# Low-leakage switching diode RLS139

# Applications

High speed switching

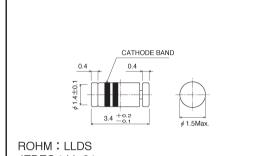
# Features

- 1) High reliability.
- 2) Small surface mounting type. (LLDS (LL-34))
- The typical reverse current is extremely low of 0.45nA.

# Construction

Silicon epitaxial planar

# External dimensions (Units: mm)



HOHM: LLDS JEDEC: LL-34

Common: mini-MELF

# Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Peak reverse voltage	V <sub>RM</sub>	90	V
DC reverse voltage	VR	80	V
Peak forward current	Іғм	400	mA
Mean rectifying current	lo	130	mA
Surge current (1 μs)	Isurge	600	mA
Power dissipation	Р	300	mW
Junction temperature	Tj	175	°C
Storage temperature	Tstg	<b>−65∼+</b> 175	°C

### Cathode band colors

	Туре	1st Color Band	2nd Color Band	
F	RLS139	Gray	Gray	

# • Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Forward voltage	VF	_	1.0	1.2	V	I <sub>F</sub> =100mA
Reverse current	IR	_	0.45	20	nA	V <sub>R</sub> =30V
Capacitance between terminals	Ст	_	2	5	pF	V <sub>R</sub> =0.5V, f=1MHz
Reverse recovery time	trr	_	30	50	ns	V <sub>R</sub> =6V, I <sub>F</sub> =10mA, R <sub>L</sub> =50Ω

#### Electrical characteristic curves (Ta = 25°C unless specified otherwise) (PF) 100 50 100° 100 f=1MHz TERMINALS: CT FORWARD CURRENT: IF (mA) (nA) 50 20 CURRENT: In 75°C 10 20 10 BETWEEN 5 50°C 2 REVERSE Ta=25℃ 0.5 CAPACITANCE 0.2 0.2 0.1 0.2 0.4 0.6 0.8 1.0 1.2 1.4 10 15 20 25 30 35 10 15 20 25 REVERSE VOLTAGE: VR (V) FORWARD VOLTAGE: VF (V) REVERSE VOLTAGE: VR (V) Fig. 2 Reverse characteristics Fig. 1 Forward characteristics Fig. 3 Capacitance between terminals characteristics 100 100 VR=6V n=20 Ta=25°C Irr=1/10IR (ns) CURRENT: Isurge (A) REVERSE RECOVERY TIME: trr 100 P=50% Io CURRENT P=10% 50 P=0.03% SURGE 25 100m**∟** 10 *µ* 20 100 μ 25 50 100 150 FORWARD CURRENT: IF (mA) PULSE WIDTH: Tw (S) AMBIENT TEMPERATURE: Ta (℃) Fig. 6 Derating curve Fig. 4 Reverse recovery time Fig. 5 Surge current characteristics (mounting on glass epoxy PCBs) characteristics 0.01 μF D.U.T. 5Ω PULSE GENERATOR SAMPLING OUTPUT 50 Ω OSCILLOSCOPE INPUT 100ns OUTPUT

Fig. 7 Reverse recovery time (trr) measurement circuit

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