2N2646
2N2647

## SILICON UNIJONCTION TRANSISTORS

Silicon Planar Unijunction Transistors have a structure resulting in lower saturation voltage, peak-point current and valley current as well as a much higher base-one peak pulse voltage. In addition, these devices are much faster switches.

The 2N2646 is intended for general purpose industrial applications where circuit economy is of primary importance, and is ideal for use in firing circuits for Silicon Controlled Rectifiers and other applications where a guaranteed minimum pulse amplitude is required. The 2N2647 is intended for applications where a low emitter leakage current and a low peak point emitter current (trigger current) are required and also for triggering high power SCR's.


CASE


## MAXIMUM RATINGS (*)

$\mathrm{T}_{\mathrm{J}}=125^{\circ} \mathrm{C}$ unless otherwise noted

| Symbol | Ratings | 2N2646 | 2N2647 |
| :--- | :--- | :---: | :---: |
| $\mathbf{V}_{\mathbf{B 1 E}}$ | Base 1 - Emitter Voltage | 30 | V |
| $\mathbf{V}_{\mathbf{B 2 E}}$ | Base 2 - Emitter Voltage | 30 | V |
| $\mathbf{I}_{\text {FRMS }}$ | RMS Emitter Current | 50 | mA |
| $\mathbf{I}_{\text {EM }}$ | Emitter Peak Current | 2 | A |
| $\mathbf{P}_{\text {TOT }}$ | Total Power Dissipation | 300 | mW |
| $\mathbf{T}_{\boldsymbol{J}}$ | Maximum Junction | 150 | C |
| $\mathbf{T}_{\text {STG }}$ | Storage Temperature Range | -55 to +175 |  |

## ELECTRICAL CHARACTERISTICS

$\mathrm{T}_{\mathrm{J}}=25^{\circ} \mathrm{C}$ unless otherwise noted, $\mathrm{R}_{\mathrm{GK}}=1000 \Omega$

| Symbol | Ratings | 2N2646-2N2647 |  |  |
| :--- | :--- | :---: | :---: | :---: |
|  | Max |  |  |  |
| $\mathbf{I}_{\text {EO }}$ | Emitter Reverse Current |  | 12 | $\mu \mathrm{~A}$ |
| $\mathbf{V}_{\text {(BR)B1E }}$ | Base 1 - Emitter Breakdown Voltage <br> $\mathbf{I}_{\mathrm{E}}=100 \mu \mathrm{~A}$ | 30 |  | V |

## 2N2646

2N2647

| Symbol | Ratings |  | 2N2646-2N2647 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Min | Max |  |
| $\mathrm{R}_{\text {BBO }}$ | Interbase Resistance$V_{B 1 B 2}=3 \mathrm{~V}$ |  | 4.7 | 9.1 | k $\Omega$ |
| $\eta$ | Intrinsic stand-off ratio$\mathbf{V}_{\mathbf{B} 1 \mathrm{~B} 2}=10 \mathrm{~V}$ | 2N2646 | 0.56 | 0.75 | - |
|  |  | 2N2647 | 0.68 | 0.82 |  |
| $\mathrm{V}_{\text {E(SAT }}$ | Emitter Saturation Voltage $\mathrm{I}_{\mathrm{E}}=50 \mathrm{~mA}, \mathrm{~V}_{\mathrm{B} 1 \mathrm{~B} 2}=10 \mathrm{~V}$ |  | - | 2.5 | V |
| $\mathrm{I}_{\mathrm{v}}$ | Valley Current$\mathrm{V}_{\mathrm{B} 1 \mathrm{~B} 2}=20 \mathrm{~V}$ | 2N2646 | 4 | - | mA |
|  |  | 2N2647 | 8 | - |  |
| $\mathrm{I}_{\mathrm{p}}$ | Peak Current $\mathrm{V}_{\mathrm{B} 1 \mathrm{~B} 2}=25 \mathrm{~V}$ | 2N2646 | - | 5 | $\mu \mathrm{A}$ |
|  |  | 2N2647 | - | 2 |  |

* $V_{\text {DRM }}$ or $\mathbf{V}_{\text {RSM }}$ can be applied for all types on a continuous dc basis without incurring damage.

