

U553, U554, U555 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.

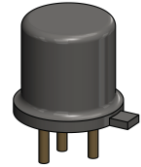
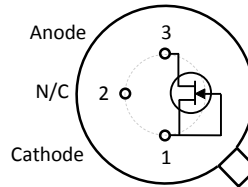
Applications

- Current Regulation
- Current Limiting
- Biasing

Description

The 50V InterFET U553, U554, and U555 JFET's are targeted for current regulation and limiting applications. The TO-18 package is hermetically sealed and suitable for military applications.

TO-18 Bottom View



Product Summary

Parameters	U553 Min	U554 Min	U555 Min	Unit
V _{OP} Peak Operating Voltage	50	50	50	V
I _F Regulator Current	0.18	0.6	1.4	mA
V _L Limiting Voltage	0.75 (typ)	0.55 (typ)	0.75 (typ)	V

Ordering Information Custom Part and Binning Options Available

Part Number	Description	Case	Packaging
U553; U554; U555	Through-Hole	TO-92-2L	Bulk
SMPU553; SMPU554; SMPU555	Surface Mount	SOT23	Bulk
SMPU553TR; SMPU554TR; SMPU555TR	7" Tape and Reel: Max 3,000 Pieces 13" Tape and Reel: Max 9,000 Pieces	SOT23	Minimum 1,000 Pieces Tape and Reel
U553COT; U554COT; U555COT	Chip Orientated Tray (COT Waffle Pack)	COT	400/Waffle Pack
U553CFT; U554CFT; U555CFT	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)

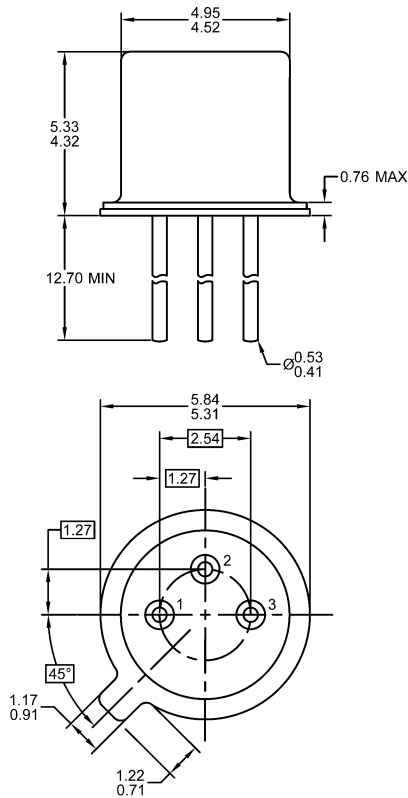
Parameters	Conditions	U553			U554			U555			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
I_F Regulator Current	$V_F = 25\text{V}$	0.18	0.5	0.75	0.6	1	1.6	1.4	2	2.6	mA
V_L Limiting Voltage	$I_F = 0.9 I_{F(MIN)}$		0.75	1.3		0.55	1.75		0.75	2.15	V
V_{OP} Peak Operating Voltage	$I_F = 1.1 I_{F(MAX)}$	50			50			50			V

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

Parameters	Conditions	U553			U554			U555			Unit
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
ZD Dynamic Impedance	$V_F = 25\text{V}$, $f = 1\text{kHz}$		13			5			1.8		$\text{M}\Omega$
ZK Knee Impedance	$V_F = 6\text{V}$, $f = 1\text{kHz}$		1			0.4			0.17		$\text{M}\Omega$

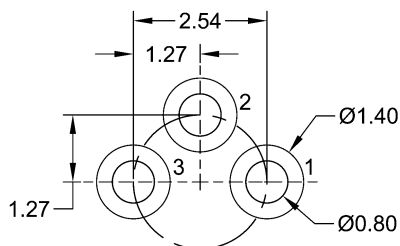
TO-18 Mechanical and Layout Data

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.

Mouser Electronics

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