

Silicon Abrupt Tuning Varactor Diodes

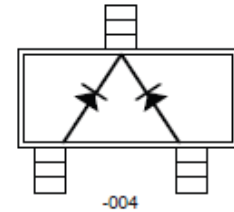
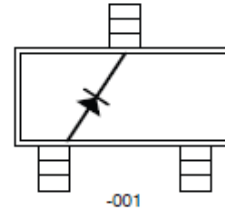
Rev. V1

Features

- Wide Selection of Capacitance Ranges
- High Q Factor
- Small and High Volume Commercial Applications
- RoHS* Compliant

Description

The MSV1400-x Series of abrupt tuning varactors provide extremely high Q and low series resistance available in a 30 volt silicon diode. These devices are available in single junction, common anode and common cathode configurations.



Electrical Specifications:

$T_C = +25^\circ\text{C}$, $V_{BR} = 30\text{ V min. @ } 10\text{ }\mu\text{A}$, $I_R = 50\text{ nA max. @ } 24\text{ V}$

Part Number	Total Capacitance (C_T)		Capacitance Ratio (C_R)	Series Resistance (R_S)	Quality Factor (Q)
	$V_R = 1\text{ V, } 1\text{ MHz}$		C_{T0} / C_{T30}	50 MHz	$V_R = 4\text{ V, } 50\text{ MHz}$
	pF		Ratio	Ω	
	Min.	Max.	Min.	Max.	Min.
MSV1400-08-001 MSV1400-108-004	1.62	1.98	4.1	0.60	2900
MSV1400-09-001 MSV1400-109-004	1.98	2.42	4.1	0.50	2800
MSV1400-10-001 MSV1400-110-004	2.43	2.97	4.2	0.45	2600
MSV1400-11-001 MSV1400-111-004	2.97	3.63	4.2	0.40	2500
MSV1400-13-001 MSV1400-113-004	3.51	4.29	4.2	0.35	2400
MSV1400-14-001 MSV1400-114-004	4.23	5.17	4.2	0.30	2200
MSV1400-15-001 MSV1400-115-004	5.04	6.16	4.3	0.27	2100
MSV1400-16-001 MSV1400-116-004	6.12	7.48	4.3	0.24	2000
MSV1400-17-001 MSV1400-117-004	7.38	9.02	4.3	0.22	1800
MSV1400-19-001	9.00	11.0	4.4	0.20	1600
MSV1400-20-001	10.8	13.2	4.4	0.18	1500
MSV1400-21-001	13.5	16.5	4.4	0.18	1200
MSV1400-22-001	16.2	19.8	4.4	0.18	1000

1 * Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

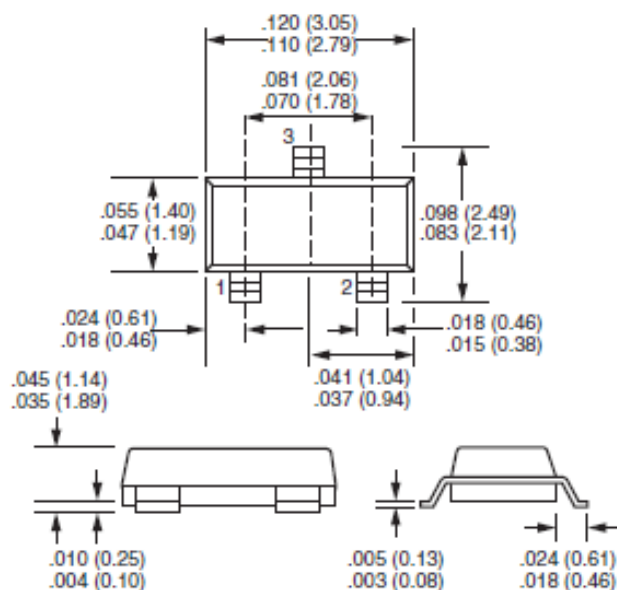
Absolute Maximum Ratings

Parameter	Absolute Maximum
Power Dissipation	250 mW
Operating Temperature	-55°C to +125°C
Storage Temperature	-65°C to +200°C

ESD & Moisture Sensitivity Level Rating

As are all semiconductors, silicon hyperabrupt tuning varactor diode are susceptible to damage from ESD events. Proper ESD prevention procedures should be followed. The ESD rating for these devices is Class 0 (HBM).

Outline Drawing - SOT23



Lead Material = Alloy 42
 Lead Finish = Tin-Lead, 60-40%
 Maximum Soldering Temperature = 260°C for 5 sec.
 Minimum Lead Strength = 2 pounds pull
 Typical Package Inductance = 2 nH
 Typical Package Capacitance = 0.10 pF (opposite leads)

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