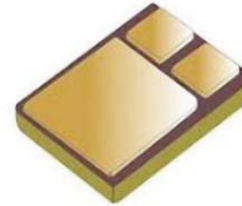


PNP Power Silicon Transistor

Rev. V2

Features

- JANS and JANSR Qualified to MIL-PRF-19500/561
- JEDEC Registered 2N6193
- Lightweight & Low Power
- Ideal for Space, Military, and Other High Reliability Applications
- Surface Mount U3 (TO-276AA) Package



Electrical Characteristics

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Off Characteristics					
Collector - Emitter Breakdown Voltage	$I_C = 50 \text{ mAdc}$	$V_{(BR)CEO}$	Vdc	100	—
Collector - Emitter Cutoff Current	$V_{CE} = 100 \text{ Vdc}$ $V_{CE} = 90 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$	I_{CEO} I_{CEX}	μAdc	—	100 10
Collector - Base Cutoff Current	$V_{CB} = 100 \text{ Vdc}$	I_{CBO}	μAdc	—	10
Emitter - Base Cutoff Current	$V_{EB} = 6.0 \text{ Vdc}$	I_{EBO}	μAdc	—	100
On Characteristics¹					
Forward Current Transfer Ratio	$I_C = 0.5 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 2.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 5.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$	H_{FE}	-	60 60 40	— 240 —
Collector - Emitter Saturation Voltage	$I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$ $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	$V_{CE(SAT)}$	Vdc	—	0.7 1.2
Emitter - Base Saturation Voltage	$I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$ $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	$V_{BE(SAT)}$	Vdc	—	1.2 1.8
Dynamic Characteristics					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio	$I_C = 0.5 \text{ Adc}, V_{CE} = 10.0 \text{ Vdc}, f = 10 \text{ mHz}$	$ H_{FE} $	-	3	15
Output Capacitance	$V_{CB} = 10 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1 \text{ MHz}$	C_{OBO}	pF	—	300
Input Capacitance	$V_{BE} = 2 \text{ Vdc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1 \text{ MHz}$	C_{IBO}	pF	—	1250
Switching Characteristics					
Delay Time	$V_{CC} = -40 \text{ Vdc}; V_{BE(OFF)} = 2.3 \text{ Vdc}$	T_D	ns	—	100
Rise Time	$I_C = 2.0 \text{ Adc}, I_{B1} = 0.2 \text{ Adc}$	T_R	ns	—	100
Storage Time	$V_{CC} = -40 \text{ Vdc}; I_C = 2.0 \text{ Adc}$	T_S	μs	—	2.0
Fall Time	$I_{B1} = -I_{B2} = 0.2 \text{ Adc}$	T_F	ns	—	200
Safe Operating Area					
DC Tests:	$T_C = +25^\circ\text{C}, 1 \text{ Cycle}, t \geq 0.5 \text{ s}$				
Test 1:	$V_{CE} = 2 \text{ Vdc}, I_C = 5 \text{ Adc}$				
Test 2:	$V_{CE} = 90 \text{ Vdc}, I_C = 55 \text{ mAdc}$				

1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

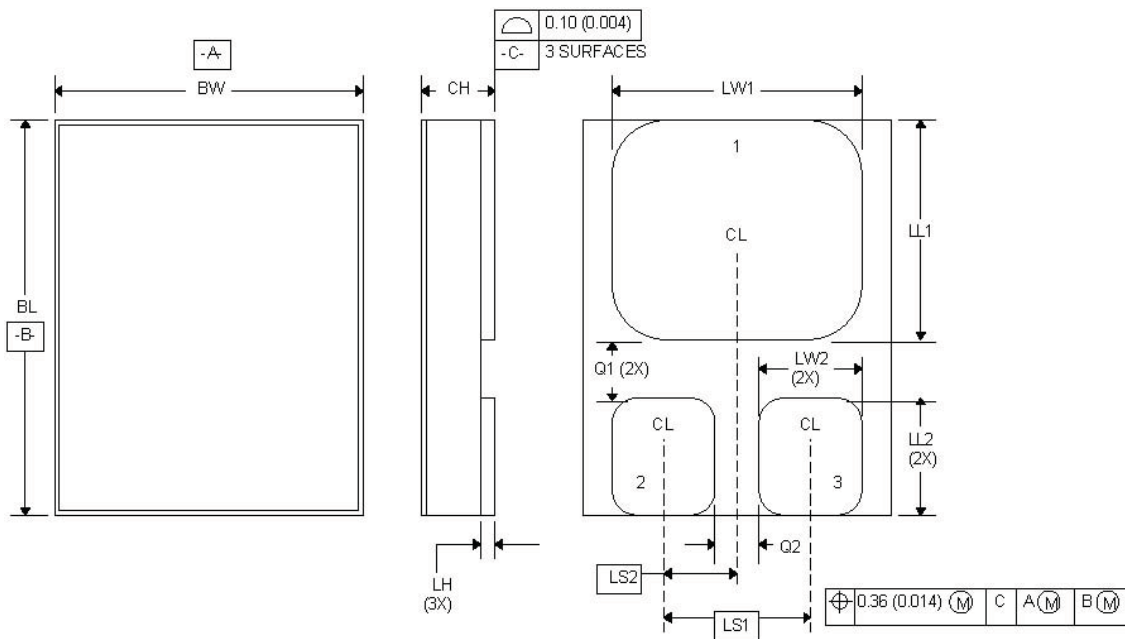
Absolute Maximum Ratings

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 @ $T_A = 25^\circ\text{C}$ @ $T_C = 25^\circ\text{C}$	P_T	1.0 W 100 W
Operating & Storage Temperature Range	T_{OP}, T_{STG}	-65°C to $+200^\circ\text{C}$

Thermal Characteristics

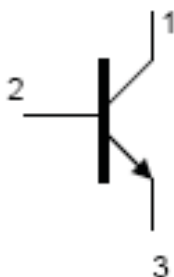
Characteristics	Symbol	Max. Value
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.75°C/W

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 ϕ x symbology.
4. Terminal 1 - collector, terminal 2 - base, terminal 3 - emitter.

SCHEMATIC



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
LW1	0.281	0.291	7.14	7.39
LW2	0.090	0.100	2.29	2.54
LL1	0.220	0.230	5.59	5.84
LL2	0.115	0.125	2.92	3.18
LS1	0.150 BSC		3.81 BSC	
LS2	0.075 BSC		1.91 BSC	
Q1	0.030	-	0.762	-
Q2	0.030	-	0.762	-

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