MMBR930

The RF Line
NPN Silicon High Frequency Transistor

2

. . . designed for thick and thin-film circuits using surface mount components and requiring low-noise, high-gain signal amplification at frequencies to 1 GHz.

- High Gain — G_{pe} = 11 dB Typ @ f = 500 MHz
- Low Noise — NF = 1.9 dB Typ @ f = 500 MHz

AMPLIFIER TRANSISTOR
NPN SILICON

CASE 318-05, STYLE 6
SOT-23
(TO-236AA/AB)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	12	Vdc
Collector-Base Voltage	V_{CBO}	15	Vdc
Emitter-Base Voltage	V_{EBO}	3.0	Vdc
Collector Current — Continuous	I_C	35	mAdc
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
*Total Device Dissipation, T_A = 25°C Derate above 25°C	P_D	350 2.8	mW mW/°C
Storage Temperature	T_{stg}	150	°C
*Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	°C/W

*Package mounted on 99.5% alumina 10 x 8 x 0.6 mm.

DEVICE MARKING

MMBR930 = 7C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C = 1.0 mAdc, I_B = 0)	$V_{(BR)CEO}$	12	—	—	Vdc
Collector-Base Breakdown Voltage (I_C = 0.1 mAdc, I_E = 0)	$V_{(BR)CBO}$	15	—	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 0.1 mAdc, I_C = 0)	$V_{(BR)EBO}$	3.0	—	—	Vdc
Collector Cutoff Current (V_{CB} = 5.0 Vdc, I_E = 0)	I_{CBO}	—	—	50	nAdc
ON CHARACTERISTICS					
DC Current Gain (I_C = 30 mAdc, V_{CE} = 5.0 Vdc)	h_{FE}	25	—	250	—
SMALL-SIGNAL CHARACTERISTICS					
Collector-Base Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz)	C_{cb}	—	—	1.0	pF
Noise Figure (I_C = 2.0 mAdc, V_{CE} = 5.0 Vdc, f = 0.5 GHz) (I_C = 2.0 mAdc, V_{CE} = 5.0 Vdc, f = 1.0 GHz)	NF	— —	1.9 2.5	— —	dB
Common-Emitter Amplifier Power Gain (I_C = 2.0 mAdc, V_{CE} = 5.0 Vdc, f = 0.5 GHz) (I_C = 2.0 mAdc, V_{CE} = 5.0 Vdc, f = 0.5 GHz)	G_{pe}	— —	11 8.0	— —	dB