

MR2535

Overvoltage Transient Suppressors

Medium Current

Designed for applications requiring a low voltage rectifier with reverse avalanche characteristics for use as reverse power transient suppressors. Developed to suppress transients in the automotive system, these devices operate in the forward mode as standard rectifiers or reverse mode as power avalanche rectifier and will protect electronic equipment from overvoltage conditions.

- Avalanche Voltage 24 to 32 Volts
- High Power Capability
- Economical
- Increased Capacity by Parallel Operation

Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 2.5 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Maximum Lead Temperature for Soldering Purposes: 350°C 3/8" from Case for 10 Seconds at 5 lbs. Tension
- Polarity: Indicated by Diode Symbol or Cathode Band
- Marking: MR2535L

MAXIMUM RATINGS (T_J = 25°C unless otherwise noted)

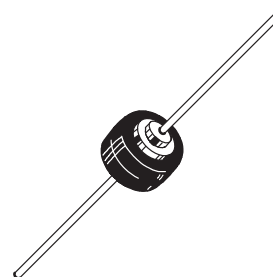
Rating	Symbol	Value	Unit
DC Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	20	Volts
Repetitive Peak Reverse Surge Current (Time Constant = 10 ms, Duty Cycle ≤ 1%, T _C = 25°C) (See Note 1)	I _{RSM}	62	Amps
Average Rectified Forward Current (Single Phase, Resistive Load, 60 Hz, T _C = 125°C) (See Figure 4)	I _O	6.0	Amps
Non-Repetitive Peak Surge Current Surge Supplied at Rated Load Conditions Halfwave, Single Phase	I _{FSM}	600	Amps
Operating and Storage Junction Temperature Range	T _J , T _{stg}	-65 to +175	°C



ON Semiconductor

Formerly a Division of Motorola

<http://onsemi.com>



**L SUFFIX
CASE 194
STYLE 1**

ORDERING INFORMATION

Device	Package	Shipping
MR2535L	Axial-Lead Button	1000/Box
MR2535LRL	Axial-Lead Button	800/Reel

MR2535

THERMAL CHARACTERISTICS

Characteristic	Lead Length	Symbol	Max	Unit
Thermal Resistance, Junction to Lead @ Both Leads to Heat Sink, Equal Length	1/4" 3/8" 1/2"	R _{θJL}	7.5 10 13	°C/W
Thermal Resistance Junction to Case		R _{θJC}	0.8*	°C/W

*Typical

ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Instantaneous Forward Voltage ⁽¹⁾ (i _F = 100 Amps, T _C = 25°C)	V _F	—	1.1	Volts
Reverse Current (V _R = 20 Vdc, T _C = 25°C)	I _R	—	200	nA _{dc}
Breakdown Voltage ⁽¹⁾ (I _R = 100 mA _{dc} , T _C = 25°C)	V _(BR)	24	32	Volts
Breakdown Voltage ⁽¹⁾ (I _R = 90 Amp, T _C = 150°C, PW = 80 μs)	V _(BR)	—	40	Volts
Breakdown Voltage Temperature Coefficient	V _{(BR)TC}	—	0.096*	%/°C
Forward Voltage Temperature Coefficient @ I _F = 10 mA	V _{FTC}	—	2*	mV/°C

(1) Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.

*Typical

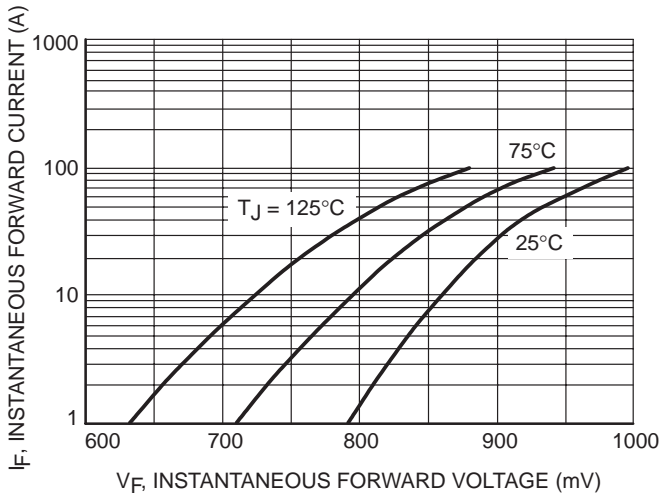


Figure 1. Typical Forward Voltage

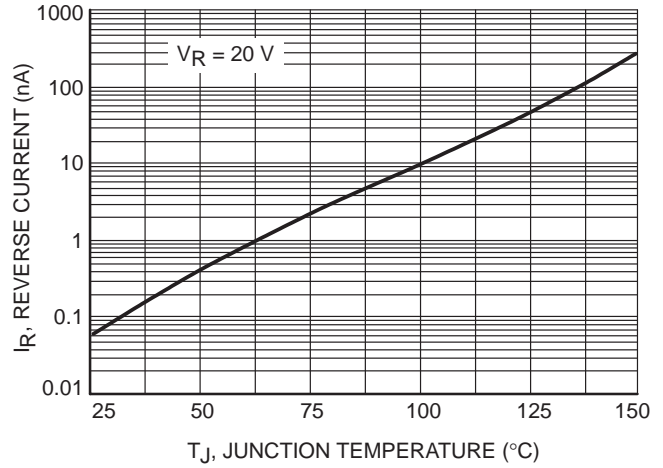


Figure 2. Typical Reverse Current versus Junction Temperature

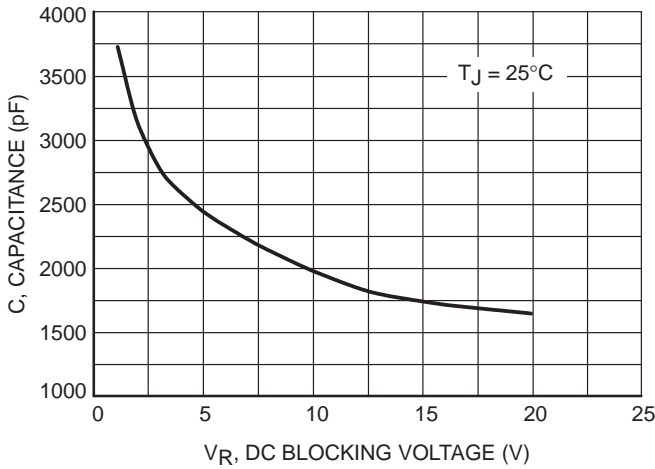


Figure 3. Typical Capacitance

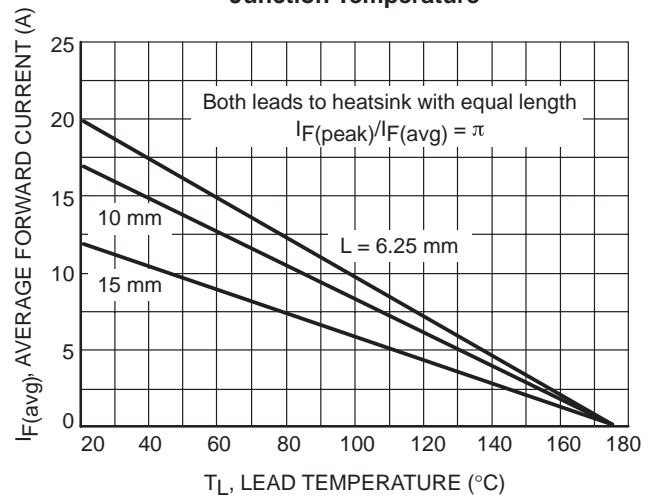


Figure 4. Maximum Current Ratings

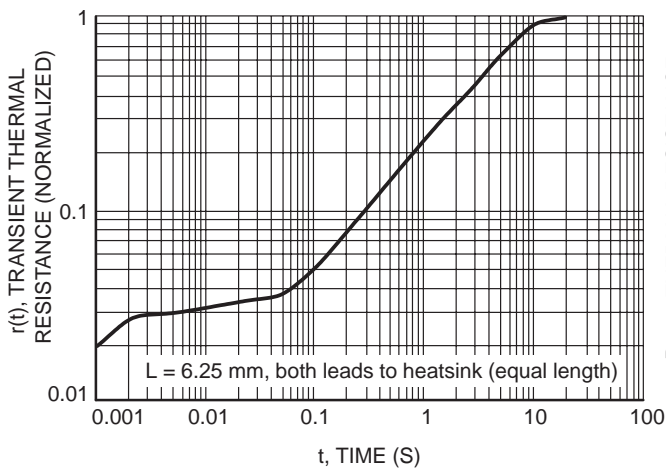


Figure 5. Thermal Response

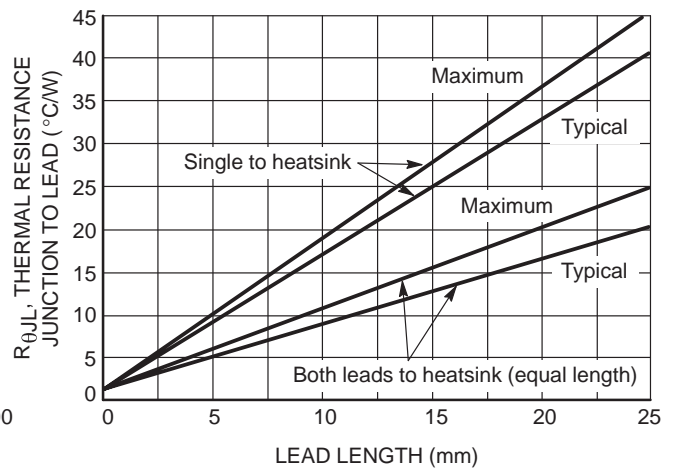


Figure 6. Steady State Thermal Resistance

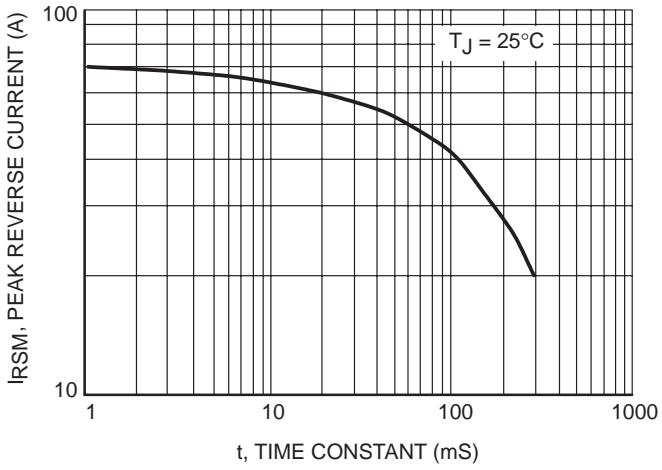


Figure 7. Maximum Peak Reverse Current

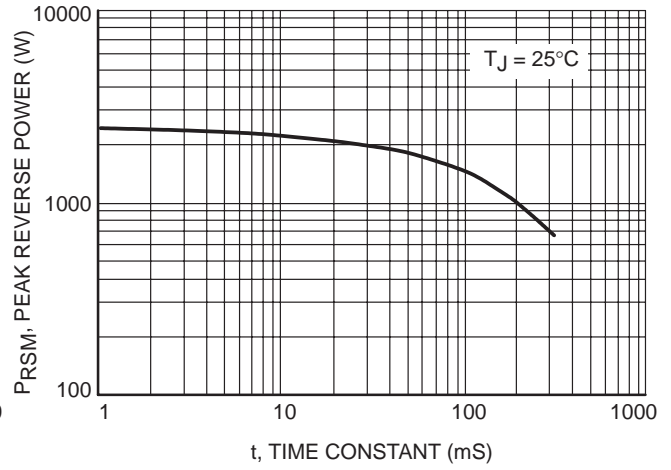


Figure 8. Maximum Peak Reverse Power

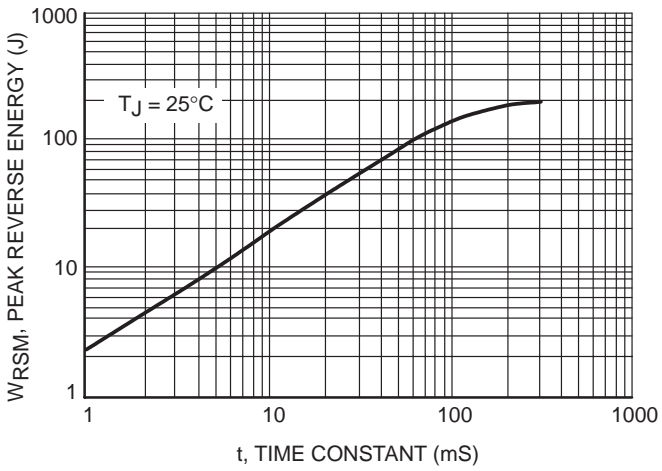


Figure 9. Maximum Reverse Energy

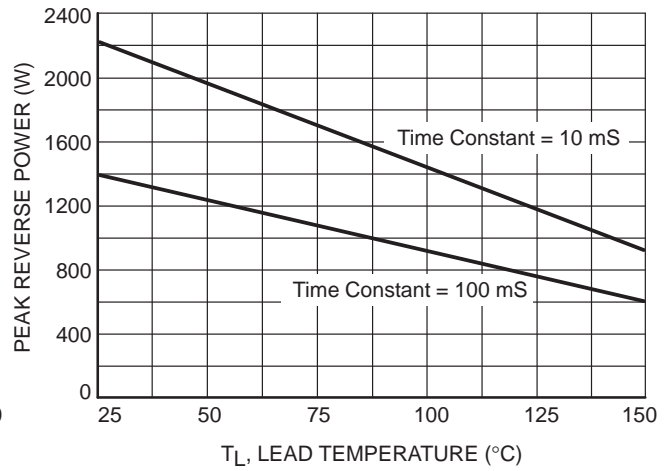


Figure 10. Reverse Power Derating

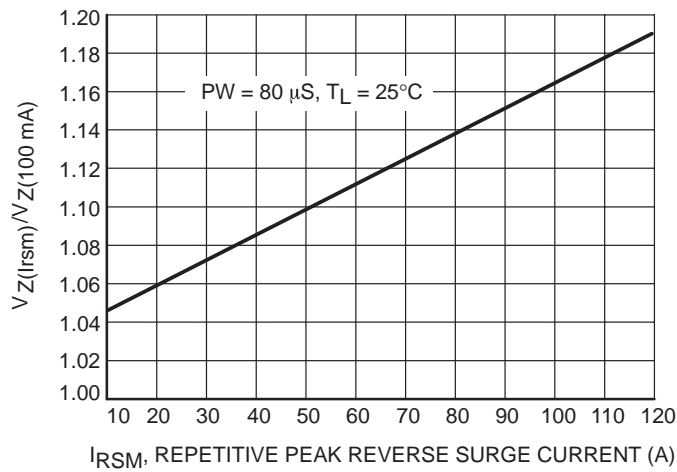


Figure 11. Typical Clamping Factor

MR2535

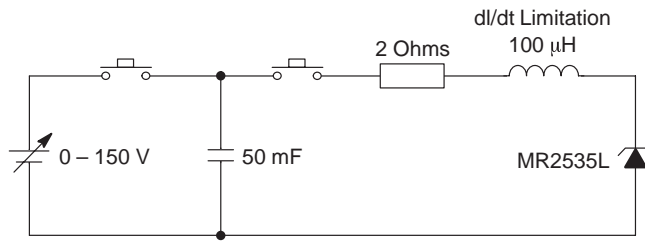


Figure 12. Load Dump Test Circuit

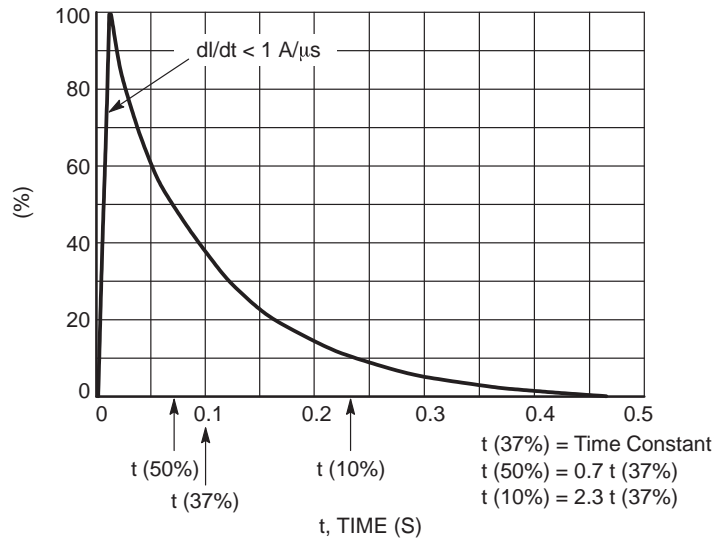


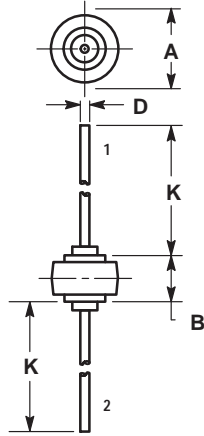
Figure 13. Load Dump Pulse Current

Notes

MR2535

PACKAGE DIMENSIONS


L SUFFIX
CASE 194-04
ISSUE F



NOTES:
1. CATHODE SYMBOL ON PACKAGE.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	8.43	8.69	0.332	0.342
B	5.94	6.25	0.234	0.246
D	1.27	1.35	0.050	0.053
E	25.15	25.65	0.990	1.010

STYLE 1:
PIN 1. CATHODE
2. ANODE

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer.

PUBLICATION ORDERING INFORMATION

USA/EUROPE Literature Fulfillment:

Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: ONlit@hibbertco.com

Fax Response Line*: 303-675-2167
800-344-3810 Toll Free USA/Canada
*To receive a Fax of our publications

N. America Technical Support: 800-282-9855 Toll Free USA/Canada

ASIA/PACIFIC: LDC for ON Semiconductor – Asia Support
Phone: 303-675-2121 (Tue-Fri 9:00am to 1:00pm, Hong Kong Time)
Email: ONlit-asia@hibbertco.com

JAPAN: ON Semiconductor, Japan Customer Focus Center
4-32-1 Nishi-Gotanda, Shinagawa-ku, Tokyo, Japan 141-8549
Phone: 81-3-5487-8345
Email: r14153@onsemi.com

ON Semiconductor Website: <http://onsemi.com>

For additional information, please contact your local Sales Representative.