

# the [S]cream!

by Guitar Poppa

*The [S]cream is a diode overdrive designed to develop the potential of the classical small green box :*

*The sound is no more necessarily centered on the midrange frequencies.....*

*And one can choose the overdrive texture !*



*The [S]cream, prototype de la version basic, 2016.*

## GENERAL FEATURES

The [S]cream continues the tradition of the Tube Screamers® and related stompboxes: it is built around an operational amplifier submitted to a diode feedback array.

This classic configuration has been redeveloped so as to expand its sonic possibilities:

- The diode array is configurable and adjustable to customize the overdrive texture.
- The tone circuits are switchable and feature three presets : Classic - Brite - Deep

## SUBSETS

### High impedance input Buffer (1M $\Omega$ )

- Separate input stage, ever active, using a low noise silicon transistor BC549B .
- Every guitar can be connected without level and tone losses.
- Low impedance bypass output . The downstream connected pedals will appreciate.

### OpAmp amplification stage

- Resumes and develops classical circuits from the late 70s.
- Ability to choose the OpAmp model when ordering.
- Ability to compute a wide bandwidth (for *Deep* preset).

### Diode array

- Resumes and develops classical circuits from the late 70s.
- The diode array may be homogeneous or combine several different types.
- Ability to choose its composition when ordering.

### Tone stage

- Resumes and develops the original circuit of the the Tube Screamer®
- In Classic mode, the treble is a little less attenuated than in original Tubescreamers®.
- Ability to extend the high frequency range (for *Deep* and *Brite* presets).

# AUDIO PROPERTIES OF THE ACTIVE COMPONENTS

The OpAmp and the diodes determine the texture overdrive. They are to be selected when ordering.

## OpAmp selection

Its first stage provides amplification and overdrive. Its second stage activates the tone filter. Operational amplifiers are more or less nervous or placid according to their generation. (Before or after 1980)...

- **JRC4558** : the old classic, still in production. Rather rustic, it produces a quite hot tone.
- **TLO72** : a good general purpose model from the 80s. Faithful and discreet, it lets the diodes do all the job...
- **NE5532** : low noise modern design from the 80-90s. Bright and nervous, works well with LEDs.

## Diodes selection

The composition of the diode array determines the overdrive texture, interacting with the drive control. Beyond the specific nature of each type of diode, certain combinations provide a remarkable tone.

- **Germanium diodes** (OA90 or 95, 1N34A ...): Very gradual coming into saturation over 200 mV. Coupled two by two in series to provide a standard level. Recommended to get a soft and compressed overdrive.
- **Silicon diodes** (1N914, 1N4148, 1N4448 ...): Intense coming into saturation over 600mV. Typical sound of the late 70s. The effects of silicon and germanium diodes are mixable.
- **LEDs** (red models): Late coming into saturation over 1600mV, which lets a significant headroom of clear sound below saturation. Wide dynamic, incisive tone. Even more nervous with a fast OpAmp, working 12V. The LEDs can be advantageously combined with silicon diodes.

## Remarkable combinations

- **Silicon + Germanium**  
Silicon brings roughness and harmonics ; germanium softens the texture and compresses the dynamic ...
- **Leds + Silicon**  
LEDs bring an incisive tone before saturation ; Silicon compresses and products a more bushy texture.

## Mixing means

- **Basic version** : Internal trimmer adjusting the texture permanently. (see in the picture above)
- **\*\*\* Version** : Dedicated potentiometer on the front, allowing instantaneous and multiple settings. In this version, the preset selector is moved to the left side of the pedal.

# TONE PRESETS

## 3 presets are available, identical in the two *basic* and *\*\*\** versions

- **Classic** : The preamps and filters circuits restore classic references of the 70s-80s, with a frequency response typically centered around 700Hz. For historical rock, and very or too bright amps.
- **Brite** : Opened treble and bell top moved to 900Hz. For too dull amps. The sound is more airy and grainy. Low frequencies remain limited to 300Hz, to avoid slurred effect.
- **Deep** : Bandwidth expanded from 120 to 3000 Hz at -3dB, more adapted to a post 80s tonal culture. Overdrive has a more modern tone, with a sturdy texture, widened but keeping compact.

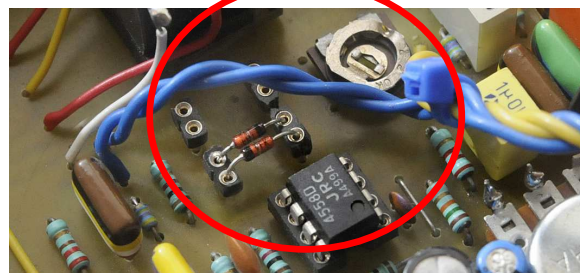
# POWER SUPPLY

**The [S]cream works with a 9V battery, or an external power supply, 7 to 12V.**  
Coaxial 2.1mm socket, center negative. Battery life: at least 100 to 140 hours, LED lighted.

**A internal active filter eliminates most of residual hum and hiss.**  
The [S]cream works with all common transformer or switching power supplies.



The [S]cream, prototype de 2015. Vu de la carte imprimée.



JRC4558 OpAmp and 1N914 silicon diodes.

*The diodes are mounted on holders and are interchangeable. A second set of diodes can be mounted on the free holder, and is mixable with the main array, in order to define custom grain and dynamics ...*