

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 < T _c < 175°C

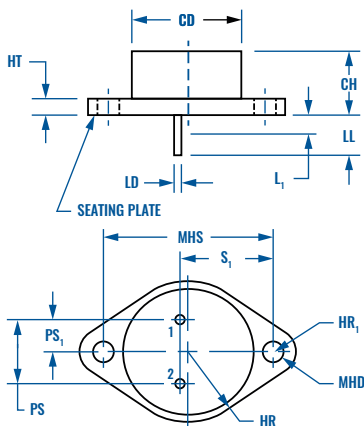
ORDERING GUIDE

JAN2N6306
JAN2N6308

JANTX2N6306
JANTX2N6308

JANTXV2N6306
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 $I_C = 100\text{mA}$	2N6306 2N6308	$V_{(BR)CEO}$	250 350		Vdc Vdc
Collector-Emitter Cutoff Current $V_{CE} = 500\text{Vdc}, V_{BE} = 1.5\text{Vdc}$ $V_{CE} = 700\text{Vdc}, V_{BE} = 1.5\text{Vdc}$	2N6306 2N6308	I_{CEX}		5 5	μA μA
Collector-Emitter Cutoff Current $V_{CE} = 250\text{Vdc}$ $V_{CE} = 350\text{Vdc}$	2N6306 2N6308	I_{CEO}		50 50	μA μA
Emitter-Base Cutoff Current $V_{EB} = 8\text{Vdc}$		I_{EBO}		5	μA
Forward-Current Transfer Ratio $I_C = 3.0\text{Adc}, V_{CE} = 5.0\text{Vdc}$ $I_C = 8.0\text{Adc}, V_{CE} = 5.0\text{Vdc}$ $I_C = 0.5\text{Adc}, V_{CE} = 5.0\text{Vdc}$	2N6306 2N6308 2N6306 2N6308 2N6306 2N6308	h_{FE}	15 12 4 3 15 12	75 60	
Base-Emitter Voltage $V_{CE} = 5.0\text{Vdc}, I_C = 3.0\text{Adc}$	2N6306 2N6308	$V_{BE(on)}$		1.3 1.5	Vdc Vdc
Base-Emitter Saturated Voltage $I_B = 2.0\text{Adc}, I_C = 8.0\text{Adc}$ $I_B = 2.67\text{Adc}, I_C = 8.0\text{Adc}$	2N6306 2N6308	$V_{BE(sat)}$		2.3 2.5	Vdc Vdc
Collector-Emitter Saturated Voltage $I_B = 2.0\text{Adc}, I_C = 8.0\text{Adc}$ $I_B = 2.67\text{Adc}, I_C = 8.0\text{Adc}$ $I_B = 0.6\text{Adc}, I_C = 3.0\text{Adc}$	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 $I_C = 0.3\text{Adc}, V_{CE} = 10\text{Vdc}, f = 1\text{MHz}$		$ h_{fe} $	5	30	
Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 0.5\text{Adc}, V_{CE} = 4.0\text{Vdc}, f = 1.0\text{kHz}$		h_{fe}	5		
Output Capacitance $V_{CB} = 10\text{Vdc}, I_E = 0\text{Adc}, 100\text{kHz} \leq f \leq 1.0\text{MHz}$		C_{obo}		250	pF
Turn-On Time $V_{CC} = 125\text{Vdc}, I_C = 3.0\text{Adc}, I_B = 0.6\text{Adc}$		t_{on}		0.6	μs
Turn-Off Time $V_{CC} = 125\text{Vdc}, I_C = 3.0\text{Adc}, I_{B1} = 0.6\text{Adc}, I_{B2} = 1.5\text{Adc}$		t_{off}		3.0	μs

SAFE OPERATING AREA
DC Tests (continuous) - $T_C = +25^\circ\text{C}; t = 1.0\text{s}; 1 \text{ cycle}$ (See Figures 11 & 12 of MIL-PRF-19500/498)

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