2N1483, 2N1484, 2N1485,

NPN Medium Power Silicon Transistor

Rev. V2

Features

- Available in JAN, JANTX and JANTXV per MIL-PRF-19500/180
- TO-8 Package
- Ideal For Medium Power Applications That Require High Frequency Switching in a Low Profile Package

Electrical Characteristics T_C = +25°C unless otherwise specified)

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Collector - Emitter Breakdown Voltage	I_C = 100 mA dc 2N1483, 2N1485 2N1484, 2N1486	$V_{(BR)CEO}$	V dc	40 55	—
Collector - Emitter Breakdown Voltage	V_{EB} = 1.5 V dc, I_C = 0.25 mA dc 2N1483, 2N1485 2N1484, 2N1486	$V_{(BR)CEX}$	V dc	—	60 100
Collector - Base Breakdown Voltage	I_C = 100 µA dc 2N1483, 2N1485 2N1484, 2N1486	$V_{(BR)CBO}$	V dc	—	60 100
Emitter - Base Cutoff Current	V_{EB} = 12 V dc	I_{EBO}	µA dc	—	15
Collector - Emitter Cutoff Current	V_{EB} = 1.5 V dc V_{CB} = 60 V dc, 2N1483, 2N1485 V_{CB} = 100 V dc, 2N1484, 2N1486	I_{CEX}	mA dc		.25 .25
Collector - Base Cutoff Current	V_{CB} = 30 V dc, 2N1483, 2N1485 V_{CB} = 50 V dc, 2N1484, 2N1486	I_{CBO1}	µA dc		15 15
Forward Current Transfer Ratio	V_{CE} = 4.0 Vdc, I_C = 750 mA dc 2N1483, 2N1484 2N1485, 2N1486	h_{FE2}	-	20 35	60 100
Base - Emitter Voltage (non-saturated)	V_{CE} = 4.0V dc, I_C = 750 mA dc	V_{BE}	V dc		2.0
Collector - Emitter Saturation Voltage	Ic = 750 mA dc I_B = 75 mA dc 2N1483, 2N1484 I_B = 40 mA dc 2N1485, 2N1486	$V_{CE(SAT)}$	V dc	—	1.20 0.75

Electrical Characteristics (T_C = +25°C unless otherwise specified)

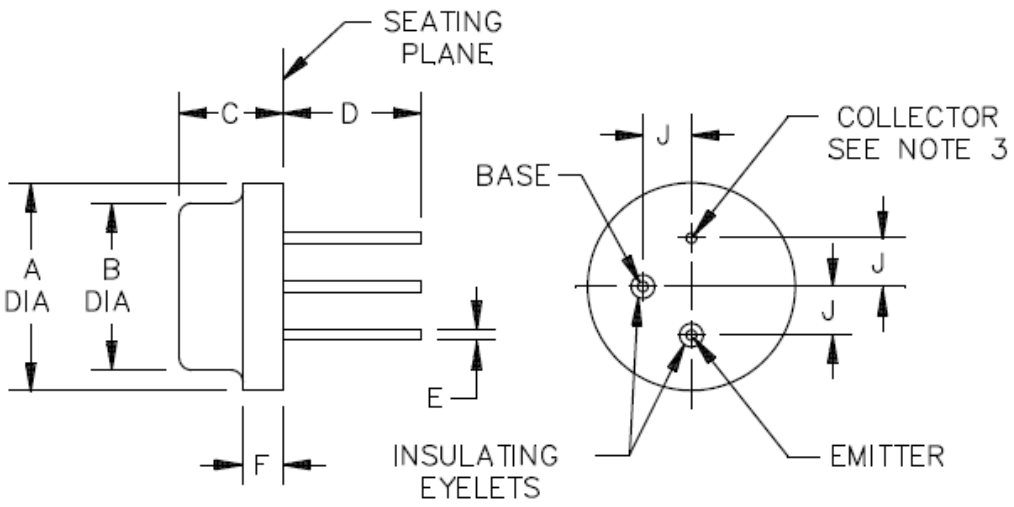
Parameter	Test Conditions	Symbol	Units	Min.	Max.
Collector - Base Cutoff Current	V_{CB} = 60 V dc, 2N1483, 2N1485 V_{CB} = 100 V dc, 2N1484, 2N1486	I_{CBO3}	µA dc	—	100 100
Collector - Base Cutoff Current	T_A = +175°C V_{CB} = 30 V dc, 2N1483, 2N1485 V_{CB} = 50 V dc, 2N1484, 2N1486	I_{CBO2}	mA		1.0 1.0
Forward - Current Transfer Ratio	T_A = -55°C V_{CE} = 4.0 V dc, I_C = 750 mA dc 2N1483, 2N1484 2N1485, 2N1486	h_{FE2}	-	10 17	
Dynamic Characteristics					
Small Signal, Short Circuit, Forward-Current Transfer Ratio Cutoff Frequency	V_{CB} = 28 V dc, I_C = 5.0 mA dc	f_{hfb}	kHz	600	
Open Circuit Output Capacitance	V_{CB} = 10 V dc, I_E = 0, 100 kHz ≤ f ≤ 1 MHz	C_{obo}	pF	—	400
Switching Characteristics					
Pulse Response	V_{CC} = +12V dc, R_C = 15.9 Ω, I_{B0} = I_{B2} = 35 mA dc; I_{B1} = 65 mA dc	t_{on} + t_{off}	µs	—	25

Absolute Maximum Ratings (T_A = +25°C unless otherwise specified)

Ratings	Symbol	2N1483 2N1485	2N1484 2N1486
Collector - Emitter Voltage	V_{CEO}	40 V dc	55 V dc
Collector - Base Voltage	V_{CBO}	60 V dc	100 V dc
Emitter - Base Voltage	V_{EBO}	12 V dc	
Collector Current	I_C	3.0 A dc	
Total Power Dissipation @ T_A = 25°C (1) @ T_C = 25°C (2)	P_T	1.75 W 25 W	
Operating & Storage Temperature Range	T_J, T_{STG}	-65°C to +200°C	

(1) Derate linearly 0.010 W/°C for T_A > +25°C
(2) Derate linearly 0.143 W/°C for T_C > +25°C

Outline Drawing (TO-8)

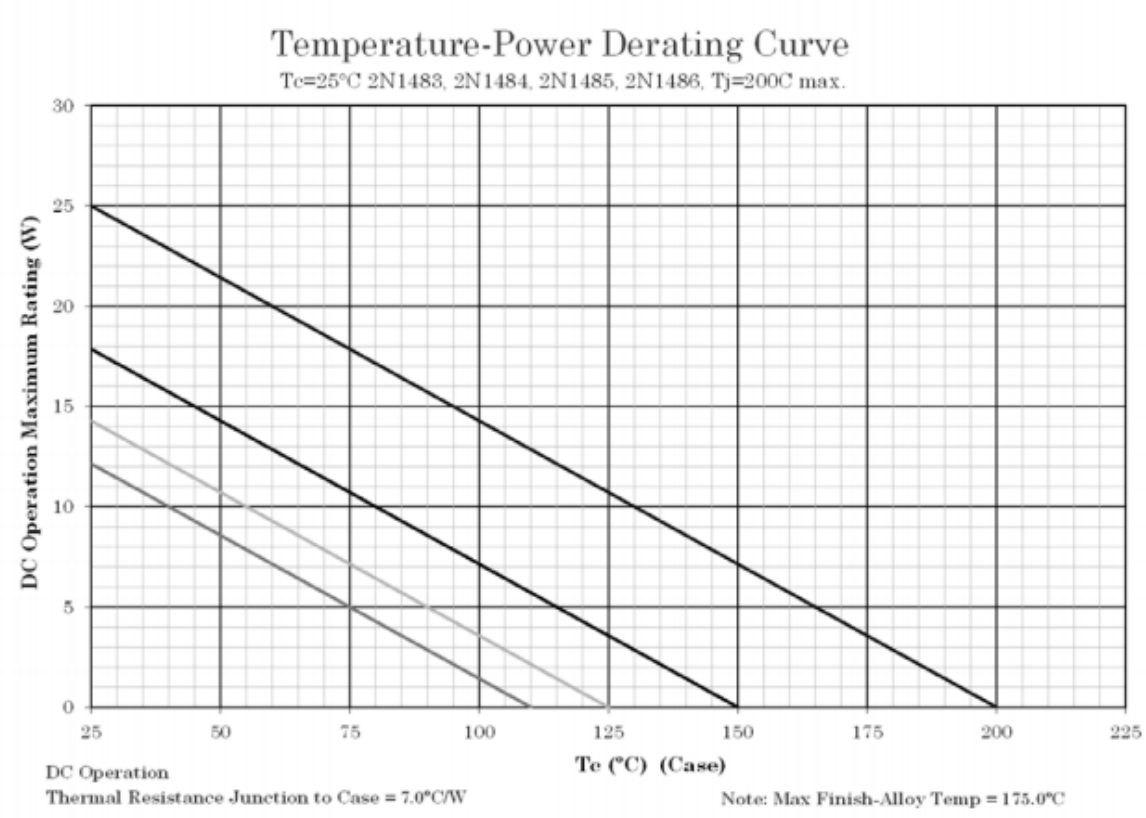


LTR	Dimensions				Notes	LTR	Dimensions				Notes
	Inches		Millimeters				Inches		Millimeters		
	Min	Max	Min	Max			Min	Max	Min	Max	
A	.550	.650	13.97	16.51		E	.027	.033	0.69	0.84	3, 4
B	.444	.524	11.28	13.31		F		.115		2.92	
C	.270	.330	6.86	8.38		J	.136	.146	3.45	3.71	
D	.360	.440	9.14	11.18	3						

NOTES:
1. Dimensions are in inches. Millimeters are given for general information only.
2. The collector shall be internally connected to the case.
3. All three leads.
4. Measured in the zone beyond .050 (1.27 mm) front the seating plane.

FIGURE 1. Dimensions and configuration of TO-8 package.

Temperature Derating Curve



NOTES:

1. This is the true inverse of the worst case thermal resistance value. All devices are capable of operating at less than or equal to T_J specified on this curve. Any parallel line to this curve will intersect the appropriate power for the desired maximum T_J allowed.
2. Derate design curve constrained by the maximum junction temperature ($T_J \leq +200°C$) and power rating specified. (See 1.3 herein.)
3. Derate design curve chosen at $T_J \leq +150°C$, where the maximum temperature of electrical test is performed.
4. Derate design curves chosen at $T_J \leq +125°C$, and +110°C to show power rating where most users want to limit T_J in their application.

FIGURE 2. Temperature-power derating graph.