	0.5	µA
Emitter Cutoff Current at V_{EB} = 2 V			I_{EBO}	-	-	0.5	µA
Collector Base Breakdown Voltage at I_C = 10 µA			$V_{(BR)CBO}$	20	-	-	V
Collector Emitter Breakdown Voltage at I_C = 1 mA			$V_{(BR)CEO}$	11	-	-	V
Emitter Base Breakdown Voltage at I_E = 10 µA			$V_{(BR)EBO}$	3	-	-	V
Collector Emitter Saturation Voltage at I_C = 10 mA, I_B = 5 mA			$V_{CE(sat)}$	-	-	0.5	V
Transition Frequency at V_{CE} = 10 V, I_E = 10 mA, f = 500 MHz			f_T	1.4	3.2	-	GHz
Output Capacitance at V_{CB} = 10 V, f = 1 MHz			C_{ob}	-	-	1.5	pF
Noise Figure at V_{CE} = 6 V, I_C = 2 mA , f = 500 MHz, Rg = 50 Ω			NF	-	3.5	-	dB

SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)

ISO/TS 16949 : 2002 Certificate No. 05103
ISO 14001:2004 Certificate No. 7116
ISO 9001:2000 Certificate No. 0506098

Dated : 26/05/2007

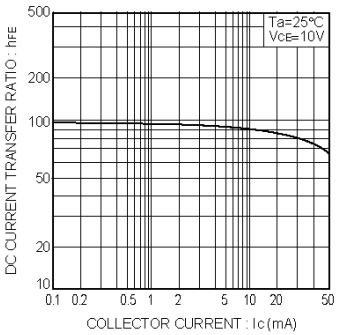


Fig.1 DC current gain vs. collector current

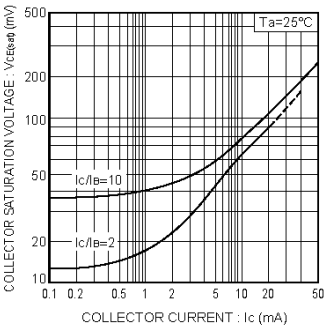


Fig.2 Collector-emitter saturation voltage vs. collector current

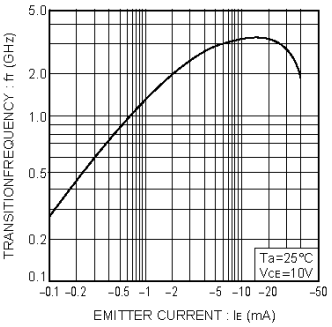


Fig.3 Gain bandwidth product vs. emitter current

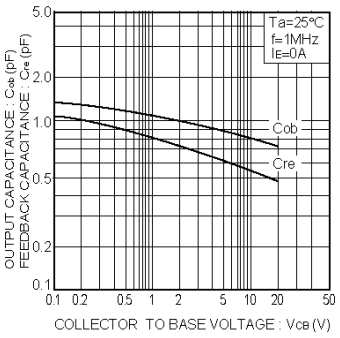


Fig.4 Capacitance vs. reverse bias voltage

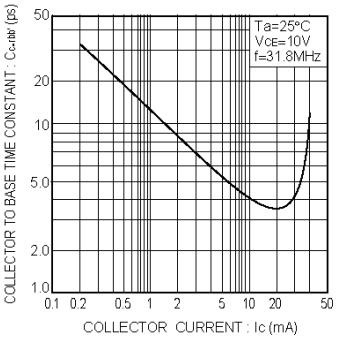


Fig.5 Collector to base time constance vs. collector current

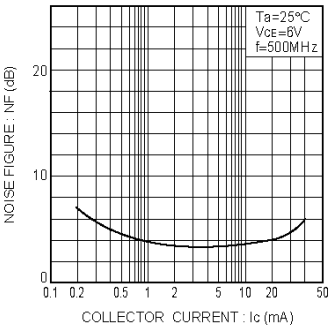


Fig.6 Noisfactor vs. collector current characteristics