NPN 2N1893

MEDIUM POWER TRANSISTOR

The 2N1893 are NPN transistors mounted in TO-39 metal package.
They are intended for use in high performance amplifier, oscillator and switching applications.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CEO}	Collector-Emitter Voltage (I_B = 0)		80	V
V_{CBO}	Collector-Base Voltage (I_E = 0)		120	V
V_{CER}	Collector-Emitter Voltage (R_{BE} = 10 Ω)		100	V
V_{EBO}	Emitter-Base Voltage		7	V
I_C	Collector Current		0.5	A
I_{CM}	Peak Collector Current		1	A
I_{BM}	Peak Base Current		0.2	A
P_D	Total Power Dissipation	T_{amb}= 25°C	0.8	W
		T_{case}= 25°C	3	
		T_{case}= 100°C	1.7	
T_J	Junction Temperature		200	°C
T_{Stg}	Storage Temperature range		-65 to +150	
T_{amb}	operating ambient temperature		-65 to +150	

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-c}	Thermal Resistance, Junction-case	58.3	°C/ W
R_{thj-a}	thermal resistance from junction to ambient in free air	219	

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ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
I_{CBO}	Collector Cutoff Current	V_{CB}= 90 V I_E= 0	T_{amb}= 25°C	-	-	10	nA
			T_{amb}= 150°C	-	-	15	µA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5 V, I_B= 0		-	-	10	nA
V_{CBO}	Collector Base Sustaining Voltage	I_C= 100 mA, I_E= 0		120	-	-	V
V_{CEO}	Collector Emitter Sustaining Voltage (*)	I_C= 10 mA, I_B= 0		80	-	-	V
V_{CER}	Collector Base Breakdown Voltage (*)	I_C= 10 mA, R_{BE} = 10 Ω		100	-	-	V
V_{EBO}	Emitter Base Breakdown Voltage	I_E= 100 µA, I_C= 0		7	-	-	V
h_{FE}	DC Current Gain (*)	I_C= 0.1 mA, V_{CE}= 10 V		20	-	-	-
		I_C= 10 mA V_{CE}= 10 V	T_{amb}= 25°C	20	-	-	
			T_{amb}= -55°C	35	-		
		I_C= 150 mA, V_{CE}= 10 V		40	-	120	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C= 50 mA, I_B= 5 mA		-	-	0.9	V
		I_C= 150 mA, I_B= 15 mA		-	-	0.5	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	I_C= 50 mA, I_B= 5 mA		-	-	1.2	V
		I_C= 150 mA, I_B= 15 mA		-	-	1.3	
f_T	Transition Frequency	I_C= 50 mA, V_{CE}= 10 V f= 20 MHz		50	-	-	MHz
C_C	Collector Capacitance	I_E= i_e = 0 ,V_{CB}= 10 V f = 1MHz		-	-	15	pF
C_e	Base Capacitance	I_C= i_c = 0 ,V_{EB}= 0.5 V f = 1MHz		-	-	85	pF

(*) Pulse conditions : tp < 300 µs, δ =2%.

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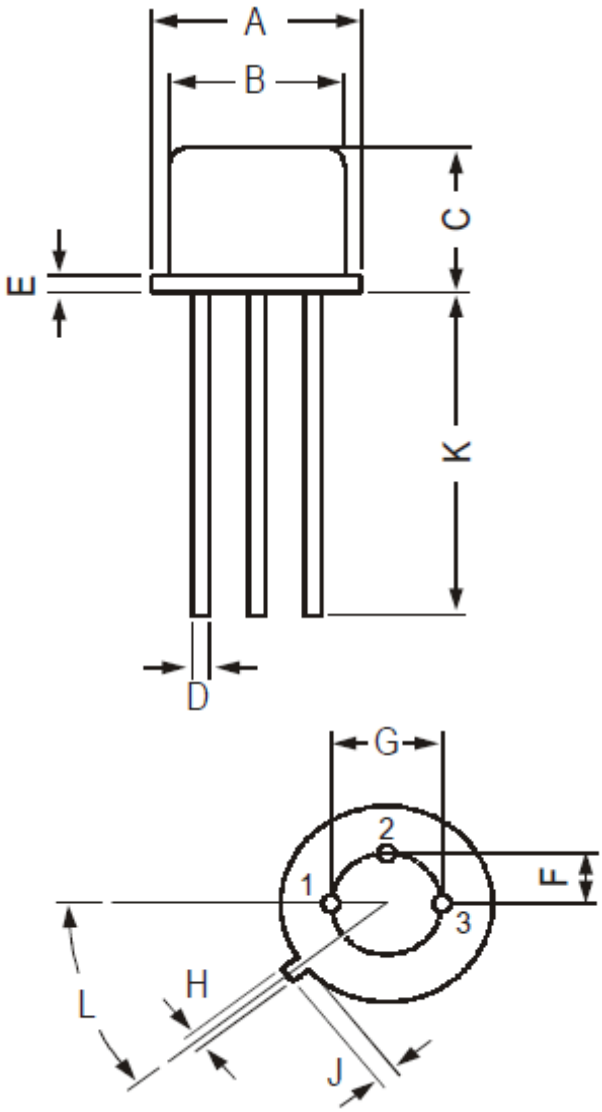
MECHANICAL DATA CASE TO-39

DIMENSIONS (mm)		
	min	max
A	8.50	9.39
B	7.74	8.50
C	6.09	6.60
D	0.40	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.70	-
L	42°	48°



Pin 1 :	Emitter
Pin 2 :	Base
Pin 3 :	Collector
Case :	Collector

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