

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

NPN SILICON RF POWER TRANSISTOR

... designed for 12.5 volt low band VHF large-signal power amplifier applications in commercial and industrial FM equipment.

- Specified 12.5 V, 50 MHz Characteristics —
Output Power = 70 W
Minimum Gain = 11 dB
Efficiency = 50%
- Load Mismatch Capability at High Line and RF Overdrive

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	18	Vdc
Collector-Base Voltage	V _{CBO}	36	Vdc
Emitter-Base Voltage	V _{EBO}	4.0	Vdc
Collector-Current — Continuous	I _C	20	Adc
Total Device Dissipation @ T _C = 25°C (1) Derate above 25°C	P _D	250 1.43	Watts W/°C
Storage Temperature Range	T _{stg}	-65 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case (2)	R _{θJC}	0.7	°C/W

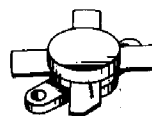
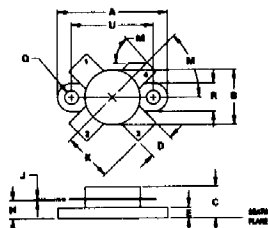
- (1) These devices are designed for RF operation. The total device dissipation rating applies only when the devices are operated as RF amplifiers.
(2) Thermal Resistance is determined under specified RF operating conditions by infrared measurement techniques.

MRF492 MRF492A

70 W 50 MHz

RF POWER TRANSISTOR

NPN SILICON

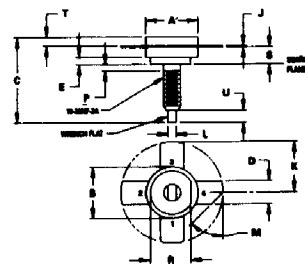


STYLE 1:
PIN 1: EMITTER
2: BASE
3: EMITTER
4: COLLECTOR

MRF492

NOTES:
1. DIMENSIONING AND TOLERANCING PER
ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	DIMENSIONS		INCHES	
	MIN	MAX	MIN	MAX
A	24.39	25.14	0.960	0.990
B	11.82	12.45	0.465	0.490
C	5.82	6.00	0.229	0.235
D	5.82	6.00	0.229	0.235
E	2.14	2.78	0.085	0.110
F	3.00	3.52	0.118	0.139
G	9.00	9.12	0.354	0.360
H	11.80	—	0.465	—
I	40° NOM	—	40° NOM	—
J	2.50	2.50	0.115	0.115
K	6.52	6.47	0.256	0.255
L	16.20	16.54	0.638	0.651



STYLE 1:
PIN 1: EMITTER
2: BASE
3: EMITTER
4: COLLECTOR

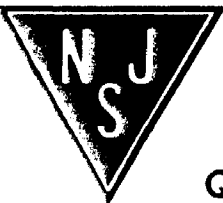
MRF492A

NOTES:
1. DIMENSIONING AND TOLERANCING
PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	DIMENSIONS		INCHES	
	MIN	MAX	MIN	MAX
A	12.45	12.45	0.490	0.490
B	10.84	10.80	0.425	0.425
C	10.80	10.72	0.425	0.425
D	5.82	5.87	0.229	0.230
E	2.14	—	0.085	—
F	3.00	3.10	0.118	0.122
G	12.45	—	0.490	—
H	1.00	1.00	0.039	0.039
I	40° NOM	—	40° NOM	—
J	2.50	2.50	0.115	0.115
K	6.52	6.47	0.256	0.255
L	16.20	16.54	0.638	0.651

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors



MRF492, MRF492A

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage ($I_C = 100\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	18	—	—	Vdc
Collector-Emitter Breakdown Voltage ($I_C = 50\text{ mA}$, $V_{BE} = 0$)	$V_{(BR)CES}$	38	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10\text{ mA}$, $I_C = 0$)	$V_{(BR)EBO}$	4.0	—	—	Vdc
Collector Cutoff Current ($V_{CE} = 13.6\text{ Vdc}$, $V_{BE} = 0$)	I_{CES}	—	—	20	mA
ON CHARACTERISTICS					
DC Current Gain ($I_C = 5.0\text{ A}$, $V_{CE} = 5.0\text{ Vdc}$)	h_{FE}	10	—	150	—
DYNAMIC CHARACTERISTICS					
Output Capacitance ($V_{CB} = 15\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{ob}	—	275	450	pF
FUNCTIONAL TESTS					
Common-Emitter Amplifier Power Gain ($V_{CC} = 12.5\text{ Vdc}$, $P_{out} = 70\text{ W}$, $f = 50\text{ MHz}$)	G_{PE}	11	13	—	dB
Collector Efficiency ($V_{CC} = 12.5\text{ Vdc}$, $P_{out} = 70\text{ W}$, $f = 50\text{ MHz}$)	η	50	—	—	%

FIGURE 1 — 50 MHz TEST CIRCUIT

