



## NPN Silicon Medium Power Transistor

*Qualified per MIL-PRF-19500/180*

Qualified Levels:  
JAN and JANTX

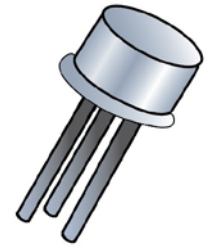
### DESCRIPTION

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	PT	1.75		W
	@ $T_A = +25\text{ }^\circ\text{C}$ <sup>(1)</sup> @ $T_C = +25\text{ }^\circ\text{C}$ <sup>(2)</sup>	25		
Operating & Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200		°C

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

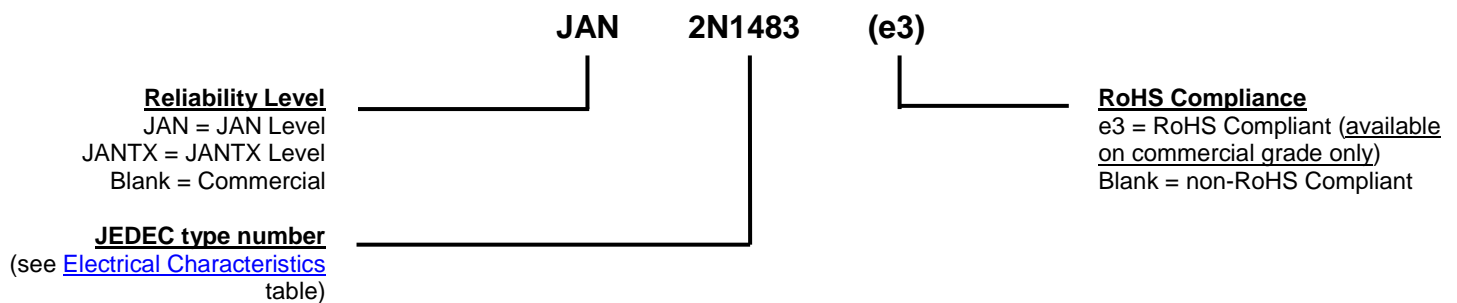
**MSC – Lawrence**  
6 Lake Street,  
Lawrence, MA 01841  
Tel: 1-800-446-1158 or  
(978) 620-2600  
Fax: (978) 689-0803

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

**Website:**  
[www.microsemi.com](http://www.microsemi.com)

**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 @  $T_A = +25\text{ }^\circ\text{C}$ , 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		$\mu\text{A}$
Collector-Base Cutoff Current $V_{CB} = 30\text{ V}$ $V_{CB} = 50\text{ V}$ 2N1483, 2N1485 2N1484, 2N1486	$I_{CEO}$		15.0 15.0	$\mu\text{A}$
Emitter-Base Cutoff Current $V_{EB} = 12.0\text{ V}$	$I_{EBO}$		15	$\mu\text{A}$

**ON CHARACTERISTICS <sup>(1)</sup>**

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 $I_C = 750\text{ mA}$ , $I_B = 75\text{ mA}$ $I_C = 750\text{ mA}$ , $I_B = 40\text{ mA}$ 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

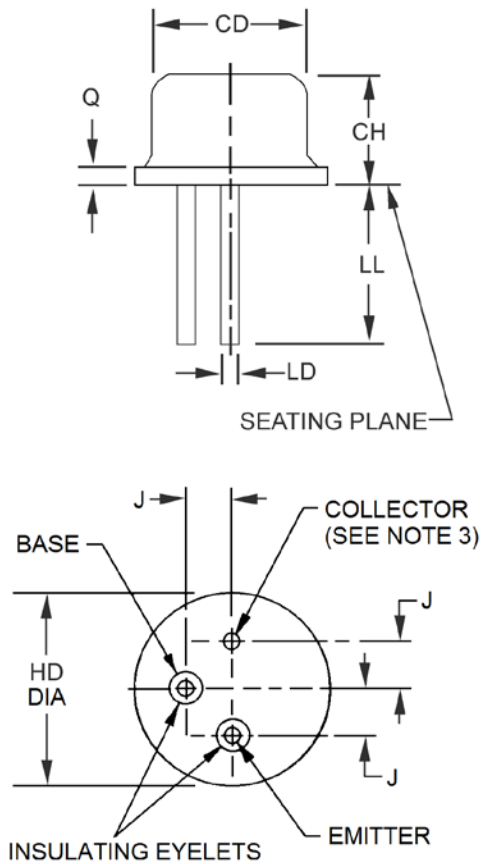
**DYNAMIC CHARACTERISTICS**

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	$\mu\text{s}$

**NOTES:** (1) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

**PACKAGE DIMENSIONS**


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