



FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206

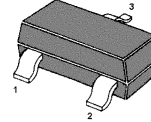
MMBTSC3838K

High-Frequency Amplifier Transistor

(11V, 50mA, 3.2GHz)

Features:

- 1) High transition frequency. (Typ. $f_t=1.5\text{GHz}$)
- 2) Small rbb'. Cc and high gain. (Typ. 4ps)
- 3) Small NF.

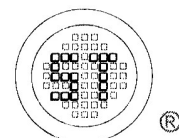


1. Base 2. Emitter 3. Collector

SOT-23 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

	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	$^\circ\text{C}$
Storage Temperature Range	T_s	-55 to +150	$^\circ\text{C}$



SEMTECH

Dated : 20/10/2005

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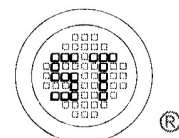
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MMBTSC3838K**Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$**

	Symbol	Min.	Typ.	Max.	Unit
DC Current Transfer Ratio at $V_{CE}=10\text{V}$, $I_C=5\text{mA}$	h_{FE}	56	-	240	-
Collector Cutoff Current at $V_{CB}=10\text{V}$	I_{CBO}	-	-	0.5	μA
Emitter Cutoff Current at $V_{EB}=2\text{V}$	I_{EBO}	-	-	0.5	μA
Collector Base Breakdown Voltage at $I_C=10\mu\text{A}$	$V_{(BR)CBO}$	20	-	-	V
Collector Emitter Breakdown Voltage at $I_C=1\text{mA}$	$V_{(BR)CEO}$	11	-	-	V
Emitter Base Breakdown Voltage at $I_E=10\mu\text{A}$	$V_{(BR)EBO}$	3	-	-	V
Collector Emitter Saturation Voltage at $I_C=10\text{mA}$, $I_B=5\text{mA}$	$V_{CE(sat)}$	-	-	0.5	V
Transition Frequency at $V_{CE}=10\text{V}$, $I_E=10\text{mA}$, $f=500\text{MHz}$	f_T	1.4	3.2	-	GHz
Collector Base Time Constant at $I_C=10\text{mA}$, $V_{CB}=10\text{V}$, $f=31.8\text{MHz}$	$r_{bb} \cdot C_C$	-	4	12	ps
Output Capacitance at $V_{CB}=10\text{V}$, $f=1\text{MHz}$	C_{OB}	-	0.8	1.5	pF
Noise Factor at $V_{CE}=6\text{V}$, $I_C=2\text{mA}$, $f=500\text{MHz}$, $R_g=50\Omega$	NF	-	3.5	-	dB

Classification of h_{FE} ¹⁾

MARKING	S24	S25
RANGE	100-160	160-240

¹⁾ h_{FE} Test conditions: $V_{CE}=10\text{V}$, $I_C=5\text{mA}$.**SEMTECH**

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