Microsemi LAWRENCE

6 Lake Street, Lawrence, MA 01841
1-800-446-1158 / (978) 620-2600 / Fax: (978) 689-0803
Website: http: //www.microsemi.com

TECHNICAL DATA SHEET

NPN SILICON TRANSISTOR

Qualified per MIL-PRF-19500/317

DEVICES

2N2369A **2N2369AUB** **2N4449**
2N2369AU **2N2369AUBC ***
2N2369AUA

*** Available to JANS quality level only.**

LEVELS

JAN
JANTX
JANTXV
JANS

ABSOLUTE MAXIMUM RATINGS *(T_C = +25°C unless otherwise noted)*

Parameters / Test Conditions		Symbol	Value	Unit
Collector-Emitter Voltage	2N2369A / U / UA 2N4449 / UB / UBC	V_{CEO}	15 20	Vdc
Emitter-Base Voltage	2N2369A / U / UA 2N4449 / UB / UBC	V_{EBO}	4.5 6.0	Vdc
Collector-Base Voltage		V_{CBO}	40	Vdc
Collector-Emitter Voltage		I_{CES}	40	Vdc
Total Power Dissipation @ T_A = +25°C	2N2369A; 2N4449 UA, UB, UBC U	P_T	0.36 (1) 0.36 (1, 5) 0.50 (4)	W
Operating & Storage Junction Temperature Range		T_{op}, T_{stg}	-65 to +200	°C

THERMAL CHARACTERISTICS

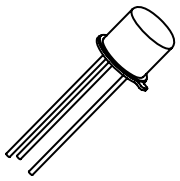
Parameters / Test Conditions		Symbol	Value	Unit
Thermal Resistance, Ambient-to-Case	2N2369A; 2N4449 UA, UB, UBC U	$R_{\theta JA}$	400 400 (5) 350	°C/W

Note:

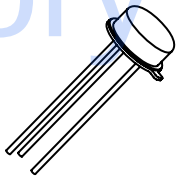
1. Derate linearly 2.06 mW°/C above T_A = +25°C.
2. Derate linearly 4.76 mW°/C above T_C = +95°C.
3. Derate linearly 3.08 mW°/C above T_C = +70°C.
4. Derate linearly 3.44 mW°/C above T_A = +54.5°C.
5. Mounted on FR-4 PCB (1Oz. Cu) with contacts 20 mils larger than package pads.

ELECTRICAL CHARACTERISTICS *(T_A = +25°C, unless otherwise noted)*

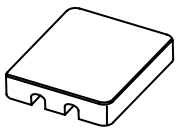
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
OFF CHARACTERTICS				
Collector-Emitter Breakdown Voltage I_C = 10mAdc	$V_{(BR)CEO}$	15		Vdc
Collector-Base Cutoff Current V_{CE} = 20Vdc	I_{CES}		0.4	µAdc



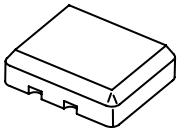
TO-18 (TO-206AA)
2N2369A



TO-46 (TO-206AB)
2N4449



SURFACE MOUNT
UA



SURFACE MOUNT
UB & UBC
(UBC = Ceramic Lid Version)

SURFACE MOUNT
U (Dual Transistor)

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ELECTRICAL CHARACTERISTICS *(T_A = +25°C, unless otherwise noted)*

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Emitter-Base Breakdown Voltage V_{EB} = 4.5Vdc Emitter-Base Cutoff Current V_{EB} = 4.0Vdc	I_{EBO}		10 0.25	µAdc
Collector- Base Breakdown Voltage V_{CB} = 40Vdc Collector-Base Cutoff Current V_{CB} = 32Vdc	I_{CBO}		10 0.2	µAdc
ON CHARACTERISTICS (1)				
Forward-Current Transfer Ratio I_C = 10mAdc, V_{CE} = 0.35Vdc I_C = 30mAdc, V_{CE} = 0.4Vdc I_C = 10mAdc, V_{CE} = 1.0Vdc I_C = 100mAdc, V_{CE} = 1.0Vdc	h_{FE}	 40 30 40 20	 120 120 120 120	
Collector-Emitter Saturation Voltage I_C = 10mAdc, I_B = 1.0mAdc I_C = 30mAdc, I_B = 3.0mAdc I_C = 100mAdc, I_B = 10mAdc	$V_{CE(sat)}$		 0.20 0.25 0.45	Vdc
Base-Emitter Saturation Voltage I_C = 10mAdc, I_B = 1.0mAdc I_C = 30mAdc, I_B = 3.0mAdc I_C = 100mAdc, I_B = 10mAdc	$V_{BE(sat)}$	 0.70 0.80	 0.85 0.90 1.20	Vdc

DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Forward Current Transfer Ratio I_C = 10mAdc, V_{CE} = 10Vdc, f = 100MHz	$\|h_{fe}\|$	5.0	10	
Output Capacitance V_{CB} = 5.0Vdc, I_E = 0, 100kHz ≤ f ≤ 1.0MHz	C_{obo}		4.0	pF
Input Capacitance V_{EB} = 0.5Vdc, I_C = 0, 100kHz ≤ f ≤ 1.0MHz	C_{ibo}		5.0	pF

SWITCHING CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Turn-On Time I_C = 10mAdc; I_{B1} = 3.0mAdc, I_{B2} = -1.5mAdc	t_{on}		12	ηs
Turn-Off Time I_C = 10mAdc; I_{B1} = 3.0mAdc, I_{B2} = -1.5mAdc	t_{off}		18	ηs
Charge Storage Time I_C = 10mAdc; I_{B1} = 10mAdc, I_{B2} = 10mAdc	t_S		13	ηs

(1) Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2.0%.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Microsemi:

JANTX2N2369A JANS2N4449 JANS2N2369A JANTXV2N2369A Jan2N4449 2N2369AUB Jan2N2369AUA JANSF2N2369AUB 2N2369AUA Jantxv2N4449 Jan2N2369A JANS2N2369AUB JANS2N2369AUA Jantxv2N2369AUB 2N2369A Jantx2N4449 JANS2N2369AUBC Jantx2N2369AUA Jan2N2369AUB 2N2369AU 2N4449 Jantxv2N2369AUA