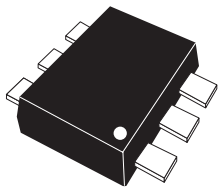
STDD15-07P6

LOW CAPACITANCE DETECTION DIODE

PRELIMINARY DATASHEET

MAIN PRODUCT CHARACTERISTICS

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



SOT-666

FEATURES AND BENEFITS

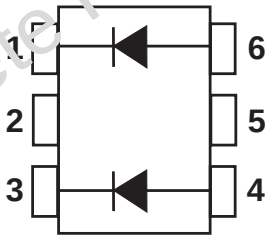
- Low diode capacitance
- Device designed for RF application
- Low profile package
- 40% space saving versus SOT-323
- Very low parasitic inductor & resistor

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



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
Tj	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	Tj = 25°C	V_R = 1V			0.035	µA
		Tj = 125°C			6	30	
		Tj = 25°C	V_R = 15V			0.23	µA
		Tj = 125°C			20	100	
V_F*	Forward voltage drop	Tj = 25°C	I_F = 1 mA		350	380	mV
		Tj = 125°C			230	260	
		Tj = 25°C	I_F = 10 mA		500	570	
		Tj = 125°C			460	510	

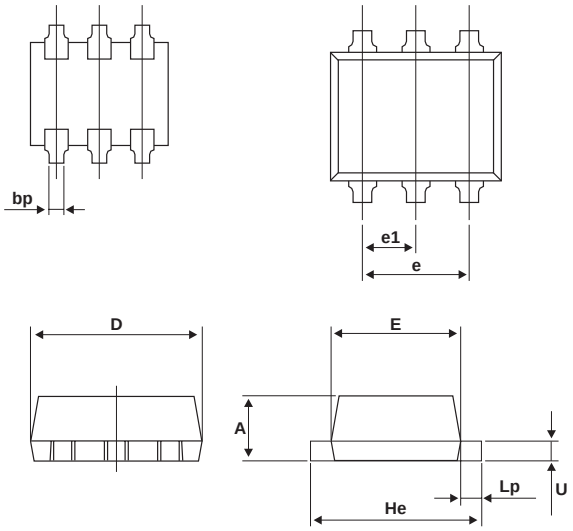
* Pulse test: tp ≤ 250µs, δ ≤ 2%

ELECTRICAL CHARACTERISTICS

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

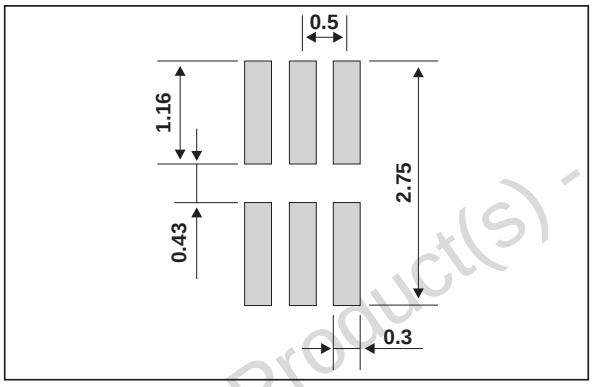
PACKAGE MECHANICAL DATA

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