## Silicon Epitaxial Planar Switching Diode

Applications

• High-speed switching

This diode is also available in MiniMELF case with the type designation LL4148

Max. Ø0.5

Min. 27.5

Max. Ø1.9

Black Cathode Band

Black Part No.

XXX

Max. 3.9

Min. 27.5
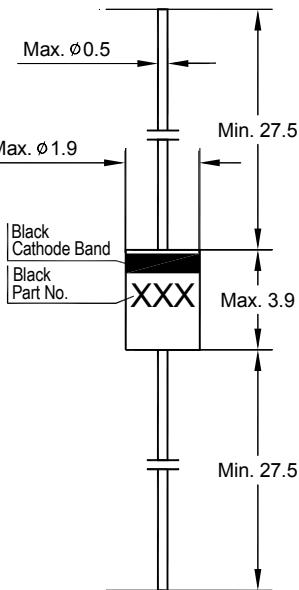
Glass Case DO-35
Dimensions in mm

Max. Ø0.45

Min. 27.5

Max. Ø1.9

Black Cathode Band

Black Part No.

XXX

Max. 2.9

Min. 27.5
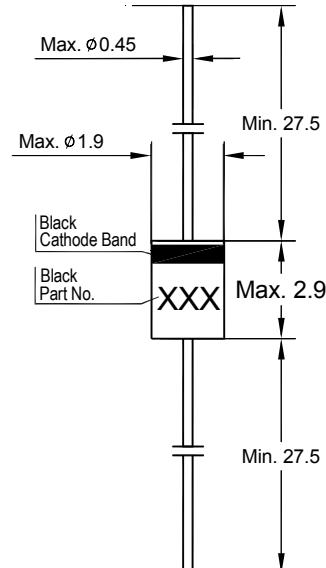
Glass Case DO-34
Dimensions in mm

Absolute Maximum Ratings (T_a = 25℃)

Parameter		Symbol	Value	Unit
Peak Reverse Voltage		V_{RM}	100	V
Reverse Voltage		V_R	75	V
Average Rectified Forward Current		$I_{F(AV)}$	200	mA
Non-repetitive Peak Forward Surge Current	at t = 1 s at t = 1 ms at t = 1 µs	I_{FSM}	0.5 1 4	A
Power Dissipation		P_{tot}	500 [1]	mW
Junction Temperature		T_j	200	℃
Storage Temperature Range		T_{stg}	- 65 to + 200	℃

[1] Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.

Characteristics at T_a = 25℃

Parameter	Symbol	Min.	Max.	Unit

Reverse Breakdown Voltage
  at I_R = 100 μA
  at I_R = 5 μA
	$V_{(BR)R}$
	$V_{(BR)R}$
		100
		75
			-
			-
				V
				V

Forward Voltage at I_F = 10 mA	V_F	-	1	V

Leakage Current
  at V_R = 20 V
  at V_R = 75 V
  at V_R = 20 V, T_j = 150℃
	I_R
	I_R
	I_R
		-
		-
		-
			25
			5
			50
				nA
				μA
				μA

Capacitance at V_R = 0, f = 1 MHz	C_{tot}	-	4	pF

Voltage Rise when Switching ON
  tested with 50 mA Forward Pulses
  tp = 0.1 s, Rise Time < 30 ns, fp = 5 to 100 KHz
	V_{fr}	-	2.5	V

Reverse Recovery Time
  at I_F = 10 mA to I_R = 1 mA, Irr = 0.1 x I_R, V_R = 6 V,
  R_L = 100 Ω
	t_{rr}	-	4	ns

Thermal Resistance Junction to Ambient Air	R_{thA}	-	0.35 [1]	K/mW
Rectification Efficiency at f = 100 MHz, V_{RF} = 2 V	$η_V$	0.45	-	-

[1] Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.
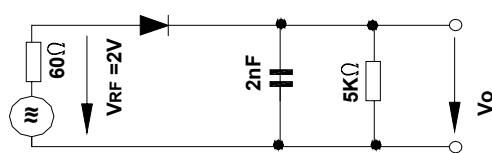
Rectification Efficiency Measurement Circuit

Admissible power dissipation versus ambient temperature

Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature

1N 4148

P_{tot} (mW) vs T_{amb}

Relative capacitance versus reverse voltage

1N 4148

$T_j = 25\,^{O}C$
$f = 1MHz$

$\dfrac{C_{tot}(V_R)}{C_{tot}(0V)}$ vs V_R

Leakage current versus junction temperature

1N 4148

I_R (nA) vs T_j

$V_R = 20V$

Forward characteristics

1N 4148

i_F (mA) vs V_F

$T_j = 100^{O}C$ $T_j = 25^{O}C$