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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





PNP Small Signal Silicon Transistor

Qualified per MIL-PRF-19500/511

Qualified Levels:
JAN, JANTX, JANTXV
and JANS

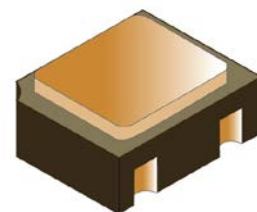
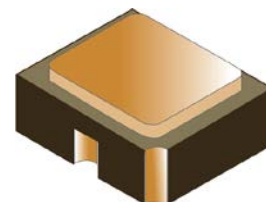
DESCRIPTION

This 2N4261UB small signal transistor features ceramic bodied construction with a metal lid for military grade products per MIL-PRF-19500/511. It is also available with a ceramic lid in the UBC package or in a hermetically sealed metal TO-72 package.

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

FEATURES

- Surface mount equivalent of 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



UB Package

APPLICATIONS / BENEFITS

- Low-profile ceramic bodied surface mount package (see package illustration)
- Lightweight
- Military and other high-reliability applications

Also available in:

UBC package

(Ceramic Lid surface mount)



2N4261UBC

TO-72 package

(leaded)



2N4261

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⁾ @ $T_A = +25^{\circ}\text{C}$ ⁽¹⁾ @ $T_C = +25^{\circ}\text{C}$ ⁽²⁾	P_T	0.2	W
Collector Current	I_C	-30	mA

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

MSC – Lawrence

6 Lake Street,
Lawrence, MA 01841
Tel: 1-800-446-1158 or
(978) 620-2600
Fax: (978) 689-0803

MSC – Ireland

Gort Road Business Park,
Ennis, Co. Clare, Ireland
Tel: +353 (0) 65 6840044
Fax: +353 (0) 65 6822298

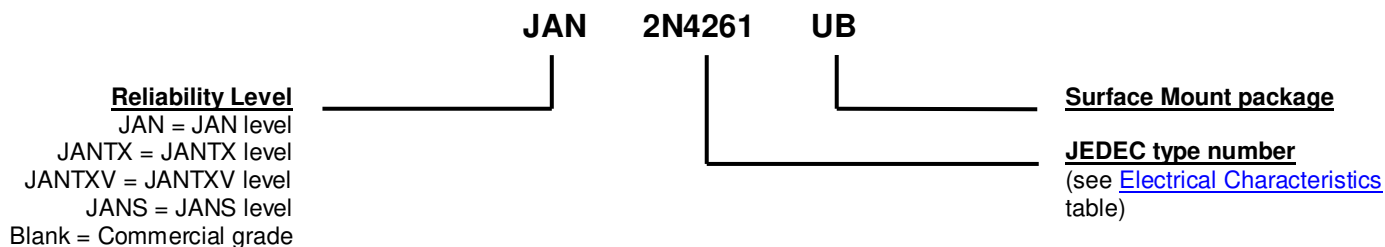
Website:

www.microsemi.com

MECHANICAL and PACKAGING

- CASE: Ceramic
- TERMINALS: Gold plating over nickel under plate
- MARKING: Part number, date code, manufacturer's ID
- TAPE & REEL option: Standard per EIA-418D. Consult factory for quantities.
- WEIGHT: Less than 0.04 grams
- See [Package Dimensions](#) on last page.

PART NOMENCLATURE



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

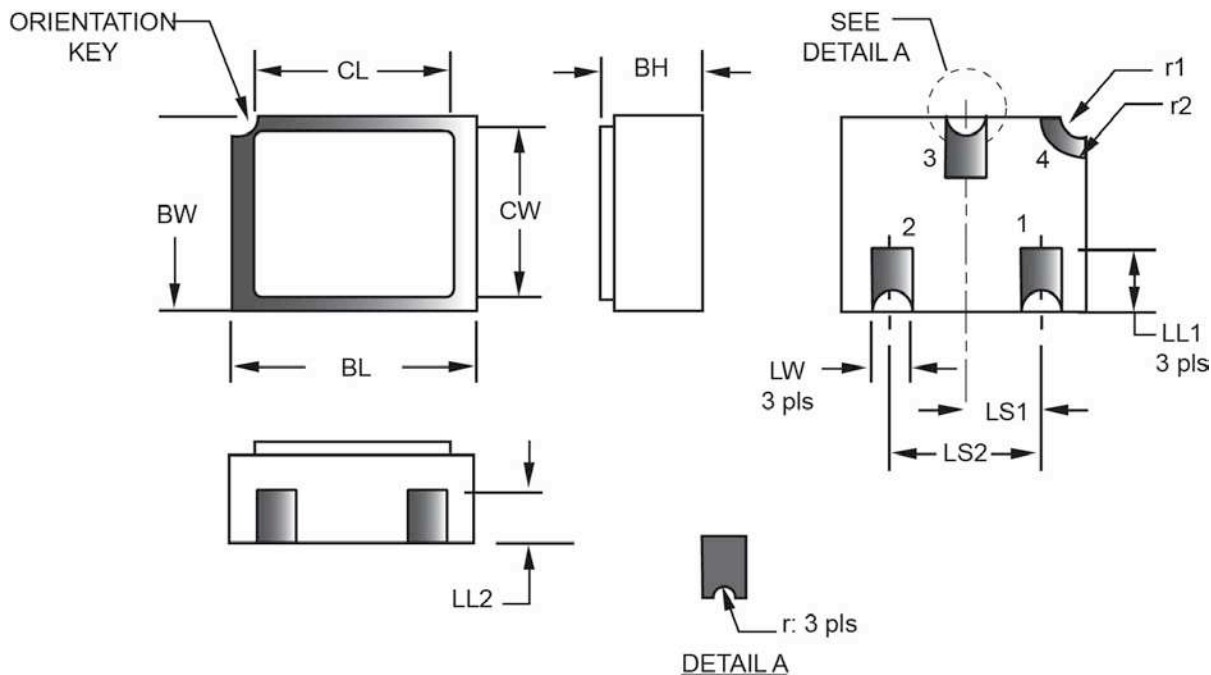
DYNAMIC CHARACTERISTICS

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


Symbol	Dimensions				Note	Symbol	Dimensions				Note
	inch		millimeters				inch		millimeters		
	Min	Max	Min	Max			Min	Max	Min	Max	
BH	0.046	.056	1.17	1.42		LS1	0.035	0.039	0.89	0.99	
BL	0.115	0.128	2.92	3.25		LS2	0.071	0.079	1.80	2.01	
BW	0.085	0.108	2.16	2.74		LW	0.016	0.024	0.41	0.61	
CL	-	0.128	-	3.25		r	-	0.008	-	0.20	
CW	-	0.108	-	2.74		r1	-	0.012	-	0.31	
LL1	0.022	0.038	0.56	0.97		r2	-	0.022	-	.056	
LL2	0.017	0.035	0.43	0.89							

NOTES:

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