New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

The RF Line

MRF571
MRF572
MRFC572

NPN SILICON HIGH FREQUENCY TRANSISTORS

. . . designed for low-noise, wide dynamic range front end amplifiers, low-noise VCO's, and microwave power multipliers.

- Low Noise
- High Gain
- Available in Low Cost Plastic, High Reliability Ceramic or Die
- State-of-the-Art Technology
  - Fine Line Geometry
  - Ion Implanted Arsenic Emitters
  - Gold Top Metallization and Wires
  - Silicon Nitride Passivation
- Fully Characterized

f_T = 8.0 GHz @ 50 mA
NF = 1.0 dB @ 500 MHz
NF = 1.5 dB @ 1.0 GHz
NF = 2.5 dB @ 2.0 GHz

HIGH FREQUENCY TRANSISTORS

NPN SILICON

MAXIMUM RATINGS

Ratings	Symbol	MRFC572 Chip	MRF571 Macro-X Case 317-01 Style 2	MRF572 Case 303-01 Style 1	Unit
Collector-Emitter Voltage	V_{CEO}	10	10	10	Vdc
Collector-Base Voltage	V_{CBO}	20	20	20	Vdc
Emitter-Base Voltage	V_{EBO}	3.0	3.0	3.0	Vdc
Collector Current — Continuous	I_C	70	70	70	mAdc
Total Device Dissipation @ T_C = 50°C(1) Derate above T_C = 50°C	P_D	0.75 T_J = 200°C max	1.0 10	0.75 5.0	Watts mW/°C
Storage Temperature	T_{stg}	−65 to +200	−65 to +150	−65 to +200	°C

NOTE 1. Case temperature measured on collector lead immediately adjacent to body of package.

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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector-Emitter Breakdown Voltage (I_C = 1.0 mAdc, I_E = 0)		$V_{(BR)CEO}$	10	12	—	Vdc
Collector-Base Breakdown Voltage (I_C = 0.1 mAdc, I_B = 0)		$V_{(BR)CBO}$	20	—	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 50 μAdc, I_C = 0)		$V_{(BR)EBO}$	2.5	—	—	Vdc
Collector Cutoff Current (V_{CB} = 8.0 Vdc, I_E = 0)		I_{CBO}	—	—	10	μAdc
ON CHARACTERISTICS						
DC Current Gain (I_C = 30 mAdc, V_{CE} = 5.0 Vdc)		h_{FE}	50	—	300	—
DYNAMIC CHARACTERISTICS						
Collector-Base Capacitance (V_{CB} = 6.0 Vdc, I_E = 0, f = 1.0 MHz)		C_{cb}	—	0.7	1.0	pF
Current Gain — Bandwidth Product (V_{CE} = 8.0 Vdc, I_C = 50 mA, f = 1.0 GHz)		f_T	—	8.0	—	GHz
FUNCTIONAL TESTS						
Gain @ Noise Figure (I_C = 5.0 mAdc, V_{CE} = 6.0 Vdc)	f = 0.5 GHz	G_{NF}	—	16.5	—	dB
	f = 1.0 GHz		10	12	—	
Noise Figure (I_C = 5.0 mAdc, V_{CE} = 6.0 Vdc)	f = 0.5 GHz	NF	—	1.0	—	dB
	f = 1.0 GHz		—	1.5	2.0	
MRF571	f = 2.0 GHz		—	2.8	—	
MRF572	f = 2.0 GHz		—	2.5	—	

Quality Semi-Conductors