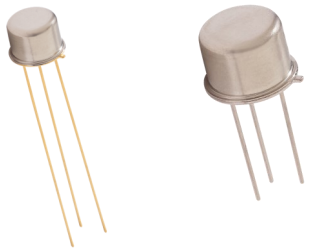
2N1479, 2N1480, 2N1481, 2N1482
2N1479S, 2N1480S, 2N1481S,

NPN Medium Power Silicon Transistor

Rev. V3

Features

- Available in JAN Quality Level per MIL-PRF-19500/207
- TO-205AA (TO-5) and TO-205AD (TO-39) Packages
- “S” Suffix Denotes TO-205AD (TO-39) Package Style
- General Purpose Transistors for Medium Power Applications Requiring High Frequency Switching



Electrical Characteristics (25°C unless otherwise specified)

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Collector - Emitter Breakdown Voltage	I_E = 50 mA dc 2N1479, 2N1481 2N1480, 2N1482	$V_{(BR)CEO}$	V dc	40 50	—
Collector - Emitter Breakdown Voltage	I_C = 0.25 mA dc, V_{EB} = 1.5V dc 2N1479, 2N1481 2N1480, 2N1482	$V_{(BR)CEX}$	V dc	60 100	—
Emitter - Base Cutoff Current	V_{EB} = 12 V dc	I_{EBO}	µA dc	—	10
Collector - Emitter Cutoff Current	V_{CE} = 60 Vdc	I_{CEO} I_{CEO}	µA dc	—	10
Collector - Base Cutoff Current	V_{CB} = 30 V dc 2N1479, 2N1481 V_{CB} = 50 V dc 2N1480, 2N1482	I_{CBO1}	µA dc	—	5 5
Forward-Current Transfer Ratio	I_C = 200 mA dc; V_{CE} = 4 V dc 2N1479, 2N1480 2N1481, 2N1482	h_{FE1}		20 35	60 100
Collector - Base Cutoff Current	T_A = 150°C V_{CB} = 30 V dc 2N1479, 2N1481 V_{CB} = 50 V dc 2N1480, 2N1482	I_{CBO2}	mA dc	—	0.75 0.75
Forward-Current Transfer Ratio	T_A = -55°C I_C = 200 mA dc, V_{CE} = 4 V dc 2N1479, 2N1480 2N1481, 2N1482	h_{FE2}		10 17	—
Collector-Emitter Saturation Voltage	I_C = 200 mA dc I_B = 20 mA dc, 2N1479, 2N1480 I_B = 10 mA dc, 2N1481, 2N1482	$V_{CE(SAT)}$	V dc	—	0.75 0.75
Base-Emitter Voltage (unsaturated)	I_C = 200 mA dc, V_{CE} = 4 V dc	$V_{BE(on)}$	V dc	—	1.5
Pulse Response	R_C = 59 Ω, V_{CC} = 12 V dc, $I_{B(0)} = I_{B(2)}$ = 8.5 mA dc $I_{B(1)}$ = 20 mA dc	$t_{on} + t_{off}$	µs	—	25
Small-Signal, Short-Circuit, Forward-Current Transfer Ratio Cut Off Frequency	I_C = 5 mA dc, V_{CB} = 28 V dc	f_{ab}	kHz	800	—

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Absolute Maximum Ratings (25°C unless otherwise specified)

Ratings	Symbol	Value
Collector - Emitter Voltage 2N1479, 2N1481 2N1480, 2N1482	V_{CEO}	40 V dc 55 V dc
Collector - Emitter Voltage 2N1479, 2N1481 2N1480, 2N1482	V_{CEX}	60 V dc 100 V dc
Collector - Base Voltage 2N1479, 2N1481 2N1480, 2N1482	V_{CBO}	60 V dc 100 V dc
Emitter - Base Voltage	V_{EBO}	12 V dc
Collector Current	I_C	1.5 A dc
Base Current	I_B	1.0 A dc
Total Power Dissipation @ T_A = +25°C	P_T(1)	1.0 W
Operating & Storage Temperature Range	T_{OP}, T_{STG}	-65°C to +200°C

(1) This power dissipation is for 1,000 hours expected life at T_A = +25°C.

Thermal Characteristics

Characteristics	Symbol	Max. Value
Thermal Resistance Junction to Case	$R_{\theta JC}$	35°C/W

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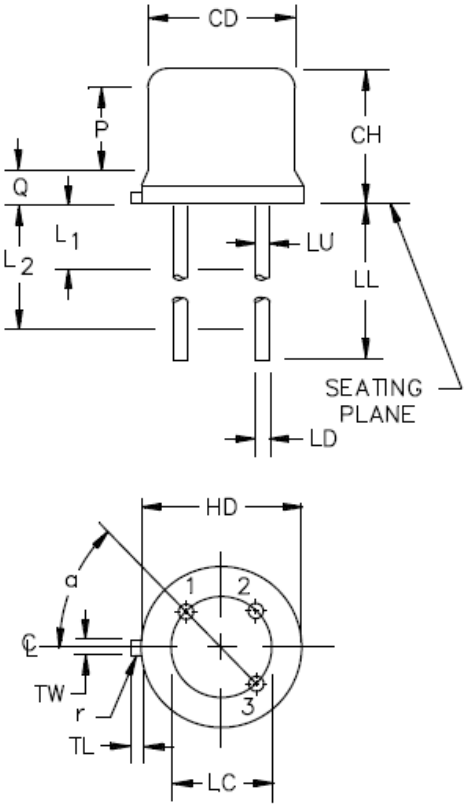
Outline Drawing: TO-205AA, TO-205AD Package Types

Symbol	Dimensions				Note
	Inches		Millimeters		
	Min	Max	Min	Max	
CD	.305	.335	7.75	8.51	3
CH	.240	.260	6.10	6.60	
HD	.335	.370	8.51	9.40	
LC	.200 TP		5.08 TP		4
LD	.016	.019	0.41	0.48	5, 6
LL	See notes 6, 7, and 8				
LU	.016	.019	0.41	0.48	5, 6
L_1		.050		1.27	5, 6
L_2	.250		6.35		5, 6
P	.100		2.54		9
Q		.030		0.76	3
TL	.029	.045	0.74	1.14	10, 11
TW	.028	.034	0.71	0.86	10
r		.010		0.25	12
α	45° TP		45° TP		4



NOTES:

1. Dimensions are in inches. Millimeters are given for general information only.
2. Lead 1 = emitter, lead 2 = base, lead 3 = collector. The collector shall be internally connected to the case.
3. CD shall not vary more than .010 inch (0.25 mm) in zone P. This zone is controlled for automatic handling.
4. Leads at gauge plane .054 +.001 -.000 inch (1.37 +0.03 -0.00 mm) below seating plane shall be within .007 inch (0.18 mm) 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 gauging procedure.
5. Dimension LU applies between L_1 and L_2. Dimension LD applies between L_2 and LL minimum. Diameter is uncontrolled in and beyond LL minimum.
6. All three leads.
7. For the modified TO-205AA (formerly TO-5) package (PINs without the S suffix), dimension LL is 1.500 inch (38.10 mm) minimum and 1.750 inch (44.45 mm) maximum.
8. For the modified TO-205AD (formerly TO-39) package (PINs with the S suffix), dimension LL is .500 inch (12.70 mm) minimum and .750 inch (19.05 mm) maximum.
9. Body contour optional within zone defined by dimensions HD, CD, and Q.
10. Beyond r (radius) maximum, dimension TW shall be held for a minimum length of .011 (0.28 mm).
11. Dimension TL measured from maximum HD.
12. Dimension r (radius) applies to both inside corners of tab.
13. In accordance with ASME Y14.5M, diameters are equivalent to Φx symbology.

FIGURE 1. Physical dimensions and configuration of TO-205AA and TO-205AD package.