

Unijunction Transistor



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: ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

Power Dissipation, P_D	: 300mW
Derate Above 25°C	: $3.0\text{mW}/^{\circ}\text{C}$
RMS Emitter Current, $I_{E(RMS)}$	: 50mA
Peak Pulse Emitter Current (Note 1) Current, i_E	: 1.5A
Emitter Reverse Voltage, V_{B_2E}	: 30V
Interbase Voltage, $V_{B_2B_1}$	: 35V
Operating Junction Temperature Range, T_J	: -65°C to $+125^{\circ}\text{C}$
Storage Temperature Range, T_{stg}	: -65°C to $+150^{\circ}\text{C}$

Electrical Characteristics: ($T_A = +25^{\circ}\text{C}$ Unless otherwise specified)

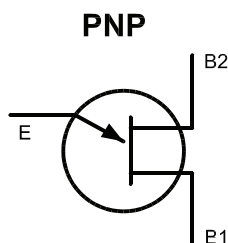
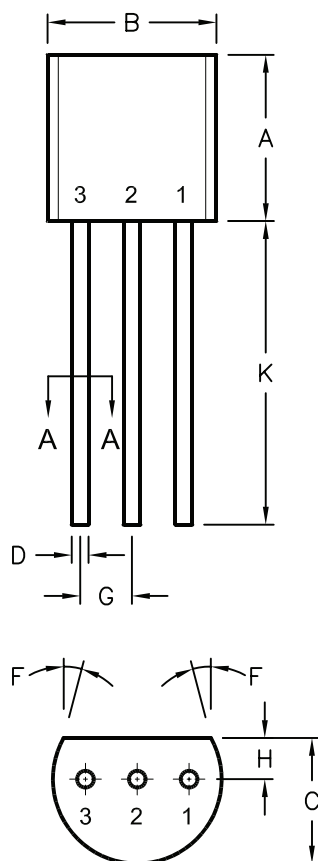
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Intrinsic Standoff Ratio		$V_{B_2B_1} = 10\text{V}$, Note3	0.70	-	0.85	-
Interbase Resistance	r_{BB}		4.0	6.0	9.1	k Ω
Interbase Resistance Temperature Coefficient			0.1	-	0.9	%/ $^{\circ}\text{C}$
Emitter Saturation Voltage	$V_{EB_1(sat)}$	$V_{B_2B_1} = 10\text{V}$, $I_E = 50\text{mA}$, Note 4	-	2.5	-	V
Modulated interbase Current	$I_{B_2(mod)}$	$V_{B_2B_1} = 10\text{V}$, $I_E = 50\text{mA}$	-	15	-	mA
Emitter Reverse Current	I_{EB_20}	$V_{B_2E} = 30\text{V}$, $I_{B_1} = 0$	-	0.005	1	μA
Peak Point Emitter Current	I_P	$V_{B_2B_1} = 25\text{V}$	-	1	5	μA
Valley Point Current	I_V	$V_{B_2B_1} = 20\text{V}$, $R_{B_2} = 100\Omega$, Note 4	4	7	-	mA
Base-One Peak Pulse Voltage	V_{OB_1}		5	8	-	V

Notes:

- Duty Cycle $\leq 1\%$ PRR = 10PPS.
- Based upon power dissipation at $T_A = +25^{\circ}\text{C}$
- Intrinsic standoff ratio is essentially constant with temperature and interbase voltage and is defined by the equation:
$$V_P = V_{BB} + V_D$$

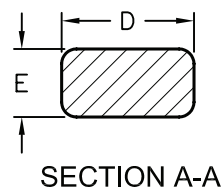
Where: V_P = Peak Point Emitter Voltage; V_{BB} = interbase Voltage;
 V_D = Junction Diode Drop ($\sim 0.5\text{V}$).
- Use Pulse techniques: Pulse width $\sim 300\mu\text{S}$, Duty Cycle $\leq 2\%$ to avoid internal heating due to interbase modulation which may result in erroneous readings.

Unijunction Transistor

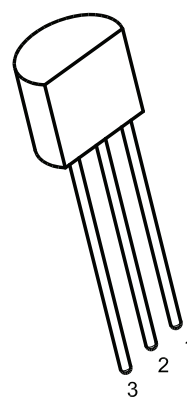


Dim	Min	Max
A	4.32	5.33
B	4.45	5.2
C	3.18	4.19
D	0.41	0.55
E	0.35	0.5
F	5°	
G	1.14	1.4
H	1.14	1.53
K	12.7	

Dimensions : Millimetres



TO-92



Part Number Table

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

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2012.