

The RF Line NPN Silicon High-Frequency Transistor

... designed primarily for use in high-gain, low-noise small-signal amplifiers for operation up to 2.5 GHz. Also usable in applications requiring fast switching times.

- High Current-Gain — Bandwidth Product
- Low Noise Figure @ $f = 1.0$ GHz —
 $NF(\text{matched}) = 1.8$ dB (Typ) (MRF9011LT1)
 $= 1.9$ dB (Typ) (MMBR901LT1, T3)
- High Power Gain —
 $G_{pe}(\text{matched}) = 13.5$ dB (Typ) @ $f = 1.0$ GHz (MRF9011LT1)
 $= 12.0$ dB (Typ) @ $f = 1.0$ GHz (MMBR901LT1, T3)
- Guaranteed RF Parameters (MRF9011LT1)
- Surface Mounted SOT-23 & SOT-143 Offer Improved RF Performance
 Lower Package Parasitics
 High Gain
- Available in tape and reel packaging options:
 T1 suffix = 3,000 units per reel
 T3 suffix = 10,000 units per reel

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	15	Vdc
Collector-Base Voltage	V_{CBO}	25	Vdc
Emitter-Base Voltage	V_{EBO}	2.0	Vdc
Collector Current — Continuous	I_C	30	mAdc
Power Dissipation @ $T_C = 75^\circ\text{C}$ MMBR901LT1, T3; MRF9011LT1	$P_D(\text{max})$	0.300	Watt
Derate above 25°C		4.00	mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 75^\circ\text{C}$ Derate above 75°C MPS901	P_D	300 4.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 75^\circ\text{C}$ Derate above 75°C MRF901	P_D	0.375 5.0	Watt mW/ $^\circ\text{C}$
Storage Temperature Range MMBR901LT1, T3 MRF9011LT1	T_{stg}	-55 to +150 -65 to +150	$^\circ\text{C}$
Maximum Junction Temperature	$T_{J(\text{max})}$	150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Storage Temperature	T_{stg}	150	$^\circ\text{C}$
Thermal Resistance, Junction to Case MRF9011LT1, MMBR901LT1, T3	$R_{\theta JC}$	250	$^\circ\text{C}/\text{W}$

DEVICE MARKING

MRF9011LT1 = 01	MMBR901LT1, T3 = 7A
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NOTE:

1. Package mounted on 99.5% alumina $10 \times 8 \times 0.6$ mm.

MMBR901LT1, T3
MPS901 MRF901
MRF9011LT1

$I_C = 30$ mA
SURFACE MOUNTED
HIGH-FREQUENCY
TRANSISTOR
NPN SILICON



CASE 318-07, STYLE 6
SOT-23
LOW PROFILE, MMBR901LT1, T3



CASE 29-04, STYLE 2
TO-226AA (TO-92)
MPS901



CASE 317-01, STYLE 2
MRF901



CASE 318A-05, STYLE 1
SOT-143
LOW PROFILE, MRF9011LT1