

MCL4151-TR Datasheet

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DiGi Electronics Part Number	MCL4151-TR-DG
Manufacturer	Vishay General Semiconductor - Diodes Division
Manufacturer Product Number	MCL4151-TR
Description	DIODE GP 75V 200MA MICROMELF
Detailed Description	Diode 75 V 200mA Surface Mount MicroMELF

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Purchase and inquiry

Manufacturer Product Number:

MCL4151-TR

Series:

-

Technology:

Standard

Current - Average Rectified (Io):

200mA

Speed:

Small Signal =< 200mA (Io), Any Speed

Current - Reverse Leakage @ Vr:

50 nA @ 50 V

Grade:

Automotive

Mounting Type:

Surface Mount

Supplier Device Package:

MicroMELF

Base Product Number:

MCL4151

Manufacturer:

Vishay General Semiconductor - Diodes Division

Product Status:

Active

Voltage - DC Reverse (Vr) (Max):

75 V

Voltage - Forward (Vf) (Max) @ If:

1 V @ 50 mA

Reverse Recovery Time (trr):

4 ns

Capacitance @ Vr, F:

2pF @ 0V, 1MHz

Qualification:

AEC-Q101

Package / Case:

2-SMD, No Lead

Operating Temperature - Junction:

125°C (Max)

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0070

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Electrical data identical with the device 1N4151
- MicroMELF package
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

- Extreme fast switches

LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: MicroMELF

Weight: approx. 12 mg

Cathode band color: black

Packaging codes / options:

TR3/10K per 13" reel (8 mm tape), 10K/box

TR/2.5K per 7" reel(8 mm tape), 12.5K/box

PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	CIRCUIT CONFIGURATION	REMARKS
MCL4151	$V_{RRM} = 75\text{ V}$	MCL4151-TR3 or MCL4151-TR	Single	Tape and reel

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		V_{RRM}	75	V
Reverse voltage		V_R	50	V
Peak forward surge current	$t_p = 1\text{ }\mu\text{s}$	I_{FSM}	2	A
Repetitive peak forward current		I_{FRM}	450	mA
Forward continuous current		I_F	200	mA
Average forward current	$V_R = 0$	$I_{F(AV)}$	150	mA
Power dissipation		P_{tot}	500	mW

THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	Mounted on epoxy-glass hard tissue, fig. 4, 35 μm copper clad, 0.9 mm^2 copper area per electrode	R_{thJA}	500	K/W
Junction temperature		T_j	175	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	-65 to +175	$^{\circ}\text{C}$



ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 50 mA	V _F		0.880	1	V
Reverse current	V _R = 50 V	I _R			50	nA
	V _R = 50 V, T _j = 150 °C	I _R			50	μA
Breakdown voltage	I _R = 5 μA, t _p /T = 0.01, t _p = 0.3 ms	V _(BR)	75			V
Diode capacitance	V _R = 0 V, f = 1 MHz, V _{HF} = 50 mV	C _D			2	pF
Reverse recovery time	I _F = I _R = 10 mA, i _R = 1 mA	t _{rr}			4	ns
	I _F = 10 mA, V _R = 6 V, i _R = 0.1 x I _R , R _L = 100 Ω				2	

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

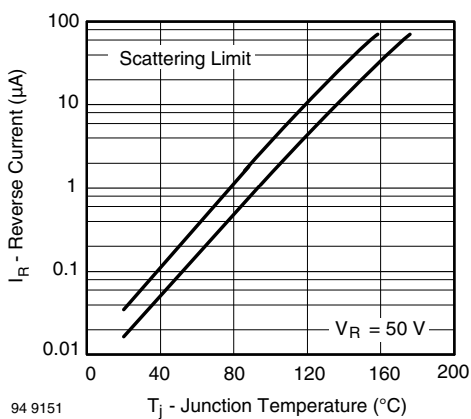


Fig. 1 - Reverse Current vs. Junction Temperature

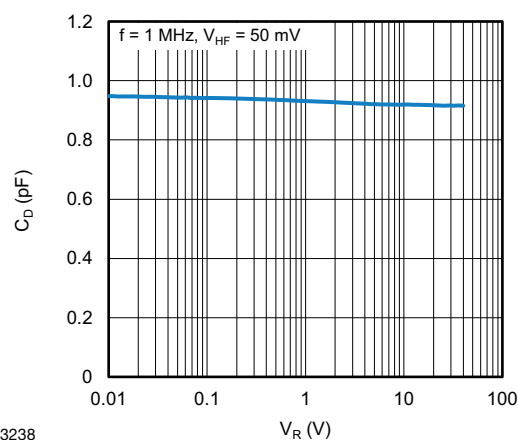


Fig. 3 - Typical Capacitance vs. Reverse Voltage

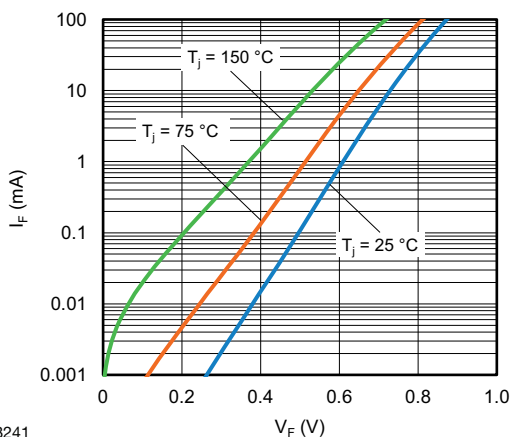


Fig. 2 - Forward Current vs. Forward Voltage

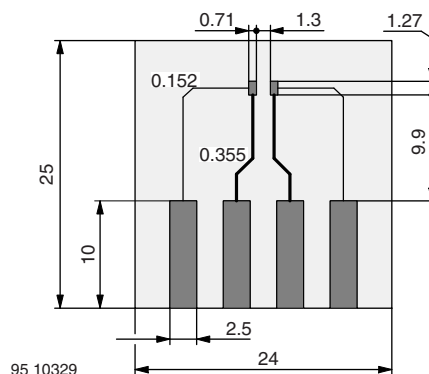
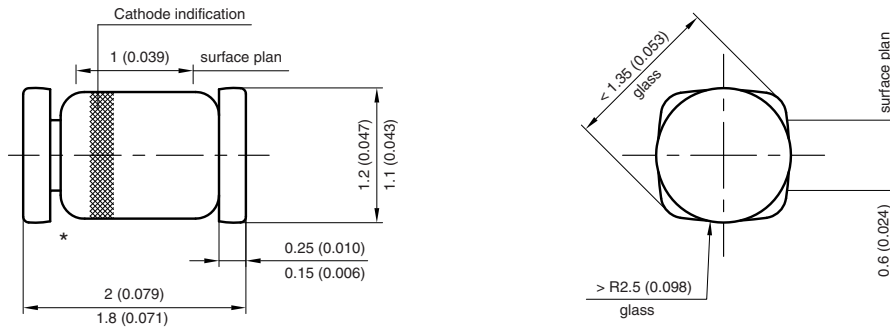


Fig. 4 - Board for R_{thJA} Definition (in mm)

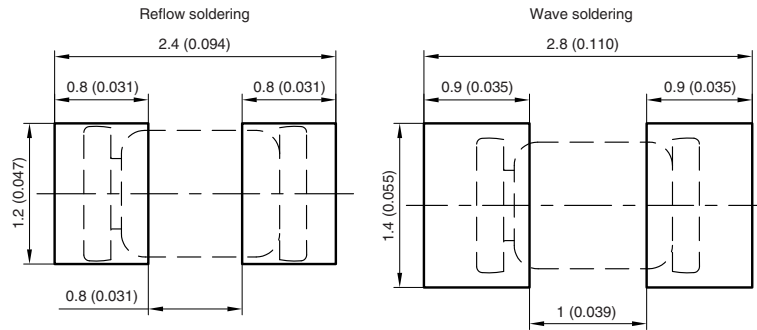


PACKAGE DIMENSIONS in millimeters (inches): **MicromELF**



* The gap between plug and glass can be either on cathode or anode side

Foot print recommendation:



Created - Date: 26.July.1996
 Rev. 13 - Date: 07.June.2006
 Document no.:6.560-5007.01-4
 96 12072



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