



STDD15-07P6

LOW CAPACITANCE DETECTION DIODE

PRELIMINARY DATASHEET

MAIN PRODUCT CHARACTERISTICS

$I_{F(AV)}$	10 mA
V_{RRM}	15 V
$T_j (max)$	150 °C
$V_F (max)$	0.51 V

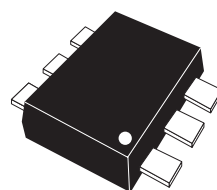
FEATURES AND BENEFITS

- Low diode capacitance
- Device designed for RF application
- Low profile package
- 40% space saving versus SOT-323
- Very low parasitic inductor & resistor

DESCRIPTION

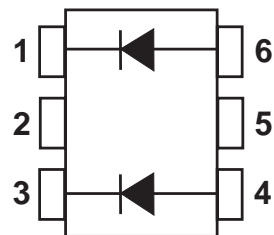
The STDD15-07P6 is a dual diode series for the detection of a RF signal and the compensation of the voltage drift with the temperature. The SOT-666 package makes the device ideal in application where the space saving is critical like mobile phones.

The low junction capacitance will reduce the disturbance on the RF signal.



SOT-666

SCHEMATIC DIAGRAM

Parallel configuration
STDD15-07P6

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive peak reverse voltage		15	V
I_F	Continuous forward current		10	mA
I_{FSM}	Surge non repetitive forward current	Half wave, single phase, 60Hz	2	A
T_{stg}	Storage temperature range		- 65 + 150	°C
T_j	Maximum operating junction temperature		150	°C

THERMAL PARAMETERS

Symbol	Parameter	Value	Unit
$R_{th(j-a)}^*$	Junction to ambient	400	°C/W

*: Mounted with minimum recommended pad size, PC board FR4.

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = 1\text{V}$			0.035	μA
		$T_j = 125^\circ\text{C}$			6	30	
		$T_j = 25^\circ\text{C}$	$V_R = 15\text{V}$			0.23	μA
		$T_j = 125^\circ\text{C}$			20	100	
V_F^*	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 1\text{mA}$		350	380	mV
		$T_j = 125^\circ\text{C}$			230	260	
		$T_j = 25^\circ\text{C}$	$I_F = 10\text{mA}$		500	570	
		$T_j = 125^\circ\text{C}$			460	510	

* Pulse test: $t_p \leq 250\mu\text{s}$, $\delta \leq 2\%$

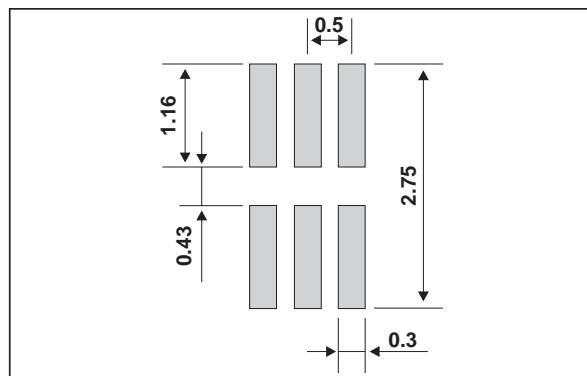
ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
C_T	Diode capacitance	$V_R = 0\text{V}$	$F = 1\text{MHz}$			1.0	pF
R_F	Forward resistance	$I_F = 5\text{mA}$	$F = 100\text{MHz}$		15		Ω
L_s	Series inductance				1.5		nH

PACKAGE MECHANICAL DATA **SOT-666**

REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.50	0.60	0.020	0.024
bp	0.17	0.27	0.007	0.011
c	0.08	0.18	0.003	0.007
D	1.50	1.70	0.060	0.067
E	1.10	1.30	0.043	0.051
e	1.00		0.040	
e1	0.50		0.020	
He	1.50	1.70	0.059	0.067

FOOTPRINT DIMENSIONS (in millimeters)



Note: The device fulfills the MSL level 1 after leadfree soldering profile.

Ordering code	Marking	Package	Weight	Base qty	Delivery mode
STDD15-07P6	.5	SOT-666	2.9 mg	3000	Tape & reel

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics.

All other names are the property of their respective owners.

© 2003 STMicroelectronics - All rights reserved.

STMicroelectronics GROUP OF COMPANIES

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany -
 Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain -
 Sweden - Switzerland - United Kingdom - United States

www.st.com

