N-CHANNEL, J-FET DEPLETION MODE TRANSISTOR

Screened in reference to MIL-PRF-19500

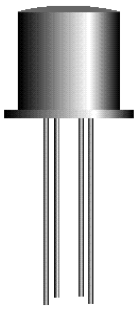
DESCRIPTION

The NJF6510 is ideal for functioning as a VHF and a small signal amplifier. This part number is also an equivalent to the MX2N3822.

Important: For the latest information, visit our website http://www.microsemi.com.

FEATURES

- Screened to MX level in reference to MIL-PRF-19500 JANTX level.



TO-72 (TO-206AF) Package

APPLICATIONS / BENEFITS

- Low-power transistor.
- Leaded metal TO-72 package.

MAXIMUM RATINGS @ T_C = +25 °C unless otherwise noted.

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	T_J and T_{STG}	-55 to +200	°C
Gate-Source Voltage	V_{GSR}	50	V
Drain-Source Voltage	V_{DS}	50	V
~~Grain~~-Drain -Gate Voltage	V_{DG}	50	V
Steady-State Power Dissipation @ T_A = +25 ºC (1)	P_D	300	mW
Gate Current	I_{GF}	10	mA

Notes: 1. Derate linearly 1.7 mW/°C for T_A > +25 °C.

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MECHANICAL and PACKAGING

- CASE: Ni plated kovar, Ni cap.
- TERMINALS: Au over Ni plated kovar leads.
- MARKING: Manufacturer's ID, date code, part number.
- POLARITY: See case outline on last page.
- WEIGHT: 0.322 grams.
- See Package Dimensions on last page.

PART NOMENCLATURE

SYMBOLS & DEFINITIONS

Symbol	Definition
I_D	Drain current.
I_G	Gate current.
R_G	Gate resistor.
T_A	Ambient or free air temperature.
T_C	Case temperature.

ELECTRICAL CHARACTERISTICS @ T_A = +25 °C unless otherwise noted.

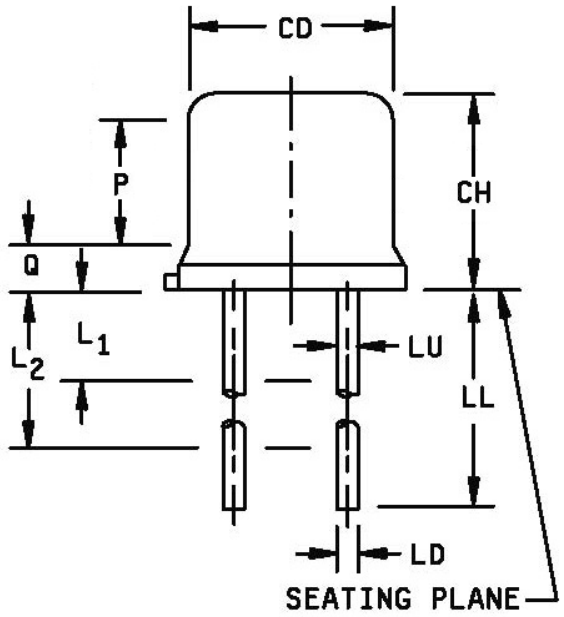
OFF CHARACTERTICS

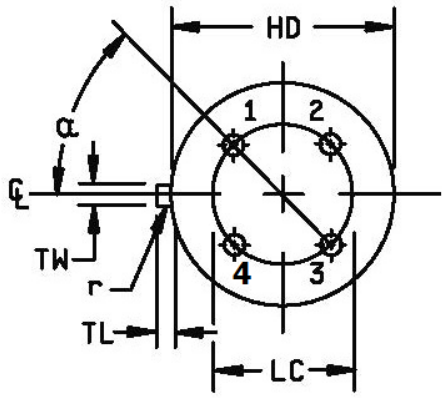
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Gate-Source Breakdown Voltage V_{DS} = 0, I_G = 1.0 μA	$V_{(BR)GSSR}$	50		V
Gate Reverse Current V_{GS} = 0, V_{DS} = 30 V V_{GS} = 0, V_{DS} = 30 V V_{DS} = 0, V_{GS} = 20 V	I_{GSSR}		0.1	ηA
Drain Saturation Current (Pulsed) V_{GS} = 0, V_{DS} = 15 V	I_{DSS}	2.0	10	mA
Gate-Source Voltage V_{DS} = 15 V, I_D = 400 μA	V_{GS}	1.0	4.0	V
Gate-Source Cutoff Voltage V_{DS} = 15 V, I_D = 0.5 ηA	$V_{GS(off)}$		6.0	V

DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Small-Signal Common Source, Short-Circuit Forward Transfer Admittance V_{GS} = 0, V_{DS} = 15 V, f = 1.0 kHz	$\|y_{fs}\|$	3000	6500	μS
Small-Signal, Common Source, Short-Circuit Output Admittance V_{GS} = 0, V_{DS} = 15 V, f = 1.0 kHz	$\|y_{os}\|$		20	μS
Small-Signal, Common-Source Short-Circuit Input Capacitance V_{GS} = 0 V, V_{DS} = 15 V, 100 kHz ≤ f ≤ 1.0 MHz	C_{iss}		6.0	pF
Small-Signal, Common-Source Reverse Transfer Capacitance V_{DS} = 15 V, V_{GS} = 0, 100 kHz ≤ f ≤ 1.0 MHz	C_{rss}		3.0	pF
Common Source Spot Noise Figure V_{GS} = 0, V_{DS} = 15 V, R_G = 1 MΩ f = 10 Hz f = 1.0 kHz	NF_1		 5.0 2.5	dB

PACKAGE DIMENSIONS





Ltr	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
CD	.178	.195	4.52	4.95	
CH	.170	.210	4.32	5.33	
HD	.209	.230	5.31	5.84	
L1		.050		1.27	
L2	.250		6.35		
LC	.100 TP		2.54 TP		
LD	.016	.021	0.41	0.53	2, 6
LL	.500	.750	12.70	19.05	6
LU	.016	.019	0.41	0.48	3, 6
Q		.040		1.02	
r		.007		0.18	
TL	.028	.048	0.71	1.22	8
TW	.036	.046	0.91	1.17	
α	45° TP				
Pin					
1	Emitter				
2	Base				
3	Collector				
4	Case				

NOTES:

1. Dimensions are in inches. Millimeters are given for general information only.
2. Measured in the zone beyond .250 (6.35 mm) from the seating plane.
3. Measured in the zone .050 (1.27 mm) and .250 (6.35 mm) from the seating plane.
4. When measured in a gauging plane .054 +.001, -.000 (1.37 +.3, -.00 mm) before the seating plane of the transistor, maximum diameter leads shall be within .007 (.18 mm) of their true location relative to a maximum width tab. Smaller diameter leads shall fall within the outline of the maximum diameter lead tolerance.
5. The active elements are electrically insulated from the case.
6. All 4 leads.
7. Lead 1 is the source, lead 2 is the drain, lead 3 is the gate, and lead 4 is the case.
8. Symbol TL is measured from HD maximum.
9. In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology.