

MR2835S, MR2835SK

Overvoltage Transient Suppressor

...designed for applications requiring a diode with reverse avalanche characteristics for use as reverse power transient suppressor.

Developed to suppress transients in the automotive system, this device operates in reverse mode as power zener diode and will protect expensive modules such as ignition, injection and autoblocking systems from overvoltage conditions.

- High Power Capability
- Economical

Mechanical Characteristics

- Finish: All External Surfaces are Corrosion Resistant
- Polarity: Cathode to Terminal
- Weight: 1.78 Grams (Approximately)
- Maximum Temperature for Soldering Purposes:
260°C for 10 s using a Belt Furnace
- Marking: MR2835S

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Blocking Voltage	V_R	23	V
Peak Repetitive Reverse Surge Current (Time Constant = 10 ms, $T_C = 25^\circ\text{C}$)	I_{RSM}	62	A
Non-Repetitive Peak Surge Current (Half-wave, Single Phase, 50 Hz)	I_{FSM}	400	A
Storage Temperature Range	T_{stg}	-40 to +150	°C
Operating Junction Temperature Range	T_J	-40 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.0	°C/W

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Instantaneous Forward Voltage ($I_F = 100\text{ A}$) (Note 1)	V_F	—	1.1	Volts
Reverse Current ($V_R = 20\text{ V}$) (Note 1)	I_R	—	5.0	μA
Breakdown Voltage ($I_Z = 100\text{ mA}$) (Note 1)	$V_{(BR)}$	24	32	Volts
Breakdown Voltage ($I_Z = 80\text{ A}$, $T_C = 85^\circ\text{C}$, $PW = 80\text{ }\mu\text{s}$)	$V_{(BR)}$	—	40	Volts
Breakdown Voltage Temperature Coefficient	$V_{(BR)TC}$	—	0.09	%/°C
Forward Voltage Temperature Coefficient ($I_F = 10\text{ mA}$)	V_{FTC}	—	-2.0*	mV/°C

1. Pulse Test: Pulse Width < 300 μs , Duty Cycle < 2%.

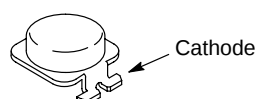
*Typical



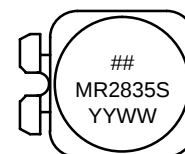
ON Semiconductor®

<http://onsemi.com>

MARKING DIAGRAM



TOP CAN BUTTON
CASE 460



= Lot Number
MR2835S = Specific Device Code
YY = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping [†]
MR2835S	Top Can Button	500/Tape & Reel
MR2835SK	Top Can Button	500/Tape & Reel

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MR2835S, MR2835SK

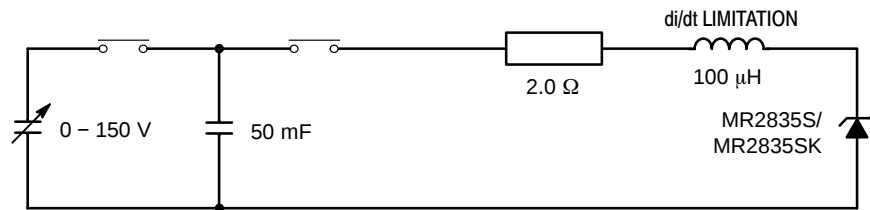


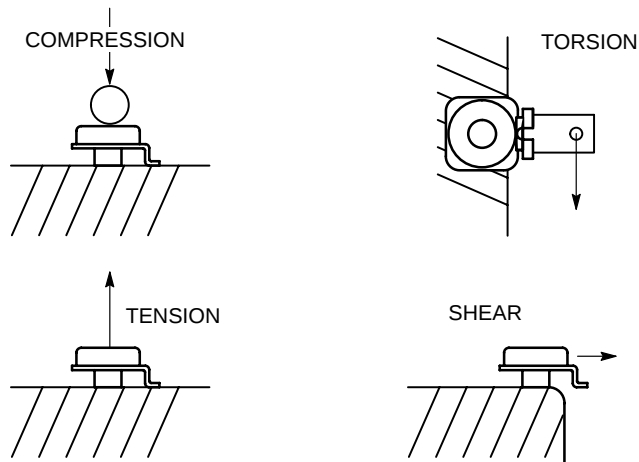
Figure 1. Load Dump Test Circuit

MOUNTING AND HANDLING

The mechanical stress limits for the Top Can diode are as follows:

Compression:	33.7 lbs	150 newtons
Tension:	33.7 lbs	150 newtons
Torsion:	6.3 inch lbs	0.7 newton meters
Shear:	56.2 lbs	250 newtons

MECHANICAL STRESS



MR2835S, MR2835SK

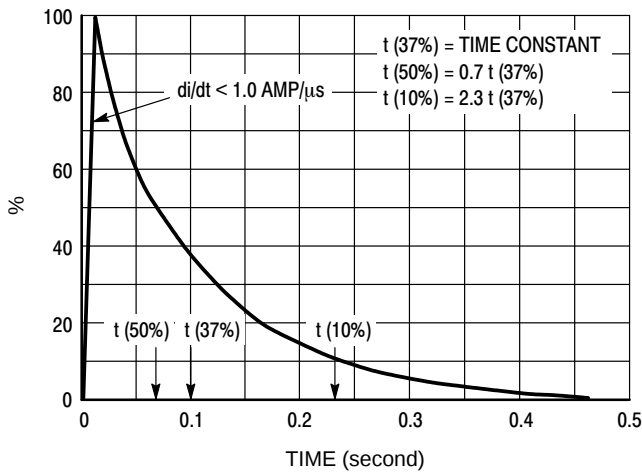


Figure 2. Load Dump Pulse Current

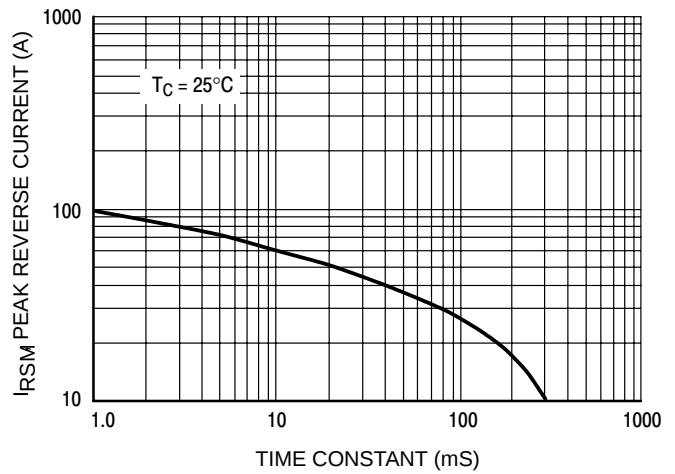


Figure 3. Maximum Peak Reverse Current

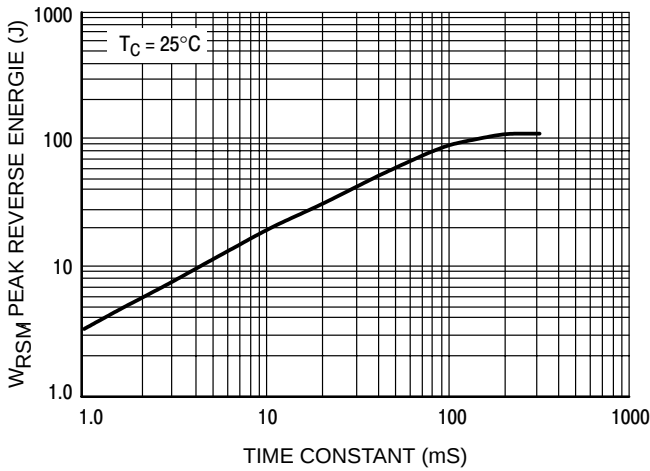


Figure 4. Maximum Reverse Energy

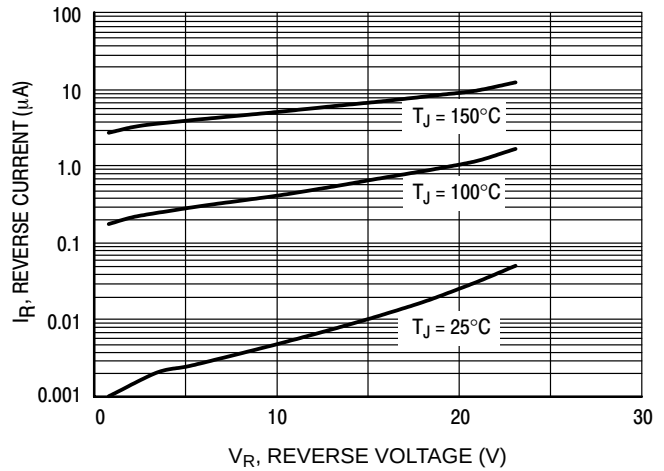


Figure 5. Typical Reverse Current

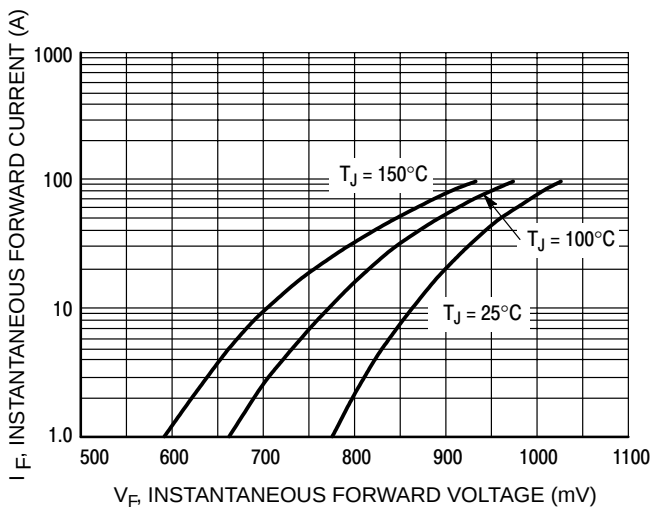


Figure 6. Typical Forward Voltage

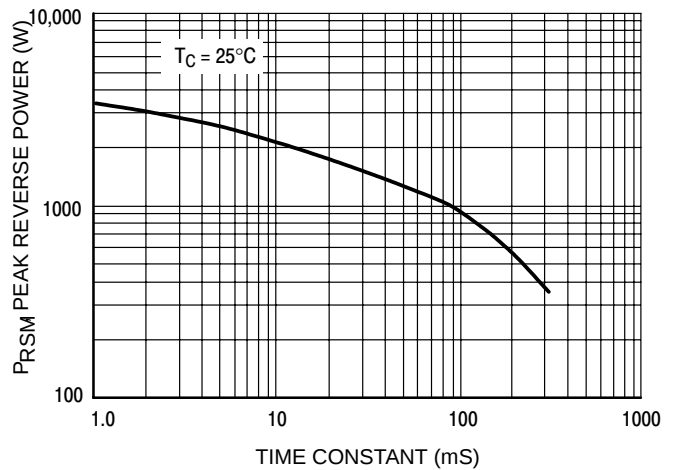


Figure 7. Maximum Peak Reverse Power

MR2835S, MR2835SK

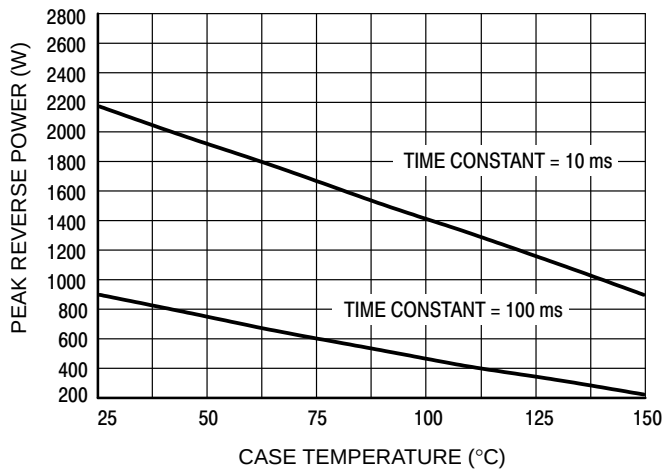


Figure 8. Reverse Power Derating

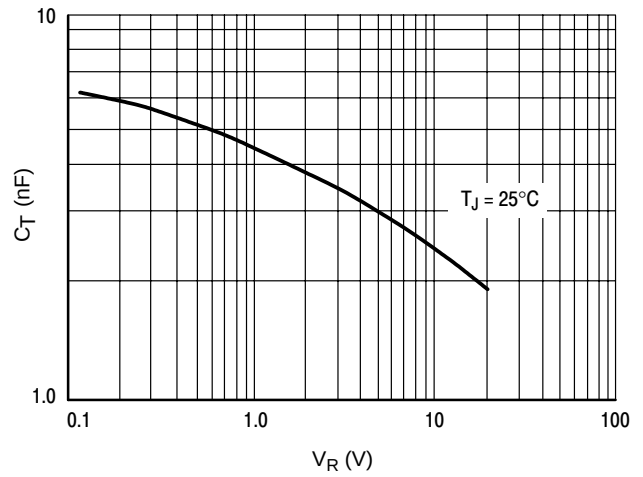


Figure 9. Typical Reverse Capacitance

Reel of 500 Units

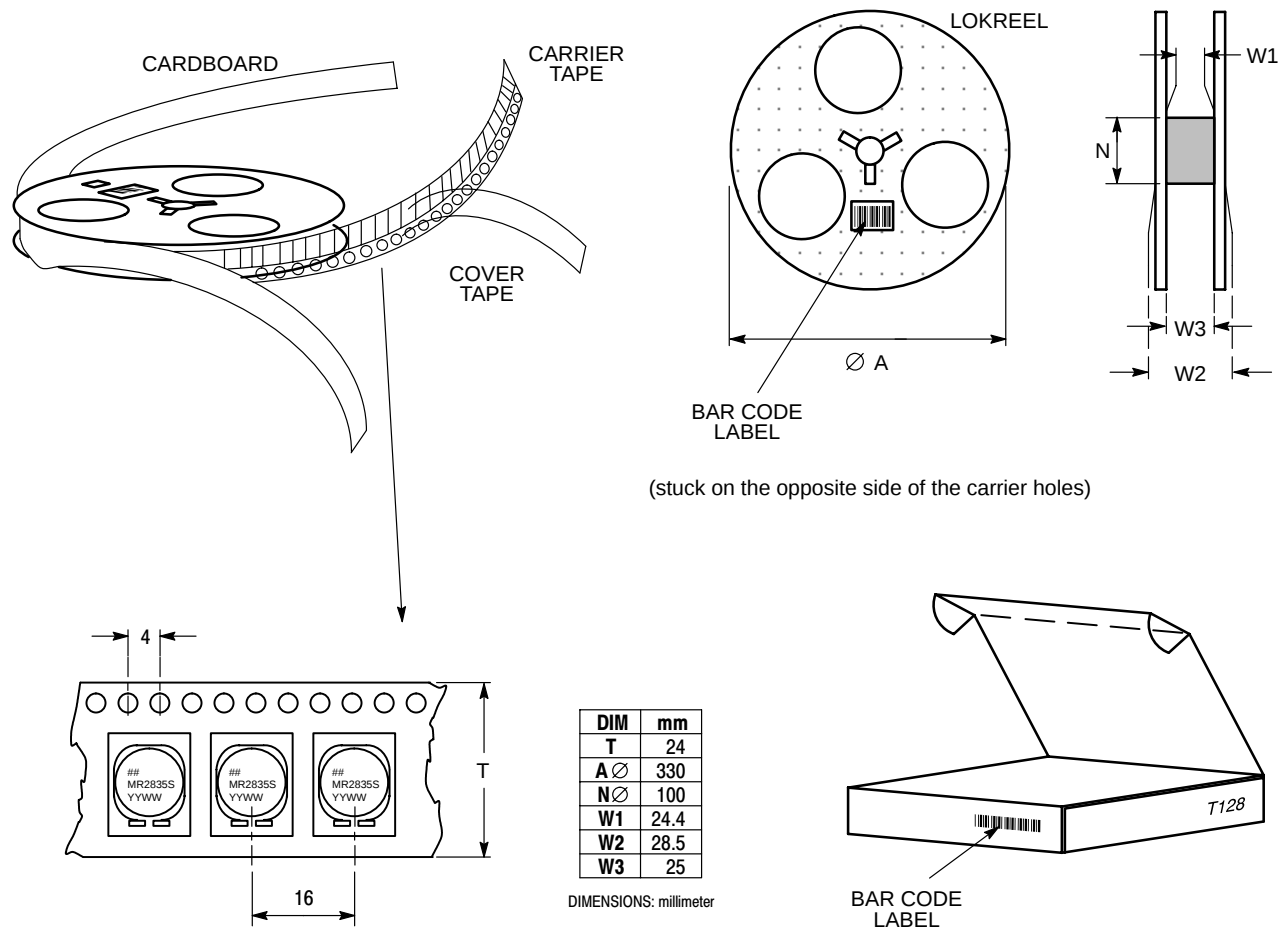
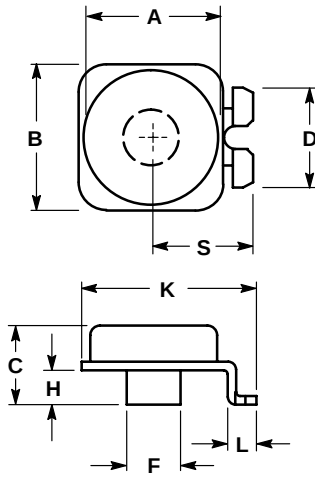


Figure 10. Reel Packing of MR2835S, MR2835SK – Top Can

MR2835S, MR2835SK

PACKAGE DIMENSIONS

TOP CAN BUTTON CASE 460-02 ISSUE B



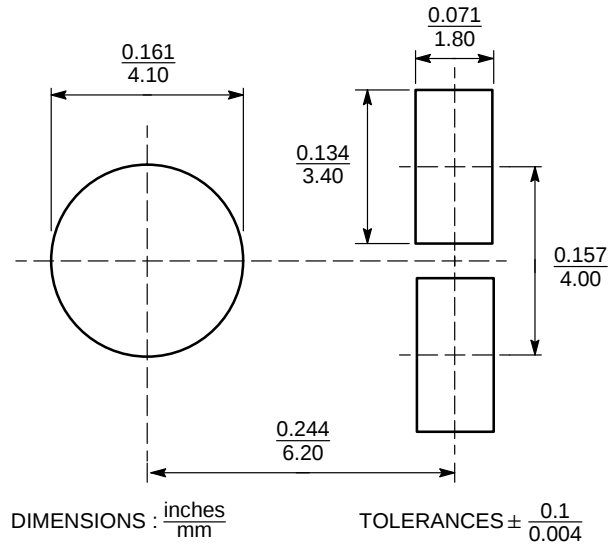
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.1	9.5	0.358	0.374
B	9.5	9.9	0.374	0.390
C	5.2	5.6	0.205	0.220
D	6.4	6.8	0.252	0.268
F	3.4	3.8	0.134	0.149
H	2.0	2.4	0.079	0.095
K	11.4	11.8	0.449	0.465
L	1.8	2.2	0.071	0.087
S	6.5	6.9	0.256	0.272

FOOTPRINT

Minimum circuit board footprint
for Top Can Diode in Case 460-02



MR2835S, MR2835SK

ON Semiconductor and  are registered 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. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

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: orderlit@onsemi.com

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

Japan: ON Semiconductor, Japan Customer Focus Center
2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051
Phone: 81-3-5773-3850

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

Order Literature: <http://www.onsemi.com/litorder>

For additional information, please contact your
local Sales Representative.

MR2835S/D