

MOTOROLA
SEMICONDUCTOR TECHNICAL DATA

The RF Line
NPN Silicon
High-Frequency Transistor

... designed primarily for use in low-power amplifiers to 1.0 GHz. Ideal for pagers and other battery operated systems where power consumption is critical.

- Available in tape and reel packaging options by adding suffix:
T1 suffix = 3,000 units per reel
T3 suffix = 10,000 units per reel

MMBR931LT1, T3

**RF AMPLIFIER
TRANSISTOR
NPN SILICON**

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	5.0	Vdc
Collector-Base Voltage	V _{CBO}	10	Vdc
Emitter-Base Voltage	V _{EBO}	2.0	Vdc
Collector Current — Continuous	I _C	5.0	mAdc
Maximum Junction Temperature	T _{Jmax}	150	°C
Power Dissipation, T _{case} = 75°C* Derate linearly above 75°C @	PD(max)	0.150 2.00	W mW/°C

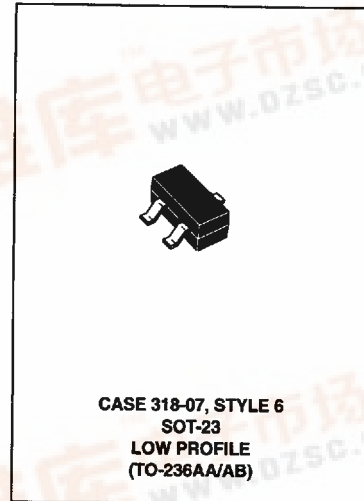
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Storage Temperature	T _{stg}	-55 to +150	°C
Thermal Resistance Junction to Case*	R _{θJC}	500	°C/W

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

DEVICE MARKING

MMBR931LT1, T3 = 7D



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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I _C = 0.1 mAdc, I _B = 0)	V _{(BR)CEO}	15	—	—	Vdc
Collector-Base Breakdown Voltage (I _C = 0.01 mAdc, I _E = 0)	V _{(BR)CBO}	20	—	—	Vdc
Emitter-Base Breakdown Voltage (I _E = 0.1 mAdc, I _C = 0)	V _{(BR)EBO}	3.5	—	—	Vdc
Collector Cutoff Current (V _{CB} = 5.0 Vdc, I _E = 0)	I _{CBO}	—	—	50	nAdc

ON CHARACTERISTICS

DC Current Gain (I _C = 0.25 mAdc, V _{CE} = 1.0 Vdc)	h _{FE}	50	—	150	—
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SMALL-SIGNAL CHARACTERISTICS

Collector-Base Capacitance (V _{CB} = 1.0 Vdc, I _E = 0, f = 1.0 MHz)	C _{cb}	—	—	0.5	pF
Noise Figure (I _E = 0.25 mAdc, V _{CE} = 1.0 Vdc, f = 1.0 GHz)	NF	—	4.3	—	dB
Power Gain at Optimum Noise Figure (I _E = 0.25 mAdc, V _{CE} = 1.0 Vdc, f = 1.0 GHz)	GNF	—	10	—	—

REV 6

MOTOROLA RF DEVICE DATA

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