2N6306 | 2N6308
NPN POWER TRANSISTORS - 1

Solitron Devices, Inc.

KEY FEATURES

- JAN/JANTX/JANTXV STANDARD PRODUCTS
- QUALIFIED PER MIL-PRF-19500/498
- LOW ON RESISTANCE
- FAST SWITCHING
- HIGH OFF ISOLATION
- HIGH BREAKDOWN VOLTAGE
- SECOND SOURCE FOR MICROSEMI
- DESIGNED FOR USE IN HIGH VOLTAGE INVERTERS, CONVERTERS, SWITCHING REGULATORS, LINE OPERATED AMPLIFIERS AND SWITCHING POWER SUPPLIES



Part Number	Package	19500/	Emitter/Base Voltage	Collector Current
2N6306	TO-3	498	250V/500V	8A
2N6308	TO-3	498	350V/700V	8A

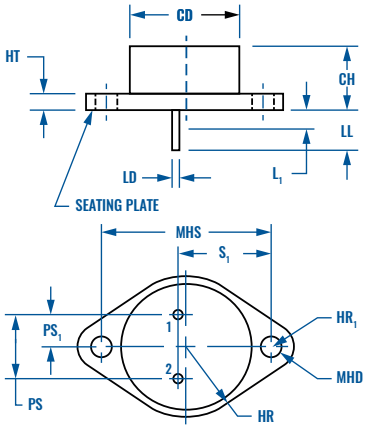
ABSOLUTE MAXIMUM RATINGS

Emitter-Base Voltage	8V	Storage Temperature	-65 to 200°C
Base Current	4A	Operating Temperature	-65 to 200°C
Lead Temperature (1/16 from case, 10 sec)	300°C	Power Dissipation Derating	125.0W @ T_C 25°C 62.5W @ 100°C 833mW/°C 25°C < TC < 175°C

ORDERING GUIDE

JAN2N6306	JANTX2N6306	JANTXV2N6306
JAN2N6308	JANTX2N6308	JANTXV2N6308

TO-3 PACKAGE OUTLINE & PIN CONNECTIONS



Ltr	Dimensions			
	Inches		mm	
	Min.	Max.	Min.	Max.
CD		0.875		22.22
CH	0.250	0.328	6.35	8.33
HR	0.495	0.525	12.57	13.34
HR_1	0.131	0.188	3.33	4.78
HT	0.060	0.135	1.52	3.43
LD	0.038	0.043	0.97	1.09
LL	0.312	0.500	7.92	12.70
L_1		0.050		1.27
MHD	0.151	0.161	3.84	4.09
MHS	1.177	1.197	29.90	30.40
PS	0.420	0.440	10.67	11.18
PS_1	0.205	0.225	5.21	5.72
S_1	0.655	0.675	16.64	17.15

ELECTRICAL SPECIFICATIONS

Typical @ 25°C unless otherwise noted

Parameter		Symbol	Min.	Max.	Unit
Collector-Base Breakdown Voltage I_C = 100mAdc	2N6306 2N6308	$V_{(BR)CEO}$	250 350		Vdc Vdc
Collector-Emitter Cutoff Current V_{CE} = 500Vdc, V_{BE} = 1.5Vdc V_{CE} = 700Vdc, V_{BE} = 1.5Vdc	2N6306 2N6308	I_{CEX}		5 5	µA µA
Collector-Emitter Cutoff Current V_{CE} = 250Vdc V_{CE} = 350Vdc	2N6306 2N6308	I_{CEO}		50 50	µA µA
Emitter-Base Cutoff Current V_{EB} = 8Vdc		I_{EBO}		5	µA
Forward-Current Transfer Ratio I_C = 3.0Adc, V_{CE} = 5.0Vdc I_C = 8.0Adc, V_{CE} = 5.0Vdc I_C = 0.5Adc, V_{CE} = 5.0Vdc	 2N6306 2N6308 2N6306 2N6308 2N6306 2N6308	h_{FE}	 15 12 4 3 15 12	 75 60	
Base-Emitter Voltage V_{CE} = 5.0Vdc, I_C = 3.0Adc	2N6306 2N6308	$V_{BE(on)}$		1.3 1.5	Vdc Vdc
Base-Emitter Saturated Voltage I_B = 2.0Adc, I_C = 8.0Adc I_B = 2.67Adc, I_C = 8.0Adc	2N6306 2N6308	$V_{BE(sat)}$		2.3 2.5	Vdc Vdc
Collector-Emitter Saturated Voltage I_B = 2.0Adc, I_C = 8.0Adc I_B = 2.67Adc, I_C = 8.0Adc I_B = 0.6Adc, I_C = 3.0Adc	2N6306 2N6308 2N6306, 2N6308	$V_{CE(sat)}$		5.0 5.0 0.8, 1.5	Vdc Vdc Vdc
Magnitude of Common-Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 0.3Adc, V_{CE} = 10Vdc, f = 1MHz		$\|h_{fe}\|$	5	30	
Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 0.5Adc, V_{CE} = 4.0Vdc, f = 1.0kHz		h_{fe}	5		
Output Capacitance V_{CB} = 10Vdc, I_E = 0Adc, 100kHz ≤ f ≤ 1.0MHz		C_{obo}		250	pF
Turn-On Time V_{CC} = 125Vdc, I_C = 3.0Adc, I_B = 0.6Adc		t_{on}		0.6	µs
Turn-Off Time V_{CC} = 125Vdc, I_C = 3.0Adc, I_{B1} = 0.6Adc, I_{B2} = 1.5Adc		t_{off}		3.0	µs

SAFE OPERATING AREA

DC Tests (continuous) - T_C = +25°C; t = 1.0s; 1 cycle (See Figures 11 & 12 of MIL-PRF-19500/498)

Test 1 - V_{CE} = 15.6Vdc, I_C = 8Adc | **Test 2** - V_{CE} = 37Vdc, I_C = 3.4Adc | **Test 3 2N6306** - V_{CE} = 200Vdc, I_C = 65mAdc | **Test 3 2N6308** - V_{CE} = 300Vdc, I_C = 25mAdc

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Solitron Devices, Inc. • 3301 Electronics Way, West Palm Beach, Florida 33407, USA • +1 561-848-4311 • sales@solitrondevices.com