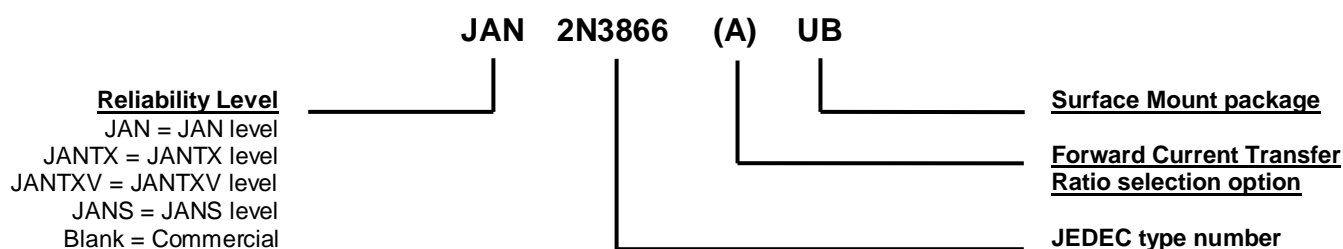


MECHANICAL and PACKAGING

- 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_{BE}	Base-emitter voltage: The dc voltage between the base and the emitter.
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.

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

Characteristics	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage $I_C = 5\text{ mA}$	$V_{(BR)CEO}$	30		V
Collector-Base Breakdown Voltage $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	60		V
Emitter-Base Breakdown Voltage $I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	3.5		V
Collector-Emitter Cutoff Current $V_{CE} = 28\text{ V}$	I_{CEO}		20	μA
Collector-Emitter Cutoff Current $V_{CE} = 55\text{ V}$	I_{CES1}		100	μA

ON CHARACTERISTICS ⁽¹⁾

Forward-Current Transfer Ratio $I_C = 50\text{ mA}$, $V_{CE} = 5.0\text{ V}$	2N3866UB	h_{FE}	15	200	
	2N3866AUB		25	200	
$I_C = 360\text{ mA}$, $V_{CE} = 5.0\text{ V}$	2N3866UB		5		
	2N3866AUB		8		
Collector-Emitter Saturation Voltage $I_C = 100\text{ mA}$, $I_B = 10\text{ mA}$		$V_{CE(sat)}$		1.0	V
Collector-Emitter Cutoff Current – High Temp Operation $V_{CE} = 55\text{ V}$, $T_A = +150^\circ\text{C}$		I_{CES2}		2.0	mA
Forward-Current Transfer Ratio – Low Temperature Operation $V_{CE} = 5.0\text{ V}$, $I_C = 50\text{ mA}$, $T_A = -55^\circ\text{C}$	2N3866UB 2N3866AUB	h_{FE3}	7 12		

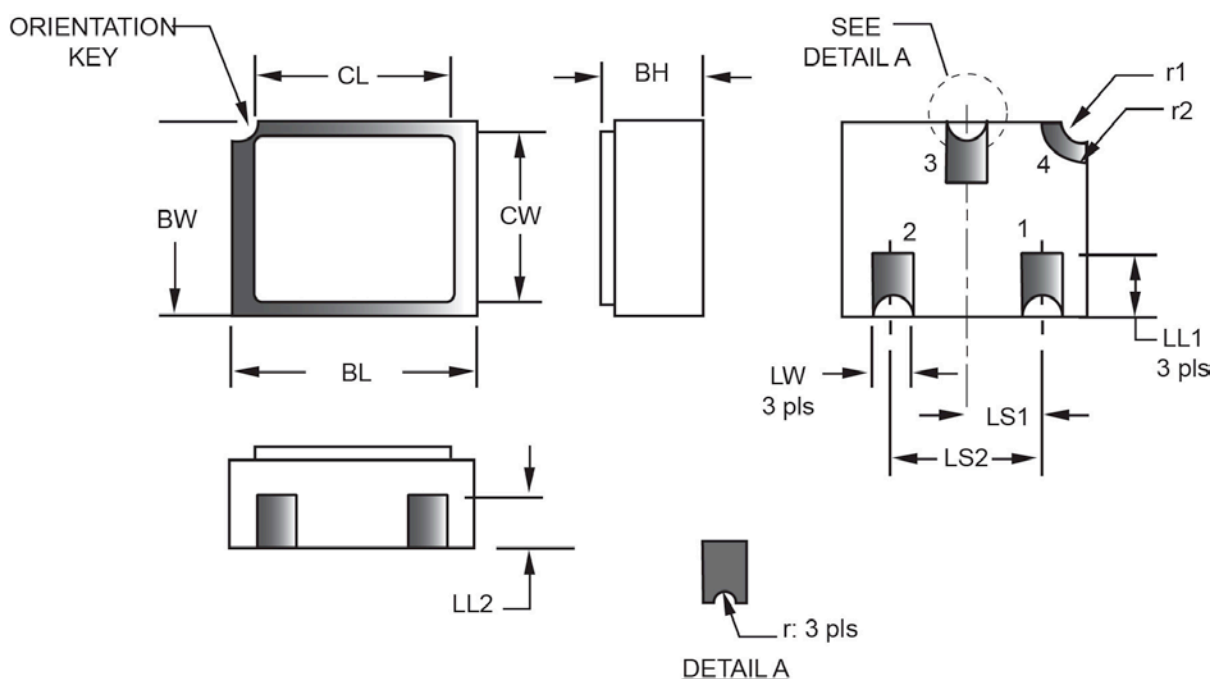
DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 50\text{ mA}$, $V_{CE} = 15\text{ V}$, $f = 200\text{ MHz}$	2N3866UB 2N3866AUB	$ h_{FE} $	2.5 4.0	8.0 7.5	
Output Capacitance $V_{CB} = 28\text{ V}$, $I_E = 0$, $100\text{ kHz} \leq f \leq 1.0\text{ MHz}$		C_{obo}		3.5	pF

POWER OUTPUT CHARACTERISTICS

Power Output $V_{CC} = 28\text{ V}$; $P_{in} = 0.15\text{ W}$; $f = 400\text{ MHz}$ * $V_{CC} = 28\text{ V}$; $P_{in} = 0.075\text{ W}$; $f = 400\text{ MHz}$ * * See Figure 4 on MIL-PRF-19500/398	P_{1out} P_{2out}	1.0 0.5	2.0	W
Collector Efficiency $V_{CC} = 28\text{ V}$; $P_{in} = 0.15\text{ W}$; $f = 400\text{ MHz}$ $V_{CC} = 28\text{ V}$; $P_{in} = 0.075\text{ W}$; $f = 400\text{ MHz}$	n1 n2	45 40		%
Clamp Inductive Collector-Emitter Breakdown Voltage $V_{BE} = -1.5\text{ V}$, $I_C = 40\text{ mA}$	$V_{(BR)CEX}$	55		Vdc

(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	0.056	1.17	1.42		LS1	0.035	0.040	0.89	1.02	
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	0.96		r2	-	0.022	-	0.56	
LL2	0.017	0.035	0.43	0.89							

NOTES:

1. Dimensions are in inches. Millimeters are given for information only.
2. Hatched areas on package denote metallized areas.
3. Lid material: Kovar.
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.