NPN 2N2102

MEDIUM POWER AMPLIFIER & SWITCH

The 2N2102 is a silicon Planar Epitaxial NPN transistor in Jedec TO-39 metal case.
They are intended for a wide variety of small-signall and medium power applications in military and industrial equipments.
Compliance to RoHS.

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CEO}	Collector-Emitter Voltage (I_B = 0)		65	V
V_{CBO}	Collector-Base Voltage (I_E = 0)		120	V
V_{CER}	Collector-Emitter Voltage (R_{BE} = 10 Ω)		80	V
V_{EBO}	Emitter-Base Voltage		7	V
I_C	Collector Current		1	A
P_D	Total Power Dissipation	T_{amb}= 25°C	1	W
		T_{case}= 25°C	5	
T_J	Junction Temperature		-65 to 200	°C
T_{Stg}	Storage Temperature range			

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-c}	Thermal Resistance, Junction-case	35	°C/ W
R_{thj-a}	thermal resistance from junction to ambient in free air	175	

NPN 2N2102

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

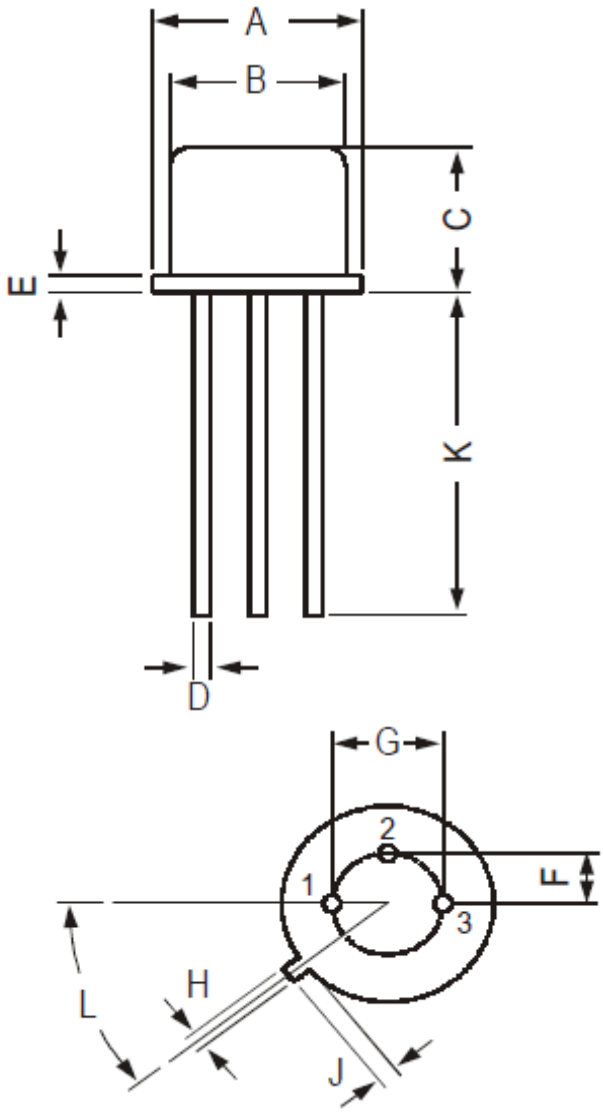
Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit
I_{CBO}	Collector Cutoff Current	V_{CB}= 60 V I_E= 0	T_{amb}= 25°C	-	-	2	nA
			T_{amb}= 150°C	-	-	2	µA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 5 V, I_C= 0		-	-	5	nA
V_{CBO}	Collector Base Sustaining Voltage	I_C= 100 µA, I_E= 0		120	-	-	V
V_{CEO}	Collector Emitter Sustaining Voltage (*)	I_C= 30 mA, I_B= 0		65	-	-	V
h_{FE}	DC Current Gain (*)	I_C= 10 µA, V_{CE}= 10 V		10	-	-	-
		I_C= 0.1 mA, V_{CE}= 10 V		20	-	-	
		I_C= 10 mA, V_{CE}= 10 V		35	-		
		I_C= 150 mA, V_{CE}= 10 V		40	-	120	
		I_C= 500 mA, V_{CE}= 10 V		25	-	-	
		I_C= 1 A, V_{CE}= 10 V		10	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C= 150 mA, I_B= 15 mA		-	-	0.5	V
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	I_C= 150 mA, I_B= 15 mA		-	-	1.1	V
C_C	Collector Capacitance	I_E= 0 ,V_{CB}= 10 V f = 1MHz		-	-	15	pF
C_e	emitter Capacitance	I_C= 0 ,V_{EB}= 0.5 V f = 1MHz		-	-	80	pF

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

NPN 2N2102

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

Revised August 2012