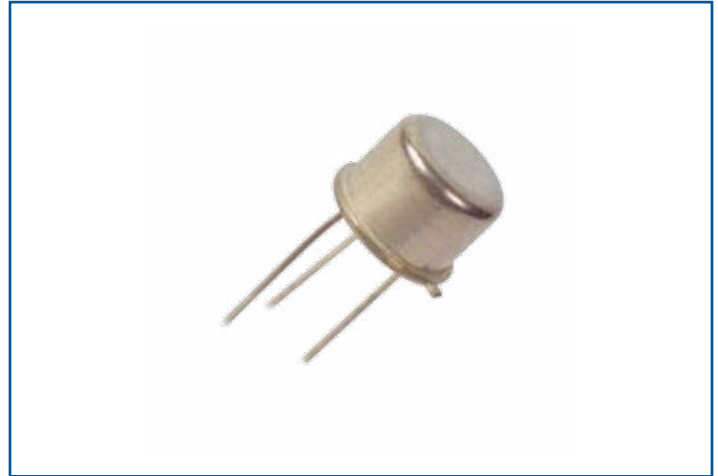


KEY FEATURES

- JAN/JANTX/JANTXV STANDARD PRODUCTS
- QUALIFIED PER MIL-PRF-19500/368
- LOW ON RESISTANCE
- FAST SWITCHING
- HIGH OFF ISOLATION
- SECOND SOURCE FOR MICROSEMI
- DESIGNED FOR HIGH-VOLTAGE LOW CURRENT INVERTERS & HIGH FREQUENCY SWITCHING WITH SMALL PACKAGE



Part Number	Package	19500/	Emitter/Base Voltage	Collector Current
2N3439	TO-5/39	368	350V/450V	1.0A
2N3440	TO-5/39	368	250V/300V	1.0A

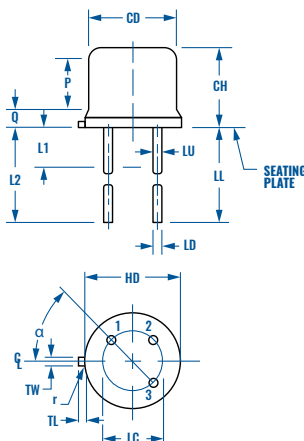
ABSOLUTE MAXIMUM RATINGS

Emitter-Base Voltage	7V	Storage Temperature	-65 to 200°C
Thermal Impedance	175°C/W	Operating Temperature	-65 to 200°C
Lead Temperature (1/16 from case, 10 sec)	300°C	Power Dissipation Derating	0.8W @ $T_A = 25^\circ\text{C}$ 5.0W @ $T_C = 25^\circ\text{C}$ 4.75mW/°C for $T_A > 25^\circ\text{C}$ 28.5mW/°C for $T_C > 25^\circ\text{C}$

ORDERING GUIDE

JAN2N3439	JANTX2N3439	JANTXV2N3439
JAN2N3440	JANTX2N3440	JANTXV2N3440

TO-5/39 PACKAGE OUTLINE & PIN CONNECTIONS



Ltr	Dimensions			
	Inches		mm	
	Min.	Max.	Min.	Max.
CD	0.305	0.335	7.75	8.51
CH	0.240	0.260	6.10	6.60
HD	0.335	0.370	8.51	9.40
L1		0.050		1.27
L2	0.250		6.35	
LC	0.200 TP		5.08 TP	
LD	0.016	0.019	0.41	0.48
LL	see note 14			
LU	0.016	0.019	0.41	0.48
Q		0.030		0.76
r		0.010		0.25
TL	0.029	0.045	0.74	1.14
TW	0.028	0.034	0.71	0.86
α	45° TP			

ELECTRICAL SPECIFICATIONS
 Typical @ 25°C unless otherwise noted

Parameter		Symbol	Min.	Max.	Unit
Collector-Emitter Breakdown Voltage $I_C = 10\text{mA}$, $R_{\text{BB1}} = 470\ \Omega$, $V_{\text{BB1}} = 6\text{Vdc}$, $L = 25\text{mH}$ (min), $f = 30\text{-}60\text{Hz}$	2N3439 2N3440	$V_{(\text{BR})\text{CEO}}$	350 250		Vdc Vdc
Collector-Emitter Cutoff Current $V_{\text{CE}} = 450\text{Vdc}$, $V_{\text{BE}} = -1.5\text{Vdc}$ $V_{\text{CE}} = 300\text{Vdc}$, $V_{\text{BE}} = -1.5\text{Vdc}$	2N3439 2N3440	I_{CEX}		5 5	μA
Collector-Emitter Cutoff Current $V_{\text{CE}} = 300\text{Vdc}$ $V_{\text{CE}} = 200\text{Vdc}$	2N3439 2N3440	I_{CEO}		2 2	μA
Emitter-Base Cutoff Current $V_{\text{EB}} = 7\text{Vdc}$		I_{EBO}		10	μA
Forward-Current Transfer Ratio $I_C = 20\text{mA}$, $V_{\text{CE}} = 10\text{Vdc}$ $I_C = 2.0\text{mA}$, $V_{\text{CE}} = 10\text{Vdc}$ $I_C = 0.2\text{mA}$, $V_{\text{CE}} = 10\text{Vdc}$		h_{FE}	40 30 10	160	
Collector-Base Cutoff Current $V_{\text{CB}} = 360\text{Vdc}$, 2N3439 $V_{\text{CB}} = 250\text{Vdc}$, 2N3440		I_{CBO}		2 2	μA
Base-Emitter Saturated Voltage $I_B = 4\text{mA}$, $I_C = 50\text{mA}$		$V_{\text{BE(sat)}}$		1.3	Vdc
Collector-Emitter Saturated Voltage $I_B = 4\text{mA}$, $I_C = 50\text{mA}$		$V_{\text{CE(sat)}}$		0.5	Vdc
Magnitude of Common-Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 10\text{mA}$, $V_{\text{CE}} = 10\text{Vdc}$, $f = 5\text{MHz}$		$ h_{\text{fe}} $	3	15	
Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 5\text{mA}$, $V_{\text{CE}} = 10\text{Vdc}$, $f = 1.0\text{kHz}$		h_{fe}	25		
Output Capacitance Input Open Circuit $V_{\text{CB}} = 10\text{Vdc}$, $I_E = 0\text{A}$, $100\text{kHz} \leq f \leq 1.0\text{MHz}$		C_{obo}		10	pF
Turn-On Time $V_{\text{CC}} = 200\text{Vdc}$, $I_C = 20\text{mA}$, $I_{\text{B1}} = 2\text{mA}$		t_{on}		1	μs
Turn-Off Time $V_{\text{CC}} = 200\text{Vdc}$, $I_C = 20\text{mA}$, $I_{\text{B1}} = -I_{\text{B2}} = 2\text{mA}$		t_{off}		10	μs

SAFE OPERATING AREA
DC Tests (continuous) - $T_C = +25^\circ\text{C}$; $t = 1.0\text{s}$; 1 cycle

Test 1 (2N3439 & 2N3440) - $V_{\text{CE}} = 5\text{Vdc}$, $I_C = 1\text{A}$
Test 2 (2N3439) - $V_{\text{CE}} = 350\text{Vdc}$, $I_C = 4\text{mA}$
Test 3 (2N3440) - $V_{\text{CE}} = 250\text{Vdc}$, $I_C = 20\text{mA}$