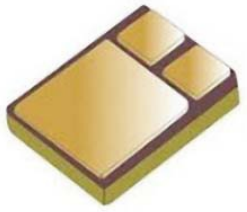
2N5339U3

NPN Power Silicon Transistor

Rev. V1

Features

- JANS and JANSR Qualified to MIL-PRF-19500/560
- JEDEC Registered 2N5154
- Lightweight & Low Power
- Ideal for Space, Military, and Other High Reliability Applications
- Surface Mount U3 Package



Electrical Characteristics

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Off Characteristics					
Collector - Emitter Breakdown Voltage	I_C = 50 mAdc	$V_{(BR)CEO}$	Vdc	100	—
Collector - Emitter Cutoff Current	V_{CE} = 100 Vdc V_{CE} = 90 Vdc, V_{BE} = 1.5 Vdc	I_{CEO} I_{CEX}	µAdc	— —	100 1.0
Collector - Base Cutoff Current	V_{CB} = 100 Vdc	I_{CBO}	µAdc	—	1.0
Emitter - Base Cutoff Current	V_{EB} = 6.0 Vdc	I_{EBO}	µAdc	—	100
On Characteristics[1]					
Forward Current Transfer Ratio	I_C = 0.5 Adc, V_{CE} = 2.0 Vdc I_C = 2.0 Adc, V_{CE} = 2.0 Vdc I_C = 5.0 Adc, V_{CE} = 2.0 Vdc	H_{FE}	-	60 60 40	— 240 —
Collector - Emitter Saturation Voltage	I_C = 2.0 Adc, I_B = 0.2 Adc I_C = 5.0 Adc, I_B = 0.5 Adc	$V_{CE(SAT)}$	Vdc	—	0.7 1.2
Emitter - Base Saturation Voltage	I_C = 2.0 Adc, I_B = 0.2 Adc I_C = 5.0 Adc, I_B = 0.5 Adc	$V_{BE(SAT)}$	Vdc	—	1.2 1.8
Dynamic Characteristics					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio	I_C = 0.5 Adc, V_{CE} = 10.0 Vdc, f = 10 mHz	$\lvert H_{FE} \rvert$	-	3	15
Output Capacitance	V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1 MHz	C_{OBO}	pF	—	250
Input Capacitance	V_{BE} = 2 Vdc, I_C = 0, 100 kHz ≤ f ≤ 1 MHz	C_{IBO}	pF	—	1000
Safe Operating Area					
DC Tests: Test 1: Test 2: Test 3:	T_C = +25°C, I Cycle, t ≥ 0.5 s V_{CE} = 2 Vdc, I_C = 5 Adc V_{CE} = 5 Vdc, I_C = 2 Adc V_{CE} = 90 Vdc, I_C = 55 mAdc				

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

MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support

NPN Power Silicon Transistor

Rev. V1

Absolute Maximum Ratings[1]

Ratings	Symbol	Value
Collector - Emitter Voltage	V_{CEO}	100 Vdc
Collector - Base Voltage	V_{CBO}	100 Vdc
Emitter - Base Voltage	V_{EBO}	6 Vdc
Base Current	I_B	1 Adc
Collector Current	I_C	5 Adc
Total Power Dissipation @ T_A = 25°C @ T_C = 25°C	P_T	1.0 W 75 W
Operating & Storage Temperature Range	T_{OP}, T_{STG}	-65°C to +200°C

1. Derate linearly 434 mW/°C for T_C > 25°C

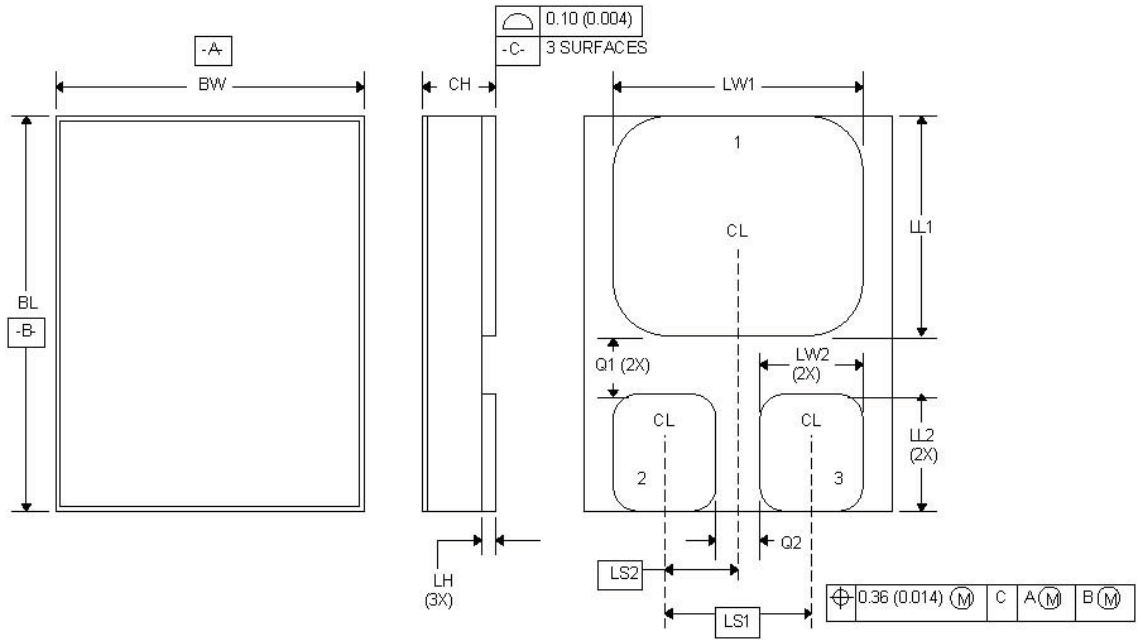
Thermal Characteristics

Characteristics	Symbol	Max. Value
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.3°C/W

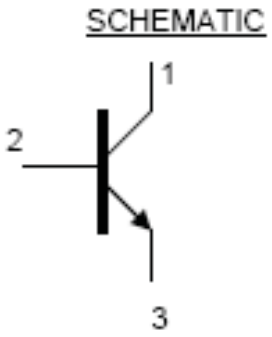
MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support

Outline Drawing (U3)



1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. In accordance with ASME Y14.5M, diameters are equivalent to φx symbology.
4. Terminal 1 - collector, terminal 2 -base, terminal 3 - emitter.



Ltr	Dimensions			
	Inches		Millimeters	
	Min.	Max.	Min.	Max.
BL	0.395	0.405	10.03	10.29
BW	0.291	0.301	7.40	7.65
CH	0.1085	0.1205	2.76	3.06
LH	0.010	0.020	0.25	0.51
LW_1	0.281	0.291	7.14	7.39
LW_2	0.090	0.100	2.29	2.54
LL_1	0.220	0.230	5.59	5.84
LL_2	0.115	0.125	2.92	3.18
LS_1	0.150 BSC		3.81 BSC	
LS_2	0.075 BSC		1.91 BSC	
Q_1	0.030	-	0.762	-
Q_2	0.030	-	0.762	-

MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support

MACOM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with MACOM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.