

**RoHS
Compliant**

Description:

A PN unijunction transistor in a TO-92 type package designed for use in pulse and timing circuits, sensing circuits and thyristor trigger circuits



Absolute maximum Ratings:

(T_A = +25°C unless otherwise specified)

Power Dissipation, P _D	: 300mW
Derate Above 25°C	: 3.0mW/°C
RMS Emitter Current, I _{E(RMS)}	: 50mA
Peak Pulse Emitter Current (Note 1) Current, i _E	: 1.5A
Emitter Reverse Voltage, V _{B2E}	: 30V
Interbase Voltage, V _{B2B1}	: 35V
Operating Junction Temperature Range, T _J	: -65°C to +125°C
Storage Temperature Range, T _{stg}	: -65°C to +150°C

Electrical Characteristics: (T_A = +25°C Unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Intrinsic Standoff Ratio		V _{B2B1} = 10V, Note3	0.70	-	0.85	-
Interbase Resistance	r _{BB}		4.0	6.0	9.1	kΩ
Interbase Resistance Temperature Coefficient			0.1	-	0.9	%/°C
Emitter Saturation Voltage	V _{EB1(sat)}	V _{B2B1} = 10V, I _E = 50mA, Note 4	-	2.5	-	V
Modulated interbase Current	I _{B2(mod)}	V _{B2B1} = 10V, I _E = 50mA	-	15	-	mA
Emitter Reverse Current	I _{EB20}	V _{B2E} = 30V, I _{B1} = 0	-	0.005	1	μA
Peak Point Emitter Current	I _P	V _{B2B1} = 25V	-	1	5	μA
Valley Point Current	I _V	V _{B2B1} = 20V, R _{B2} = 100Ω, Note 4	4	7	-	mA
Base-One Peak Pulse Voltage	V _{OB1}		5	8	-	V

Notes:

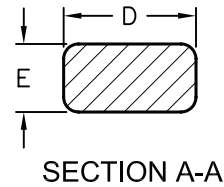
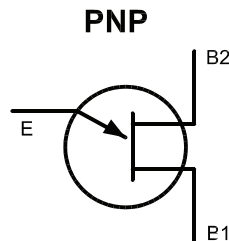
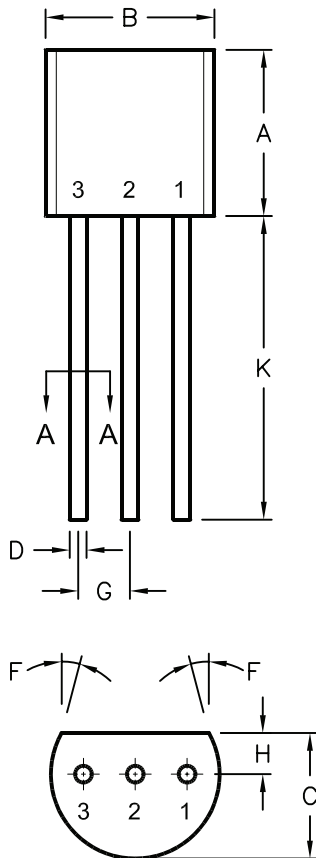
- Duty Cycle ≤ 1% PRR = 10PPS.
- Based upon power dissipation at T_A = +25°C
- Intrinsic standoff ratio is essentially constant with temperature and interbase voltage and is defined by the equation:

$$V_P - V_{BB} + V_D$$

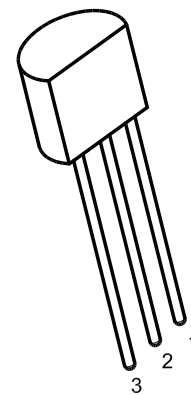
Where: V_P = Peak Point Emitter Voltage; V_{BB} = interbase Voltage;

V_D = Junction Diode Drop (~0.5V).

- Use Pulse techniques: Pulse width ~ 300μS, Duty Cycle ≤ 2% to avoid internal heating due to interbase modulation which may result in erroneous readings.



TO-92



1 Base 2
2 Emitter
3 Base 1

Dim	Min	Max
A	4.32	5.33
B	4.45	5.2
C	3.18	4.19
D	0.41	0.55
E	0.35	0.5
F	5°	
G	1.14	1.4
H	1.14	1.53
K	12.7	

Dimensions : Millimetres

Part Number Table

Description	Part Number
Unijunction Transistor, TO-92, PN	2N4871

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