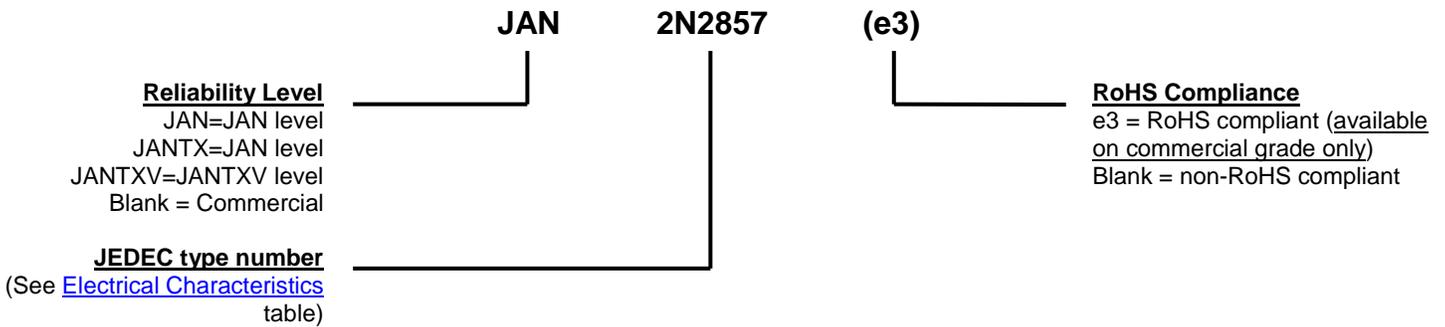


MECHANICAL and PACKAGING

- CASE: Ni plated kovar, Ni cap.
- TERMINALS: Au over Ni plated kovar leads, solder dipped.
- 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_C	Collector current (dc).
I_B	Base current (dc).
T_A	Ambient or free air temperature.
T_C	Case temperature.
V_{CB}	Collector to base voltage (dc).
V_{EB}	Emitter to base voltage (dc).

ELECTRICAL CHARACTERISTICS @ $T_C = +25^\circ\text{C}$
OFF CHARACTERISTICS

Test Conditions	Symbol	Value			Unit
		Min.	Typ.	Max.	
Collector-Emitter Breakdown Voltage ($I_C = 3.0\text{ mA}$, Bias condition D)	$V_{(BR)CEO}$	15	-	-	V
Collector to Emitter Cutoff Current ($V_{CE} = 16\text{ V}$, Bias condition C)	I_{CES}	-	-	100	nA
Emitter to Base Cutoff Current ($V_{EB} = 3\text{ V}$, Bias condition D)	I_{EBO}	-	-	10	μA
Collector to Base Cutoff Current ($V_{CB} = 15\text{ V}$, Bias condition D)	I_{CBO}	-	-	10	nA

ON CHARACTERISTICS

Test Conditions	Symbol	Value			Unit
		Min.	Typ.	Max.	
Forward Current transfer ratio ($I_C = 3.0\text{ mA}$, $V_{CE} = 1.0\text{ V}$)	h_{FE}	30	-	150	
Collector-Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$)	$V_{CE(sat)}$		-	0.4	V
Base-Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$)	$V_{BE(sat)}$		-	1.0	V

DYNAMIC CHARACTERISTICS

Test Conditions	Symbol	Value			Unit
		Min.	Typ.	Max.	
Magnitude of common emitter small signal short circuit forward current transfer ratio ($V_{CE} = 6\text{ V}$, $I_C = 5\text{ mA}$, $f = 100\text{ MHz}$)	$ h_{fe} $	10	-	21	
Collector-base time constant ($I_E = 2.0\text{ mA}$, $V_{CB} = 6.0\text{ V}$, $f = 31.9\text{ MHz}$)	$r_b'C_c$	4	-	15	pF
Collector to Base – feedback capacitance ($I_E = 0\text{ mA}$, $V_{CB} = 10\text{ V}$, $100\text{ kHz} \leq f \leq 1\text{ MHz}$)	C_{cb}			1.0	pF
Noise Figure (50 Ohms) ($I_C = 1.5\text{ mA}$, $V_{CE} = 6\text{ V}$, $f = 450\text{ MHz}$, $R_g = 50\ \Omega$)	F		4.5		dB
Small Signal Power Gain (common emitter) ($I_E = 1.5\text{ mA}$, $V_{CE} = 6\text{ V}$, $f = 450\text{ MHz}$)	G_{pe}	12.5		21	dB

GRAPHS

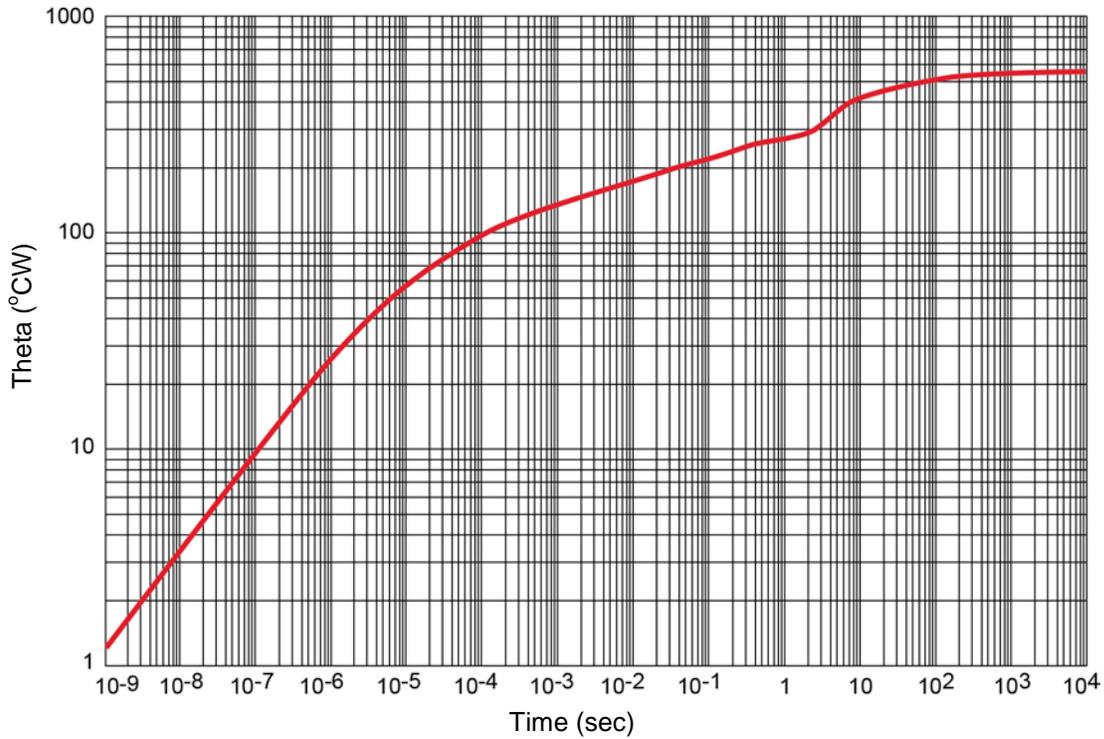


FIGURE 1
Maximum Thermal Impedance ($R_{\theta JA}$)

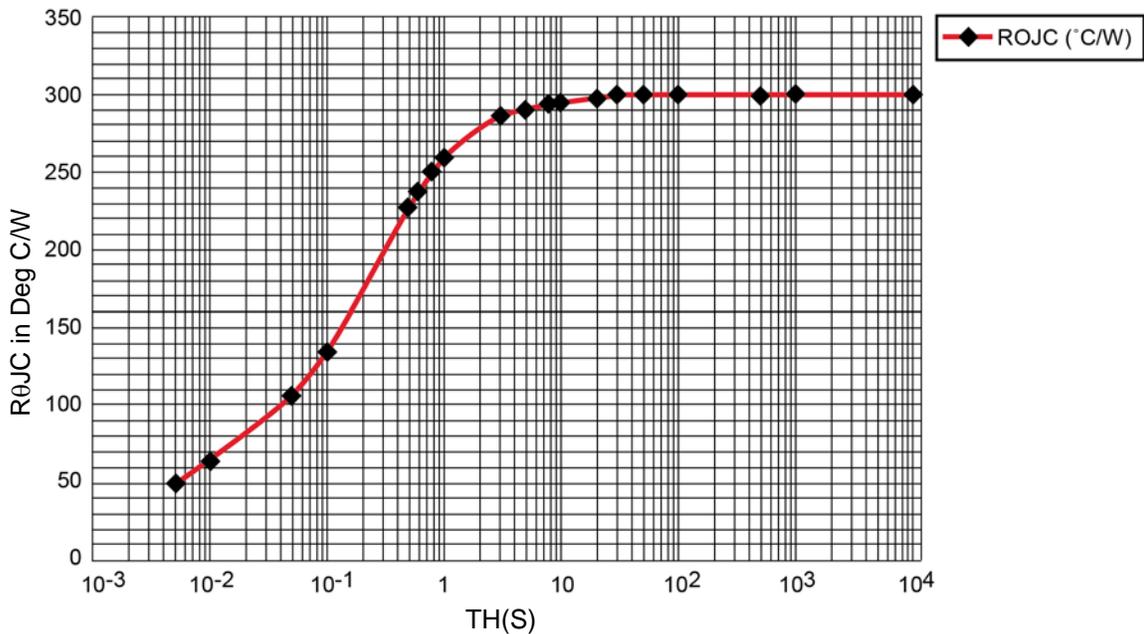
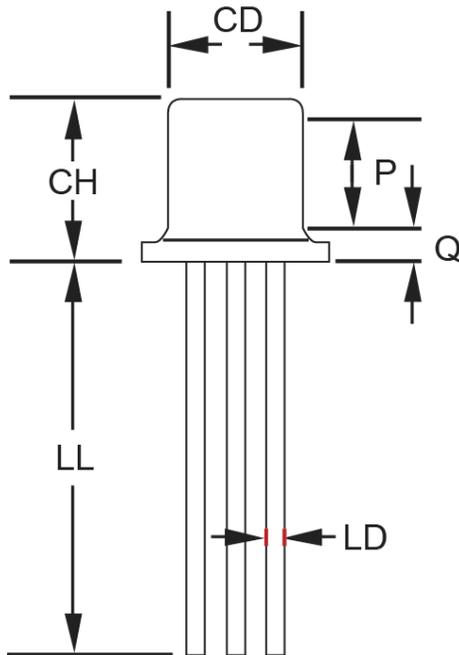
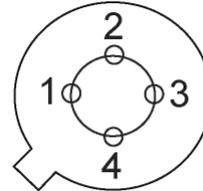
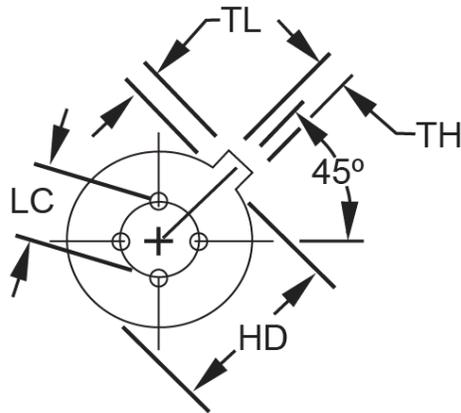


FIGURE 2
Thermal impedance graph ($R_{\theta JC}$)

PACKAGE DIMENSIONS


Ltr	Dimensions				Notes
	Inch		Millimeters		
	Min	Max	Min	Max	
TL	.028	.048	.071	1.22	
TH	.036	.046	.091	1.17	
HD	.209	.230	5.31	5.84	5
CD	.178	.195	4.52	4.95	5
LD	.016	.021	.410	.533	7, 8
LC	.100 TP		2.54 TP		7, 8
CH	.170	.210	4.32	5.33	
LL	.500	.750	12.70	19.05	7, 8
P	.100		2.54		
Q		.040		1.02	5
1	Emitter				
2	Base				
3	Collector				
4	Case				

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. The device may be measured by direct methods or by the gauge and gauging procedure shown in figure 2.
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 Φ x symbology.
11. Lead 1 = emitter, lead 2 = base, lead 3 = collector, lead 4 = case (electrically connected).