



NPN Silicon Medium Power Transistor

Qualified per MIL-PRF-19500/180

Qualified Levels:
JAN and JANTX

DESCRIPTION

This family of high-frequency, epitaxial planar transistors feature low saturation voltage.

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

FEATURES

- JEDEC registered 2N1483 through 2N1486 series.
- JAN and JANTX qualifications are available per MIL-PRF-19500/180.
- RoHS compliant versions available (commercial grade only).



TO-8 Package

APPLICATIONS / BENEFITS

- General purpose transistors for medium power applications requiring high frequency switching and low package profile.
- Military and other high-reliability applications.

MAXIMUM RATINGS

Parameters / Test Conditions	Symbol	2N1483 2N1485	2N1484 2N1486	Unit
Collector-Emitter Voltage	V_{CEO}	40	55	V
Collector-Base Voltage	V_{CBO}	60	100	V
Emitter-Base Voltage	V_{EBO}	12		V
Collector Current	I_C	3.0		A
Total Power Dissipation @ $T_A = +25\text{ }^{\circ}\text{C}$ ⁽¹⁾ @ $T_C = +25\text{ }^{\circ}\text{C}$ ⁽²⁾	P_T	1.75 25		W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^{\circ}\text{C}$

Notes: 1. Derate linearly 0.010 mW/ $^{\circ}\text{C}$ for $T_A > +25\text{ }^{\circ}\text{C}$.
2. Derate linearly 0.143 mW/ $^{\circ}\text{C}$ for $T_C > +25\text{ }^{\circ}\text{C}$.

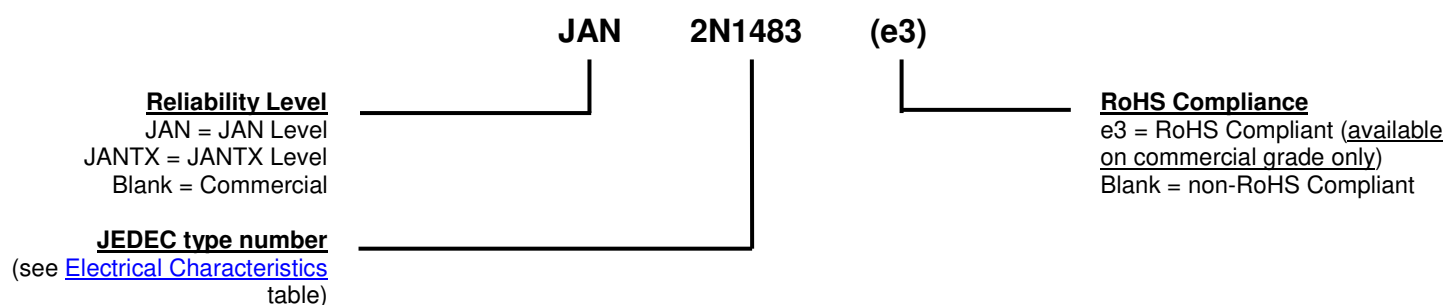
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MECHANICAL and PACKAGING

- CASE: Hermetically sealed, kovar base, nickel cap
- TERMINALS: Alloy 52 with nickel plating and hot solder dip (Sn63/Pb37) or matte-tin plating for RoHS compliance (available on commercial grade only).
- MARKING: Part number, date code, manufacturer's ID
- POLARITY: See [Package Dimensions](#) on last page.

PART NOMENCLATURE

SYMBOLS & DEFINITIONS

Symbol	Definition
C_{obo}	Common-base open-circuit output capacitance.
I_{CEO}	Collector cutoff current, base open.
I_{CEX}	Collector cutoff current, circuit between base and emitter.
I_{EBO}	Emitter cutoff current, collector open.
h_{FE}	Common-emitter static forward current transfer ratio.
V_{CEO}	Collector-emitter voltage, base open.
V_{CBO}	Collector-emitter voltage, emitter open.
V_{EBO}	Emitter-base voltage, collector open.

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

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Collector-Emitter Breakdown Current $I_C = 100\text{ mA}$ 2N1483, 2N1485 2N1484, 2N1486	$V_{(BR)CEO}$	40 55		V
Collector-Emitter Cutoff Current $V_{BE} = 1.5\text{ V}$, $I_C = 0.25\text{ mA}$ 2N1483, 2N1485 2N1484, 2N1486	I_{CEX}	60 100		μA
Collector-Base Cutoff Current $V_{CB} = 30\text{ V}$ $V_{CB} = 50\text{ V}$ 2N1483, 2N1485 2N1484, 2N1486	I_{CEO}		15.0 15.0	μA
Emitter-Base Cutoff Current $V_{EB} = 12.0\text{ V}$	I_{EBO}		15	μA

ON CHARACTERISTICS ⁽¹⁾

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Forward-Current Transfer Ratio $I_C = 750\text{ mA}$, $V_{CE} = 4.0\text{ V}$ 2N1483, 2N1484 2N1485, 2N1486	h_{FE}	20 35	60 100	
Collector-Emitter Saturation Voltage $I_C = 750\text{ A}$, $I_B = 75\text{ mA}$ $I_C = 750\text{ A}$, $I_B = 40\text{ mA}$ 2N1483, 2N1484 2N1485, 2N1486	$V_{CE(sat)}$		1.20 0.75	V
Base-Emitter Voltage $I_C = 750\text{ mA}$, $V_{CE} = 4.0\text{ V}$	V_{BE}		2.0	V

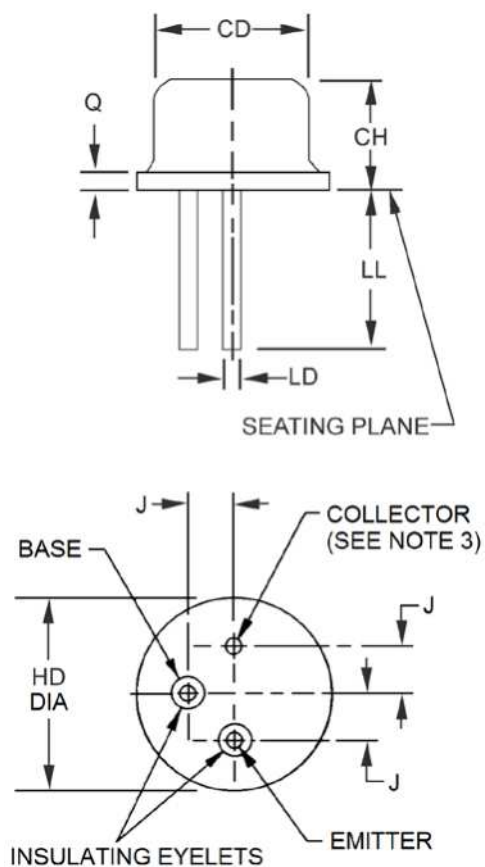
DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Forward Current Transfer Ratio $I_C = 5.0\text{ mA}$, $V_{CB} = 28\text{ V}$	f_{htb}	600		kHz
Output Capacitance $V_{CB} = 10\text{ V}$, $I_E = 0$, $100\text{ kHz} \leq f \leq 1.0\text{ MHz}$	C_{obo}		400	pF

SWITCHING CHARACTERISTICS

Parameters / Test Conditions (for all symbols)	Symbol	Min.	Max.	Unit
Turn-On Time $V_{CC} = 12\text{ V}$, $R_C = 15.9\ \Omega$, $I_{B0} = I_{B2} = 35\text{ mA}$, $R_{B1} = 65\text{ mA}$	$t_{on} + t_{off}$		25	μs

NOTES: (1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

PACKAGE DIMENSIONS


Symbol	Dimensions				Note
	Inch		Millimeters		
	Min	Max	Min	Max	
CD	0.444	0.524	11.28	13.31	
CH	0.270	0.330	6.86	8.38	
HD	0.550	0.650	13.97	16.51	
J	0.136	0.146	3.45	3.71	
LD	0.027	0.033	0.69	0.84	3, 5
LL	0.360	0.440	9.14	11.18	5
Q	-	0.115	-	2.92	

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. Measured in the zone beyond 0.050 (1.27 mm) from seating plane.
4. The collector shall be internally connected to the case.
5. All three leads.