



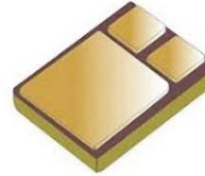
NPN Power Silicon Transistors

2N6193U3



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



Maximum Ratings

Ratings	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	100	Vdc
Collector - Base Voltage	V_{CBO}	100	Vdc
Emitter - Base Voltage	V_{EBO}	6.0	Vdc
Collector Current	I_C	5.0	Adc
Base Current	I_B	1.0	Adc
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ @ $T_C = 25^\circ\text{C}$	P_T	1.0 100	W W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200	$^\circ\text{C}$

Thermal Characteristics

Characteristics	Symbol	Maximum	Units
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.75	$^\circ\text{C/W}$

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

OFF Characteristics	Symbol	Minimum	Maximum	Units
Collector - Emitter Breakdown Voltage $I_C = 50\text{ mAdc}$	$V_{(BR)CEO}$	100	- - -	Vdc
Collector - Emitter Cutoff Current $V_{CE} = 100\text{ Vdc}$	I_{CEO}	- - -	100	μAdc
Emitter - Base Cutoff Current $V_{EB} = 6.0\text{ Vdc}$	I_{EBO}	- - -	100	μAdc
Collector - Emitter Cutoff Current $V_{CE} = 90\text{ Vdc}, V_{BE} = +1.5\text{ Vdc}$	I_{CEX}	- - -	10	μAdc
Collector - Base Cutoff Current $V_{CE} = 100\text{ Vdc}$	I_{CBO}	- - -	10	μAdc

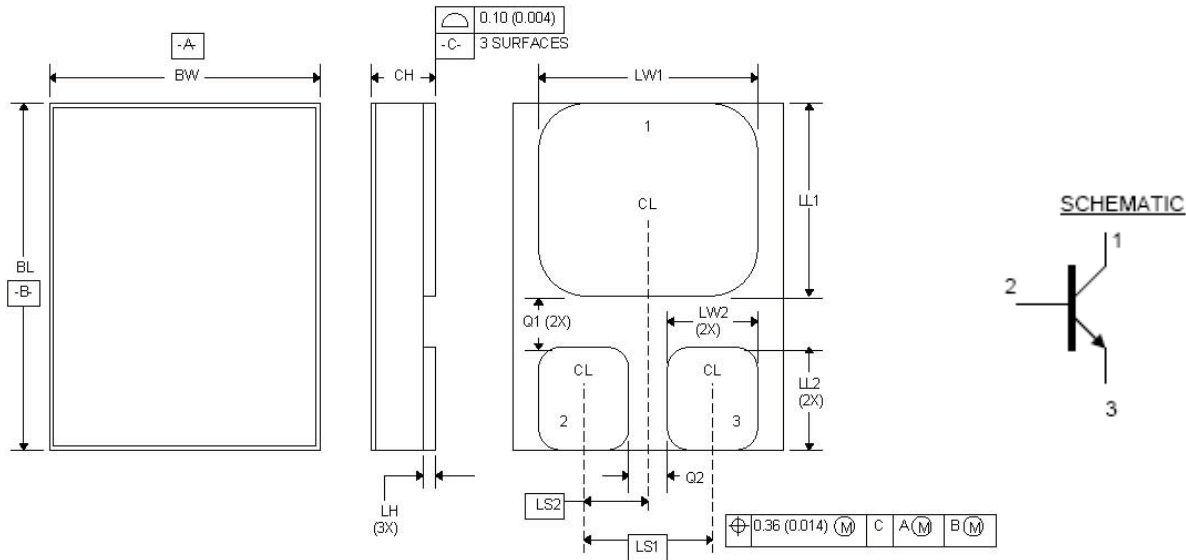


Electrical Characteristics ($T_A = +25^\circ\text{C}$, unless otherwise noted)

ON Characteristics		Symbol	Mimimum	Maximum	Units
DC Current Drain 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	240	
			60		
			40		
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)}	- - -	0.7 1.2	Vdc
Base-Emitter 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)}	- - -	1.2 1.8	Vdc
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		h _{fe}	3	15	
Output Capacitance V _{CB} = 10 Vdc, I _E = 0, 100 kHz ≤ f ≤ 1.0 MHz		C _{obo}	- - -	300	pF
Output Capacitance V _{BE} = 2.0 Vdc, I _C = 0, 100 kHz ≤ f ≤ 1.0 MHz		C _{ibo}	- - -	1250	pF
SWITCHING Characteristics					
Delay Time	V _{CC} = -40 Vdc, V _{BE(off)} = 2.3 Vdc, I _C = 2.0 Adc, I _{B1} = 0.2 Adc	t _d	- - -	100	ns
Rise Time		t _r	- - -	100	ns
Storage Time	V _{CC} = -40 Vdc, I _C = 2.0 Adc, I _{B1} = -I _{B2} = 0.2 Adc	t _s	- - -	2.0	μs
Fall Time		t _f	- - -	200	ns
SAFE OPERATING AREA					
DC Tests:		T _C = +25 °C, 1 Cycle, t = 0.5s			
Test 1:		V _{CE} = 2.0 Vdc, I _C = 5.0 Adc			
Test 2:		V _{CE} = 90 Vdc, I _C = 55 mAdc			

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

Outline Drawing (U3):



NOTES:

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.

Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
BL	.395	.405	10.03	10.29
BW	.291	.301	7.40	7.65
CH	.1085	.1205	2.76	3.06
LH	.010	.020	0.25	0.51
LW ₁	.281	.291	7.14	7.39
LW ₂	.090	.100	2.29	2.54
LL ₁	.220	.230	5.59	5.84
LL ₂	.115	.125	2.92	3.18
LS ₁	.150 BSC		3.81 BSC	
LS ₂	.075 BSC		1.91 BSC	
Q ₁	.030		0.762	
Q ₂	.030		0.762	

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