

### Description:

A TO-18, PN, Unijunction Transistor designed for use in pulse and timing circuits, sensing circuits, and thyristor trigger circuits.

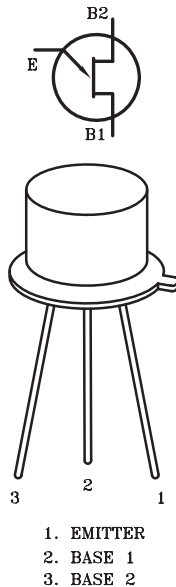
### Features:

- Low peak point current : 2 $\mu$ A (Max.)
- Low emitter reverse current : 200nA (Max.)
- Passivated surface for reliability and uniformity

### Absolute Maximum Ratings: (Ta = 25°C Unless otherwise specified)

Characteristic	Symbol	Rating
Power Dissipation (Note 1)	P <sub>D</sub>	300mW
RMS Emitter Current	I <sub>E(RMS)</sub>	50mW
Peak Pulse Emitter Current (Note 2)	I <sub>E</sub>	2 Amps
Emitter Reverse Voltage	V <sub>B2E</sub>	30V
Interbase Voltage	V <sub>B2B1</sub>	35V
Operating Junction Temperature Range	T <sub>J</sub>	-65°C to +125°C
Storage Temperature Range	T <sub>STG</sub>	-65°C to +150°C

RoHS  
Compliant

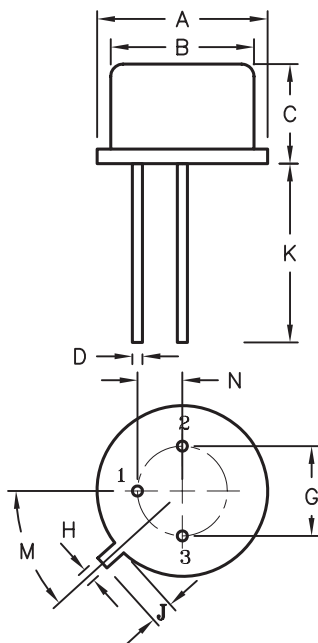


### Electrical Characteristics: (T<sub>A</sub> = +25°C Unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit.
<b>OFF Characteristics</b>						
Intrinsic Standoff Ratio	-	V <sub>B2B1</sub> = 10V, (Note 3)	0.56	-	0.75	-
Interbase Resistance	R <sub>BB</sub>	V <sub>B2B1</sub> = 3V, I <sub>E</sub> = 0	4.7	7	9.1	k $\Omega$
Interbase Resistance Temperature Coefficient	-	-	0.1	-	0.9	% / °C
Emitter Saturation Voltage	V <sub>EB1(SAT)</sub>	V <sub>B2B1</sub> = 10V, I <sub>E</sub> = 50mA, (Note 4)	-	3.5	-	V
Modulated Interbase current	V <sub>B2(MOD)</sub>	V <sub>B2B1</sub> = 10V, I <sub>E</sub> = 50mA	-	15	-	mA
Emitter Reverse Current	I <sub>EB2O</sub>	V <sub>B2E</sub> = 30V, I <sub>B1</sub> = 0	-	0.005	12	$\mu$ A
Peak Point Emitter Current	I <sub>P</sub>	V <sub>B2B1</sub> = 25V	-	1	5	$\mu$ A
Valley Point Current	I <sub>V</sub>	V <sub>B2B1</sub> = 20V, R <sub>B2</sub> = 100 $\Omega$	4	6	-	mA
Base-One Peak Pulse Voltage	V <sub>OB1</sub>	-	3	5	-	V

**Notes:**

1. Derate 3mW/°C increase in ambient temperature. The total power dissipation (available power to Emitter and Base-Tow) must be limited by the external circuitry.
2. Capacitor discharge - 10µF or less, 30V or less.
3. Intrinsic standoff ration is defined by the equation :  $V_P - V_F / V_{B2B1}$   
Where :  $V_P$  = Peak Point Emitter Voltage;  $V_{B2B1}$  = Interbase ;  $V_F$  = Emitter to Base-one Junction Diode Drop (~0.45V @ 10µA)
4. Use pulse techniques : Pulse Width ~300µS, Duty Cycle ≤ 2% to avoid internal heating due to interbase modulation which may result in erroneous readings.



1. EMITTER
2. BASE 1
3. BASE 2

Dim.	A	B	C	D	G	H	J	K	M	N
Min.	5.31	4.52	4.32	0.41	2.54	0.91	0.71	12.7	45°	1.27
Max.	5.84	4.95	5.33	0.48		1.17	1.22			

Dimensions : Millimetres

**Part Number Table**

Description	Part Number
Unijunction Transistor, PN, 2A, TO-18	2N2646

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