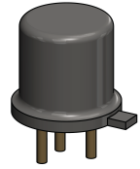
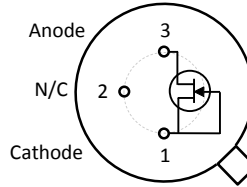


# U556, U557 Current Regulator Diode

## Features

- InterFET [N0016H Geometry](#)
- Low Noise: 5 nV/VHz Typical
- Low Capacitance: 2pF Typical
- RoHS Compliant
- SMT, TH, and Bare Die Package options.

TO-18 Bottom View



## Applications

- Current Regulation
- Current Limiting
- Biasing

## Description

The 50V InterFET U556 and U557 JFET's are targeted for current regulation and limiting applications. The TO-18 package is hermetically sealed and suitable for military applications.

## Product Summary

Parameters	U556 Min	U557 Min	Unit
V <sub>OP</sub> Peak Operating Voltage	50	50	V
I <sub>F</sub> Regulator Current	2.4	3.6	mA
V <sub>L</sub> Limiting Voltage	0.75 (typ)	1.5 (typ)	V

## Ordering Information Custom Part and Binning Options Available

Part Number	Description	Case	Packaging
U556; U557	Through-Hole	TO-92-2L	Bulk
SMPU556; SMPU557	Surface Mount	SOT23	Bulk
SMPU556TR; SMPU557TR	7" Tape and Reel: Max 3,000 Pieces 13" Tape and Reel: Max 9,000 Pieces	SOT23	Minimum 1,000 Pieces Tape and Reel
U556COT; U557COT	Chip Orientated Tray (COT Waffle Pack)	COT	400/Waffle Pack
U556CFT; U557CFT	Chip Face-up Tray (CFT Waffle Pack)	CFT	400/Waffle Pack



**Disclaimer:** It is the Buyers responsibility for designing, validating and testing the end application under all field use cases and extreme use conditions. Guaranteeing the application meets required standards, regulatory compliance, and all safety and security requirements is the responsibility of the Buyer. These resources are subject to change without notice.

## Electrical Characteristics

### Maximum Ratings (@ $T_A = 25^\circ\text{C}$ , Unless otherwise specified)

Parameters	Value	Unit
$V_{OP}$ Peak Operating Voltage	50	V
$I_{FG}$ Continuous Forward Gate Current	50	mA
$P_D$ Continuous Device Power Dissipation	360	mW
$P$ Power Derating	2.88	mW/ $^\circ\text{C}$
$T_J$ Operating Junction Temperature	-55 to 135	$^\circ\text{C}$
$T_{STG}$ Storage Temperature	-55 to 135	$^\circ\text{C}$

### Static Characteristics (@ $T_A = 25^\circ\text{C}$ , Unless otherwise specified)

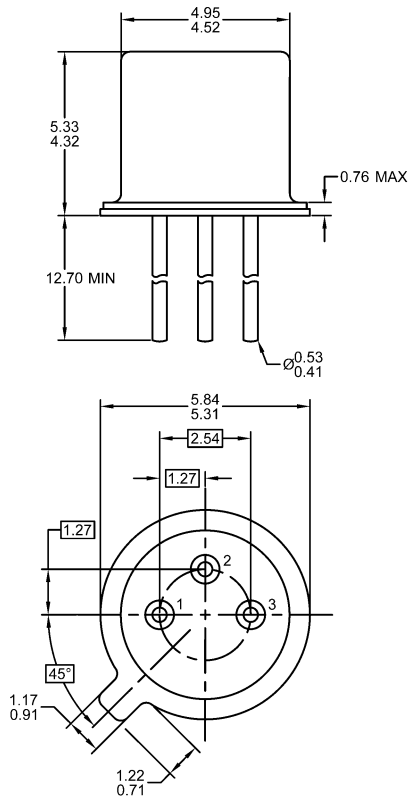
Parameters	Conditions	U556			U557			Unit
		Min	Typ	Max	Min	Typ	Max	
$I_F$ Regulator Current	$V_F = 25\text{V}$	2.4	3	3.8	3.6	4.5	5.3	mA
$V_L$ Limiting Voltage	$I_F = 0.9 I_{F(MIN)}$		0.75	2.6		1.5	3	V
$V_{OP}$ Peak Operating Voltage	$I_F = 1.1 I_{F(MAX)}$	50			50			V

### Dynamic Characteristics (@ $T_A = 25^\circ\text{C}$ , Unless otherwise specified)

Parameters	Conditions	U556			U557			Unit
		Min	Typ	Max	Min	Typ	Max	
ZD Dynamic Impedance	$V_F = 25\text{V}$ , $f = 1\text{kHz}$		1.0			0.6		$\text{M}\Omega$
ZK Knee Impedance	$V_F = 6\text{V}$ , $f = 1\text{kHz}$		0.09			0.06		$\text{M}\Omega$

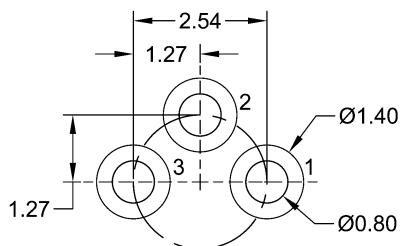
## TO-18 Mechanical and Layout Data

### Package Outline Data



1. All linear dimensions are in millimeters.
2. Package weight approximately 0.29 grams
3. Bulk product is shipped in standard ESD shipping material
4. Refer to JEDEC standards for additional information.

### Suggested Through-Hole Layout



1. All linear dimensions are in millimeters.
2. The suggested land pattern dimensions have been provided as a straight lead reference only. A more robust pattern may be desired for wave soldering and/or bent lead configurations.