



PNP Small Signal Silicon Transistor

Qualified per MIL-PRF-19500/511

Qualified Levels:
JAN, JANTX, JANTXV
and JANS

DESCRIPTION

This 2N4261 small signal transistor comes in a hermetically sealed metal TO-72 package and is military qualified for high-reliability applications. It is also available in a low-profile UB surface mount package or with a ceramic lid in the UBC package.

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

FEATURES

- Popular JEDEC registered 2N4261 number
- JAN, JANTX, JANTXV and JANS qualification is available per MIL-PRF-19500/511.
(See [part nomenclature](#) for all available options.)
- RoHS compliant version available

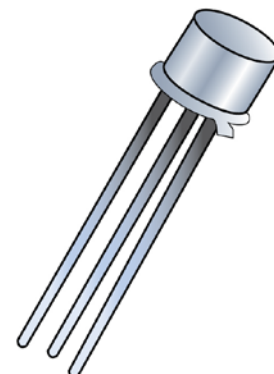
APPLICATIONS / BENEFITS

- Leaded, hermetically sealed TO-72 package
- Lightweight
- Military and other high-reliability applications

MAXIMUM RATINGS @ $T_A = 25^\circ\text{C}$

Parameters/Test Conditions	Symbol	Value	Unit
Junction and Storage Temperature	T_J & T_{STG}	-65 to +200	$^\circ\text{C}$
Thermal Resistance Junction-to-Ambient ⁽¹⁾	$R_{\theta JA}$	0.860	$^\circ\text{C/W}$
Collector – Emitter Voltage	V_{CEO}	-15	V
Collector – Base Voltage	V_{CBO}	-15	V
Emitter – Base Voltage	V_{EBO}	-4.5	V
Total Power Dissipation ⁽¹⁾	P_T	0.2	W
@ $T_A = +25^\circ\text{C}$ ⁽¹⁾			
@ $T_C = +25^\circ\text{C}$ ⁽²⁾			
Collector Current	I_C	-30	mA


NOTES: 1. Derate linearly 1.14 mW/ $^\circ\text{C}$ above $T_A = +25^\circ\text{C}$



TO-72 Package


Also available in:

UB package
(surface mount)

 [2N4261UB](#)

UBC package

(Ceramic Lid surface mount)

 [2N4261UBC](#)

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MECHANICAL and PACKAGING

- CASE: Ni plated kovar, Ni cap
- TERMINALS: Gold over nickel plated kovar leads, solder dipped. RoHS compliant are available without solder dip on commercial grade only.
- MARKING: Manufacturer's ID, date code, part number
- POLARITY: PNP, see case outline on last page
- WEIGHT: Approximately 0.322 grams
- See [Package Dimensions](#) on last page.

PART NOMENCLATURE

JAN
2N4261
Reliability Level

JAN = JAN level
 JANTX = JANTX level
 JANTXV = JANTXV level
 JANS = JANS level
 Blank = Commercial grade

JEDEC type number

(see [Electrical Characteristics](#) table)

SYMBOLS & DEFINITIONS

Symbol	Definition
I_B	Base current: The value of the dc current into the base terminal.
I_C	Collector current: The value of the dc current into the collector terminal.
V_{CB}	Collector-base voltage: The dc voltage between the collector and the base.
V_{CBO}	Collector-base voltage, base open: The voltage between the collector and base terminals when the emitter terminal is open-circuited.
V_{CE}	Collector-emitter voltage: The dc voltage between the collector and the emitter.
V_{CEO}	Collector-emitter voltage, base open: The voltage between the collector and the emitter terminals when the base terminal is open-circuited.
V_{CC}	Collector-supply voltage: The supply voltage applied to a circuit connected to the collector.
V_{EBO}	Emitter-base voltage, collector open: The voltage between the emitter and base terminals with the collector terminal open-circuited.
V_{EB}	Emitter-base voltage: The dc voltage between the emitter and the base

ELECTRICAL CHARACTERISTICS @ 25 °C unless otherwise noted

Parameters / Test Conditions	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage $I_C = -10 \text{ mA}$	$V_{(BR)CEO}$	-15		V
Collector-Base Cutoff Current $V_{CB} = -15 \text{ V}$	I_{CBO}		-10	μA
Emitter-Base Cutoff Current $V_{EB} = -4.5 \text{ V}$	I_{EBO}		-10	μA
Collector-Emitter Cutoff Current $V_{CE} = -10 \text{ V}, V_{BE} = -0.4 \text{ V}$ $V_{CE} = -10 \text{ V}, V_{BE} = -2.0 \text{ V}$	I_{CEX}		-50 -5	nA nA

ON CHARACTERISTICS ⁽¹⁾

Forward-Current Transfer Ratio $I_C = -1.0 \text{ mA}, V_{CE} = -1.0 \text{ V}$ $I_C = -10 \text{ mA}, V_{CE} = -1.0 \text{ V}$ $I_C = -30 \text{ mA}, V_{CE} = -1.0 \text{ V}$	h_{FE}	25 30 20	150	
Collector-Emitter Saturation Voltage $I_C = -1.0 \text{ mA}, I_B = -0.1 \text{ mA}$ $I_C = -10 \text{ mA}, I_B = -1.0 \text{ mA}$	$V_{CE(sat)}$		-0.15 -0.35	V
Base-Emitter Saturation Voltage (Non-Saturated) $V_{CE} = -1.0 \text{ V}, I_C = -1.0 \text{ mA}$ $V_{CE} = -1.0 \text{ V}, I_C = -10 \text{ mA}$	V_{BE}		-0.8 -1.0	V

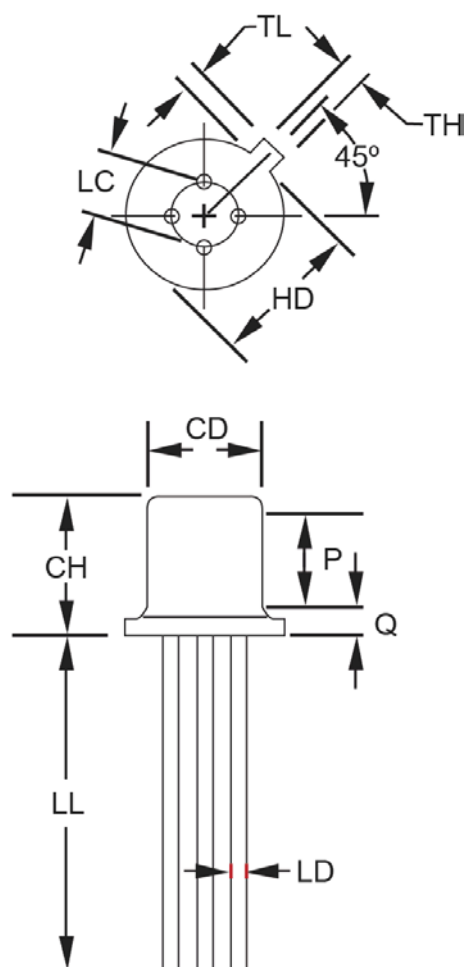
DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min	Max	Unit
Magnitude of Small-Signal Forward Current Transfer Ratio $I_C = -5.0 \text{ mA}, V_{CE} = -4.0 \text{ V}, f = 100 \text{ MHz}$ $I_C = -10 \text{ mA}, V_{CE} = -10 \text{ V}, f = 100 \text{ MHz}$	$ h_{fe} $	15 20		
Output Capacitance $V_{CB} = -4 \text{ V}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{obo}		2.5	pF
Input Capacitance $V_{EB} = -0.5 \text{ V}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{ibo}		2.5	pF

SWITCHING CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min	Max	Unit
Turn-On Time $V_{CC} = -17 \text{ V}; I_C = -10 \text{ mA}$	t_{on}		2.5	ns
Turn-Off Time $V_{CC} = -17 \text{ V}; I_C = -10 \text{ mA}$	t_{off}		3.5	ns

(1) Pulse Test: pulse width = 300 μs , duty cycle $\leq 2.0\%$

PACKAGE DIMENSIONS


Ltr	Dimensions				Notes
	Inch		Millimeters		
	Min	Max	Min	Max	
TL	0.028	0.048	0.071	1.22	
TH	0.036	0.046	0.091	1.17	
HD	0.209	0.230	5.31	5.84	5
CD	0.178	0.195	4.52	4.95	5
LD	0.016	0.021	0.410	0.53	7, 8
LC	0.100 TP		2.54 TP		7, 8
CH	0.170	0.210	4.32	5.33	
LL	0.500	0.750	12.70	19.05	7, 8
P	0.100		2.54		
Q		0.040		1.02	5
1	Emitter				
2	Base				
3	Collector				
4	Case				

NOTES:

1. Dimensions are in inches.
2. Millimeters are given for information only.
3. Beyond r (radius) maximum, TH shall be held for a minimum length of 0.011 (0.28 mm).
4. Dimension TL measured from maximum HD.
5. Body contour optional within zone defined by HD, CD, and Q.
6. Leads at gauge plane 0.054 +0.001 -0.000 inch (1.37 +0.03 -0.00 mm) below seating plane shall be within 0.007 inch (0.18mm) radius of true position (TP) at maximum material condition (MMC) relative to tab at MMC. The device may be measured by direct methods.
7. Dimension LU applies between L₁ and L₂. Dimension LD applies between L₂ and LL minimum. Diameter is uncontrolled in L₁ and beyond LL minimum.
8. All four leads.
9. Dimension r (radius) applies to both inside corners of tab.
10. In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology.
11. Lead 1 = emitter, lead 2 = base, lead 3 = collector, lead 4 = case (electrically connected).

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