



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

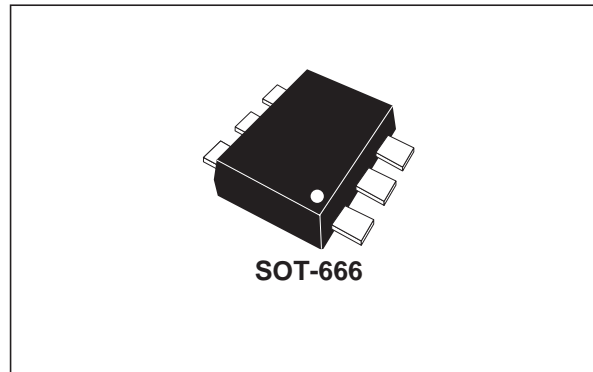
FEATURES AND BENEFITS

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

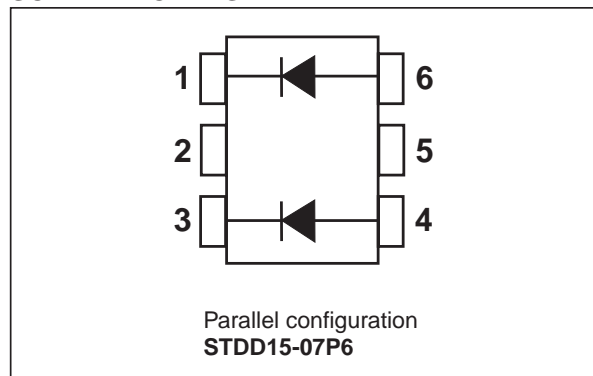
DESCRIPTION

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.



SCHEMATIC DIAGRAM



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	

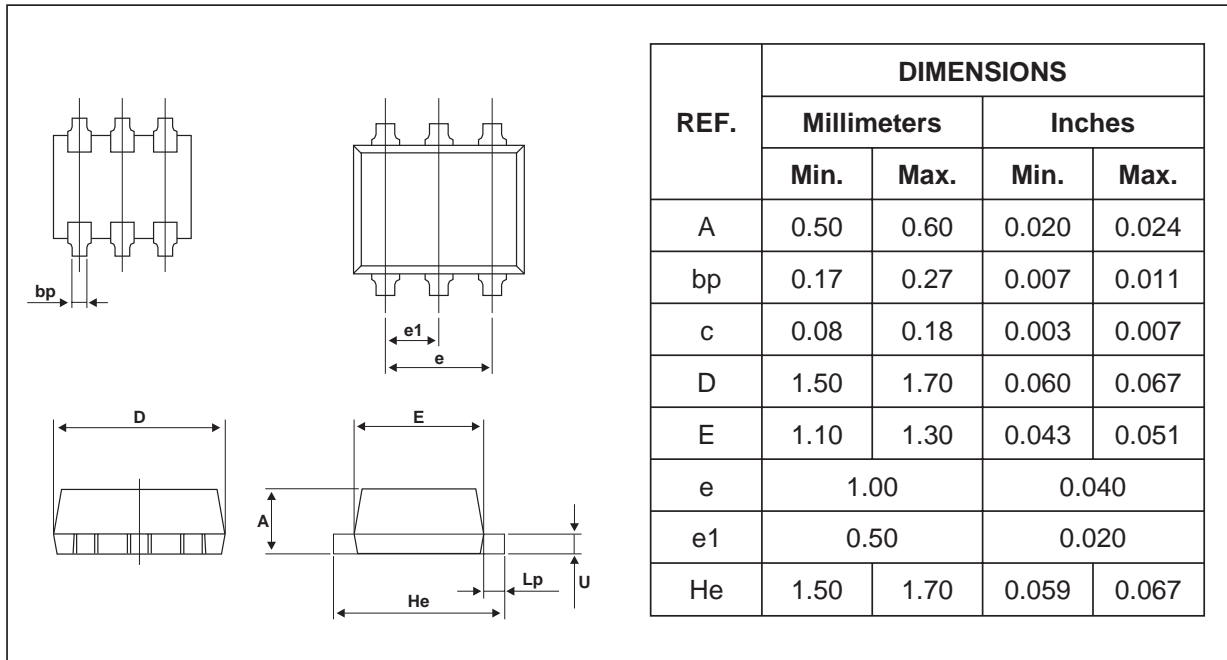
* Pulse test: $t_p \leq 250\mu\text{s}$, $\delta \leq 2\%$

ELECTRICAL CHARACTERISTICS

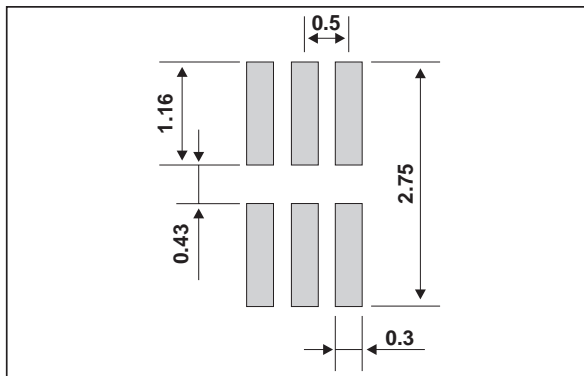
Symbol	Parameter	Tests conditions		Min.	Typ.	Max.	Unit
C_T	Diode capacitance	$V_R = 0\text{V}$	$F = 1\text{MHz}$			1.0	pF
R_F	Forward resistance	$I_F = 5\text{mA}$	$F = 100\text{MHz}$		15		Ω
L_s	Series inductance				1.5		nH

PACKAGE MECHANICAL DATA

SOT-666



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

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