

PNP SMALL SIGNAL SILICON TRANSISTOR

Qualified per MIL-PRF-19500/511

DEVICES

2N4261

2N4261UB

2N4261UBC *

* Available for JANS only

LEVELS

JAN
JANTX
JANTXV
JANS

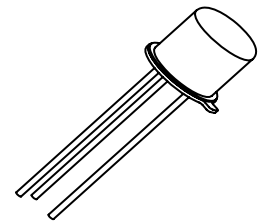
ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

Parameters / Test Conditions	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	15	Vdc
Collector-Base Voltage	V_{CBO}	15	Vdc
Emitter-Base Voltage	V_{EBO}	4.5	Vdc
Collector Current	I_C	30	mAdc
Total Power Dissipation @ $T_A = +25^\circ\text{C}$	P_T	0.2	W
Operating & Storage Junction Temperature Range	T_{op}, T_{stg}	-65 to +200	$^\circ\text{C}$

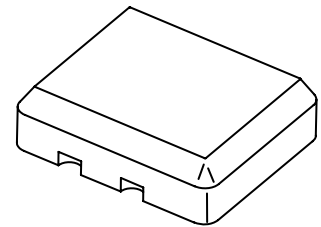
Note: Consult 19500/511 for Thermal Performance Curves.

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

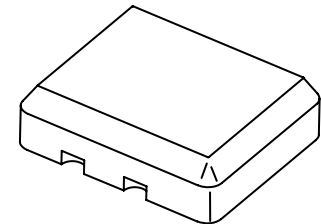
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage $I_C = 10\text{mAdc}$	$V_{(BR)CEO}$	15		Vdc
Collector-Base Cutoff Current $V_{CB} = 15\text{Vdc}$	I_{CBO}		10	μAdc
Emitter-Base Cutoff Current $V_{EB} = 4.5\text{Vdc}$	I_{EBO}		10	μAdc
Collector-Emitter Cutoff Current $V_{CE} = 10\text{Vdc}, V_{BE} = 0.4\text{Vdc}$	I_{CEX1}		50	ηAdc
Collector-Emitter Cutoff Current $V_{CE} = 10\text{Vdc}, V_{BE} = 2.0\text{Vdc}$	I_{CEX2}		5	ηAdc



TO-72
2N4261



3 PIN
2N4261UB



2N4261UBC
 (UBC = Ceramic Lid Version)

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

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽⁴⁾				
Forward-Current Transfer Ratio $I_C = 1.0\text{mA}$, $V_{CE} = 1\text{Vdc}$ $I_C = 10\text{mA}$, $V_{CE} = 1\text{Vdc}$ $I_C = 30\text{mA}$, $V_{CE} = 1\text{Vdc}$	h_{FE}	25 30 20	150	
Collector-Emitter Saturation Voltage $I_C = 1\text{mA}$, $I_B = 0.1\text{mA}$ $I_C = 10\text{mA}$, $I_B = 1.0\text{mA}$	$V_{CE(sat)}$		0.15 0.35	Vdc
Base-Emitter Saturation Voltage (Non-Saturated) $V_{CE} = 1\text{Vdc}$, $I_C = 1\text{mA}$ $V_{CE} = 1\text{Vdc}$, $I_C = 10\text{mA}$	V_{BE}	0.6	0.80 1.0	Vdc

DYNAMIC CHARACTERISTICS

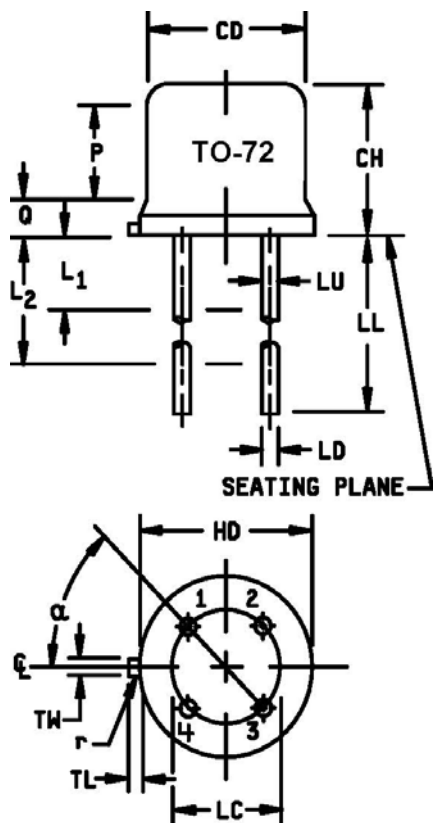
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Magnitude of Small-Signal Forward Current Transfer Ratio $I_C = 10\text{mA}$, $V_{CE} = 10\text{Vdc}$, $f = 100\text{MHz}$	$ h_{fe} $	20		
Output Capacitance $V_{CB} = 4\text{Vdc}$, $I_E = 0$, $100\text{kHz} \leq f \leq 1.0\text{MHz}$	C_{obo}		2.5	pF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

SWITCHING CHARACTERISTICS

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

(4) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

PACKAGE DIMENSIONS

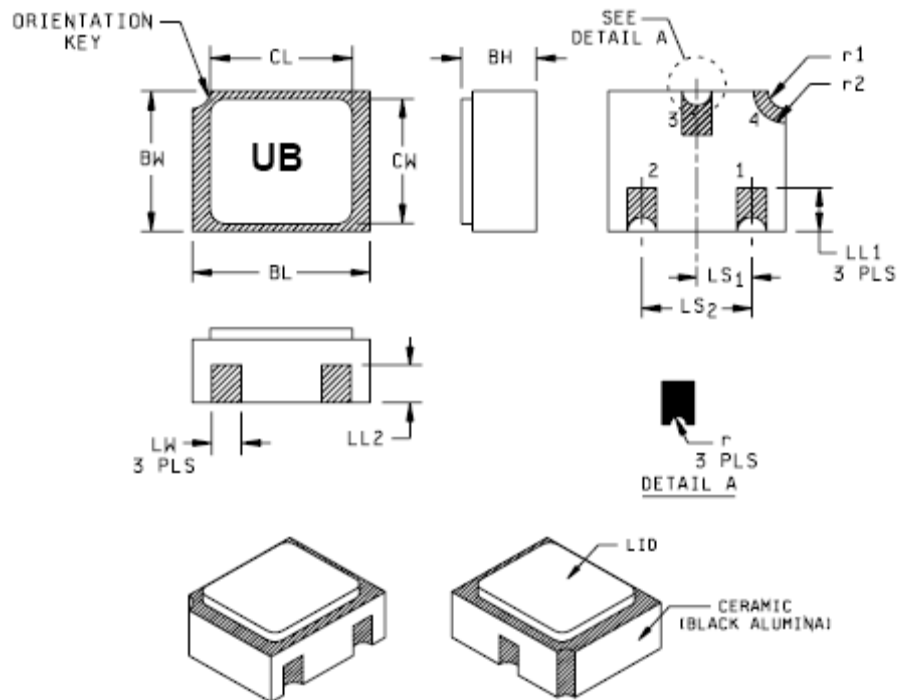


Symbol	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
CD	.178	.195	4.52	4.95	5
CH	.170	.210	4.32	5.33	
HD	.209	.230	5.31	5.84	5
LC	.100 TP		2.54 TP		7, 8
LD	.016	.021	.406	.533	7, 8
LL	.500	.750	12.70	19.05	7, 8
LU	.016	.019	.41	.48	
L1		.050		1.27	
L2	.250		6.35		
P	.100		2.54		
Q		.040		1.02	5
TL	.028	.048	.71	1.22	
TW	.036	.046	.91	1.17	
r		.007		.18	
α	45° TP				

NOTES:

- 1 Dimension are in inches.
- 2 Millimeters are given for general information only.
- 3 Beyond r (radius) maximum, TH shall be held for a minimum length of .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 .054 +.001 -.000 inch (1.37 +0.03 -0.00 mm) below seating plane shall be within .007 inch (0.18mm) radius of true position (TP) at maximum material condition (MMC) relative to tab at MMC.
- 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).

FIGURE 1. Physical dimensions for 2N4261 (TO-72).

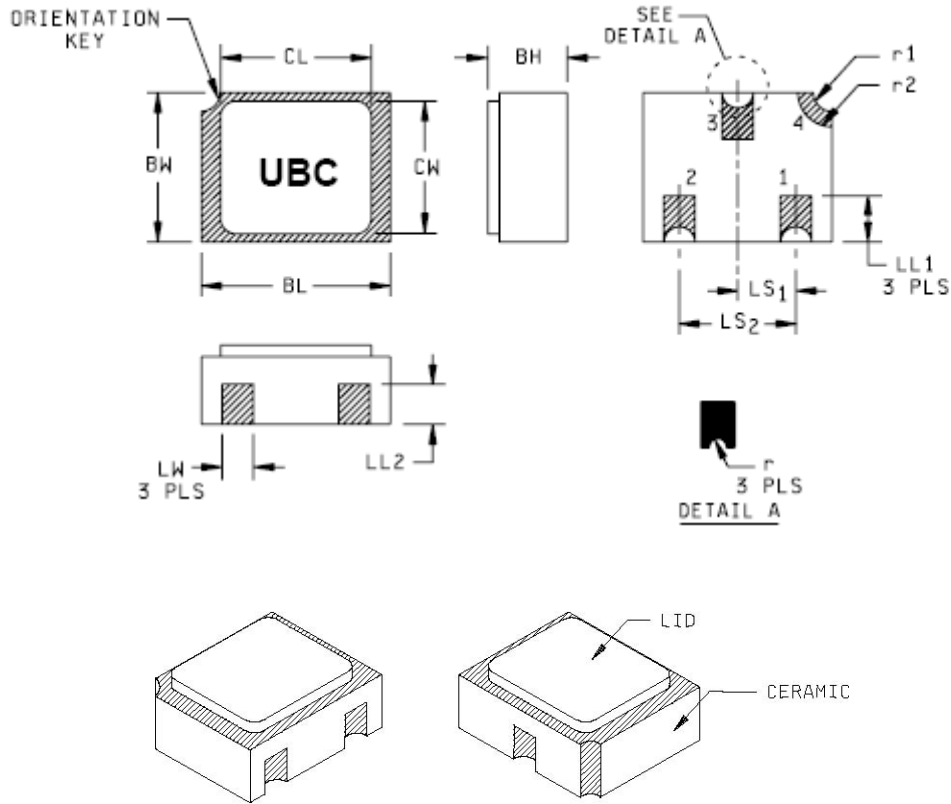


Ltr.	Dimensions				Note	Ltr.	Dimensions				Note
	Inches		Millimeters				Inches		Millimeters		
	Min	Max	Min	Max			Min	Max	Min	Max	
BH	.046	.056	1.17	1.42		LS1	.035	.040	0.89	1.02	
BL	.115	.128	2.92	3.25		LS2	.071	.079	1.80	2.01	
BW	.085	.108	2.16	2.74		LW	.016	.024	0.41	0.61	
CL		.128		3.25		r		.008		0.20	
CW		.108		2.74		r1		.012		0.31	
LL1	.022	.038	0.56	0.96		r2		.022		0.56	
LL2	.017	.035	0.43	0.89							

NOTES:

- 1 Dimensions are in inches.
- 2 Millimeters are given for general information only.
- 3 Pad 1 = Base, Pad 2 = Emitter, Pad 3 = Collector, Pad 4 = Shielding connected to the lid.
- 4 In accordance with ASME Y14.5M, diameters are equivalent to ϕx symbology.

FIGURE 2. Physical dimensions for 2N4261UB, surface mount.



Ltr.	Dimensions				Note	Ltr.	Dimensions				Note
	Inches		Millimeters				Inches		Millimeters		
	Min	Max	Min	Max			Min	Max	Min	Max	
BH	.046	.071	1.17	1.80		LS ₁	.036	.040	0.91	1.02	
BL	.115	.128	2.29	3.25		LS ₂	.071	.079	1.81	2.01	
BW	.085	.108	2.16	2.74		LW	.016	.024	0.41	0.61	
CL		.128		3.25		r		.008		.203	
CW		.108		2.74		r ₁		.012		.305	
LL ₁	.022	.038	0.56	0.96		r ₂		.022		.559	
LL ₂	.017	.035	0.43	0.89							

NOTES:

- 1 Dimensions are in inches.
- 2 Millimeters are given for general information only.
- 3 Hatched areas on package denote metallized areas
- 4 Pad 1 = Base, Pad 2 = Emitter, Pad 3 = Collector, Pad 4 = connected to the lid braze ring.
- 5 In accordance with ASME Y14.5M, diameters are equivalent to ϕx symbology.

* **FIGURE 3.** Physical dimensions, surface mount (UBC version, ceramic lid).