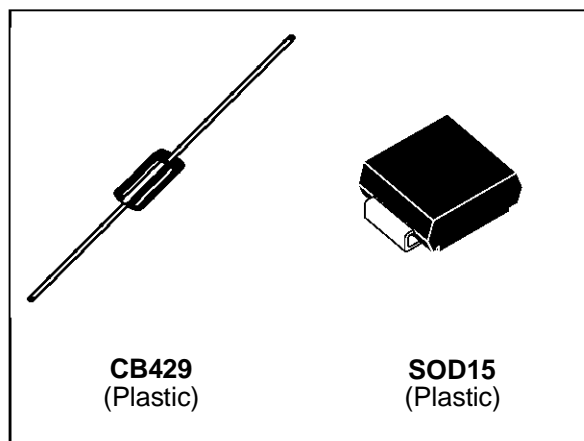


FEATURES

- UNIDIRECTIONAL TRANSIL DIODE
- PEAK PULSE POWER = 1500 W @ 1ms
- REVERSE STAND OFF VOLTAGE = 5 V
- LOW CLAMPING FACTOR
- FAST RESPONSE TIME
- UL RECOGNIZED



DESCRIPTION

The 1N5908 and SM5908 are dedicated to the 5 V logic circuit protection (TTL and CMOS technologies). Their low clamping voltage at high current level guarantee excellent protection for sensitive components.

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^{\circ}\text{C}$).

Symbol	Parameter		Value	Unit
P_p	Peak pulse power dissipation		1500	W
P	Power dissipation on infinite heatsink	$T_{lead} = 75^{\circ}\text{C}$	5	W
T_{stg}	Storage temperature range		- 65 to + 175	$^{\circ}\text{C}$
T_j	Maximum junction temperature		175	$^{\circ}\text{C}$
T_L	Maximum lead temperature for soldering during 10 s.		260	$^{\circ}\text{C}$

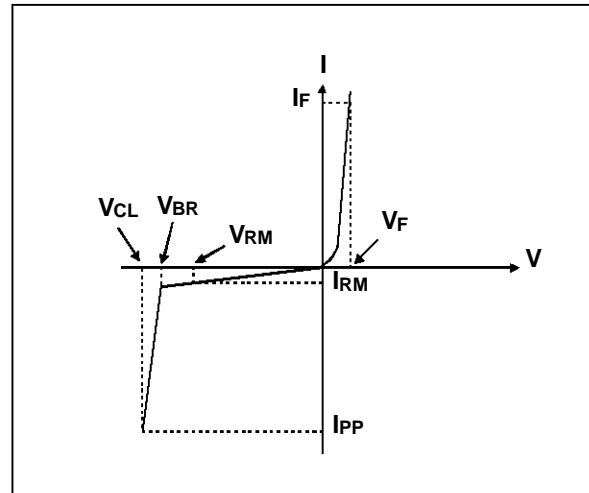
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-l)}$	Junction to leads on infinite heatsink	CB429	20	$^{\circ}\text{C}/\text{W}$
		SOD15	20	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient on printed circuit.			
	$L_{lead} = 10\text{ mm}$	CB429	75	$^{\circ}\text{C}/\text{W}$
	Mounting on standard footprint dimensions.	SOD15	75	$^{\circ}\text{C}/\text{W}$

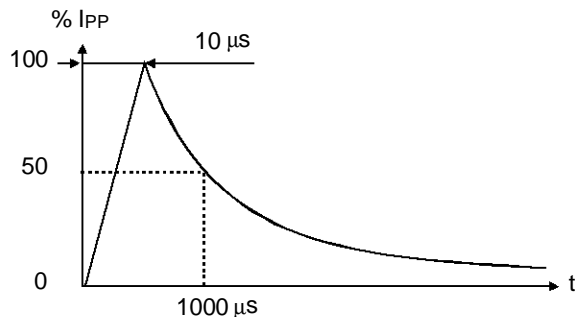
ELECTRICAL CHARACTERISTICS

($T_{amb} = 25^{\circ}C$)

Symbol	Parameter
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
V_{CL}	Clamping voltage
I_{RM}	Leakage current @ V_{RM}
I_{PP}	Peak pulse current
αT	Voltage temperature coefficient
V_F	Forward voltage $V_F < 3.5V @ I_F = 100 A$



Types	$I_{RM} @ V_{RM}$ max		$V_{BR} @ I_R$ min		$V_{CL} @ I_{PP}$ max 10/1000 μs		$V_{CL} @ I_{PP}$ max 10/1000 μs		$V_{CL} @ I_{PP}$ max 10/1000 μs		αT max note2
	μA	V	V	mA	V	A	V	A	V	A	$10^{-4}/^{\circ}C$
1N5908 SM5908	300	5	6	1	7.6	30	8	60	8.5	120	5.7



Note 1 : For surges greater than the maximum values, the diode will present a short-circuit Anode - Cathode.

Note 2 : $\Delta V_{BR} = \alpha T * (T_{amb} - 25) * V_{BR} (25^{\circ}C)$.

Fig. 1: Power dissipation derating versus ambient temperature

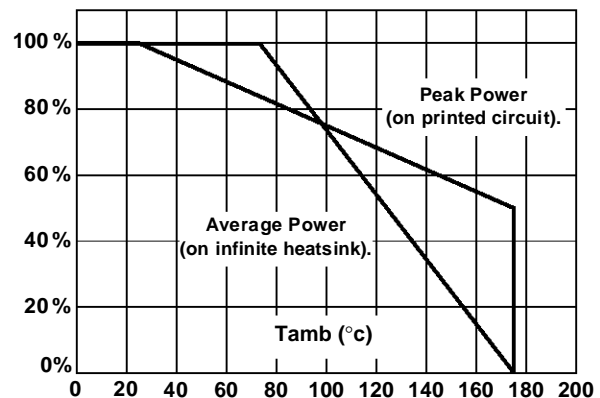


Fig. 2 : Peak pulse power versus exponential pulse duration.

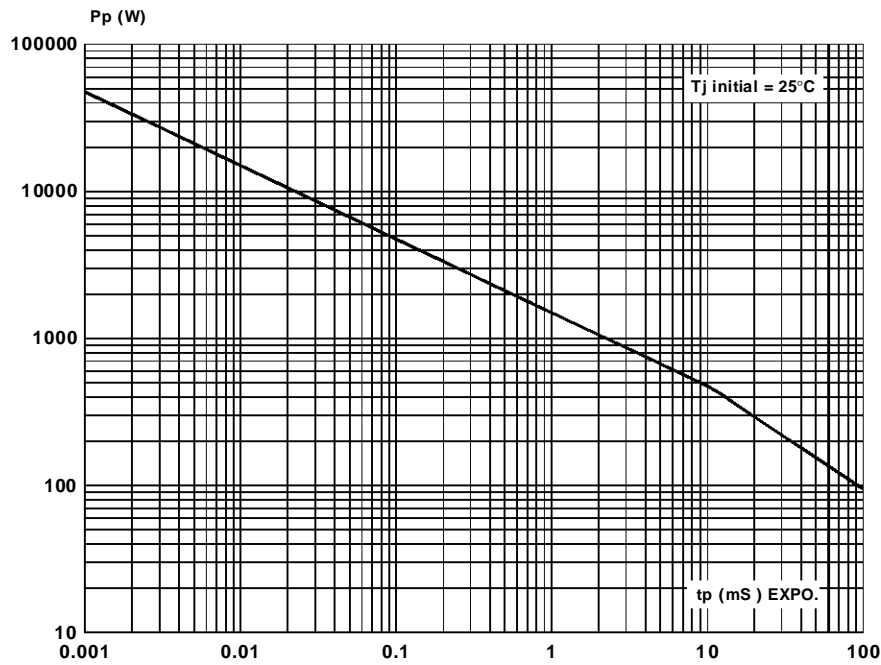
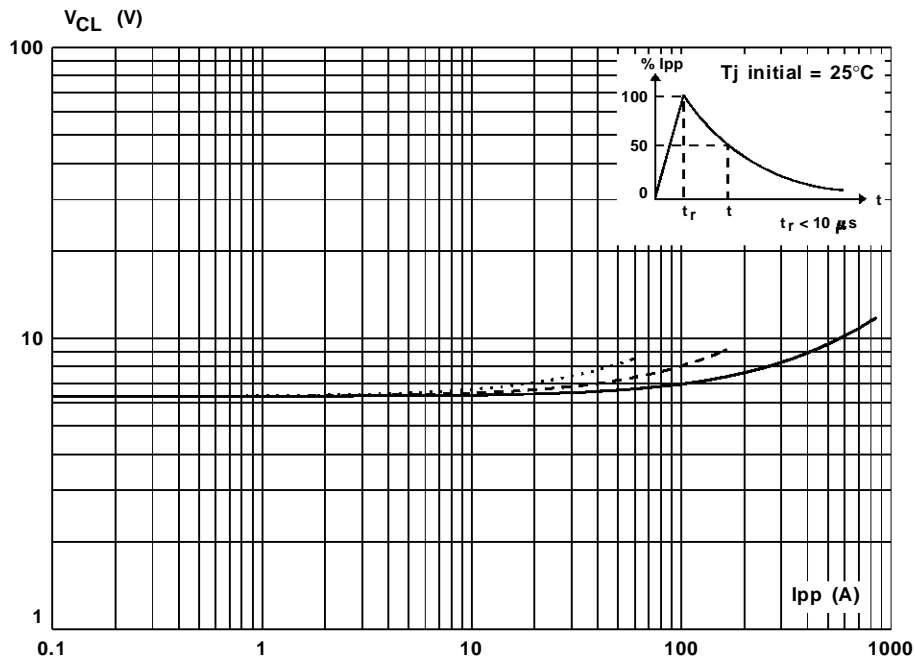


Fig. 3 : Clamping voltage versus peak pulse current.

Exponential waveform $t_p = 20 \mu\text{s}$
 $t_p = 1 \text{ ms}$ -----
 $t_p = 10 \text{ ms}$ _____



Note : The curves of the figure 3 are specified for a junction temperature of 25 °C before surge.
 The given results may be extrapolated for other junction temperatures by using the following formula :
 $\Delta V_{BR} = \alpha T \cdot (T_{amb} - 25) \cdot V_{BR} (25^\circ\text{C})$.
 For intermediate voltages, extrapolate the given results.

Fig. 4 : Capacitance versus reverse applied voltage (typical values).

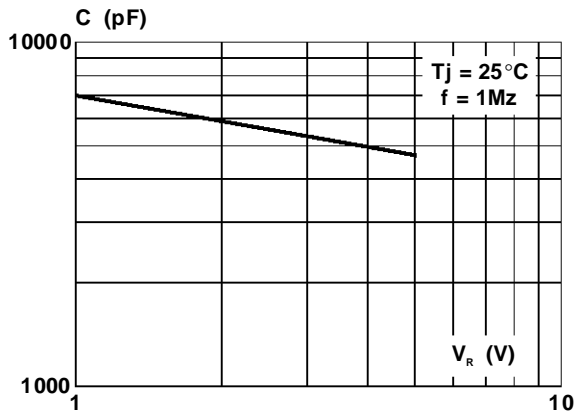


Fig. 5 : Peak forward voltage drop versus peak forward current.

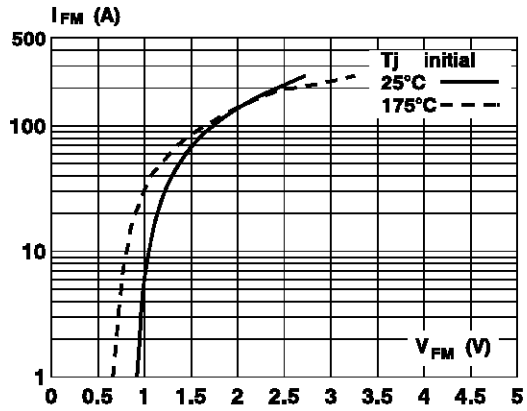


Fig. 6a/6b : Transient thermal impedance junction-ambient versus pulse duration.

Fig. 6a : CB429 Package.
Mounting on PC board ($L_{lead} = 10$ mm).

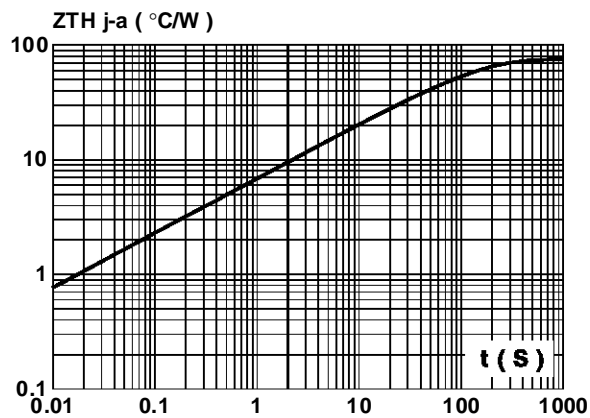
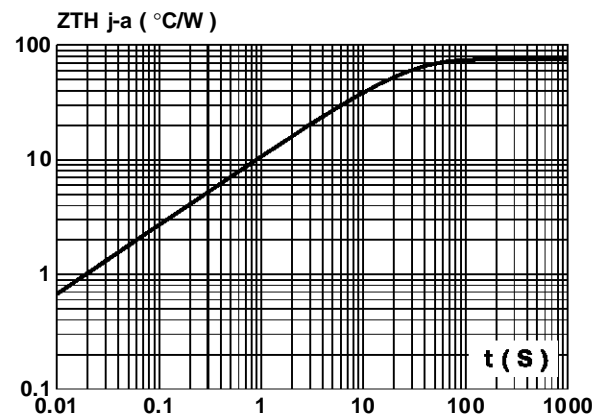


Fig. 6b : SOD15 Package.
Mounting on PC board with standard footprint dimensions.

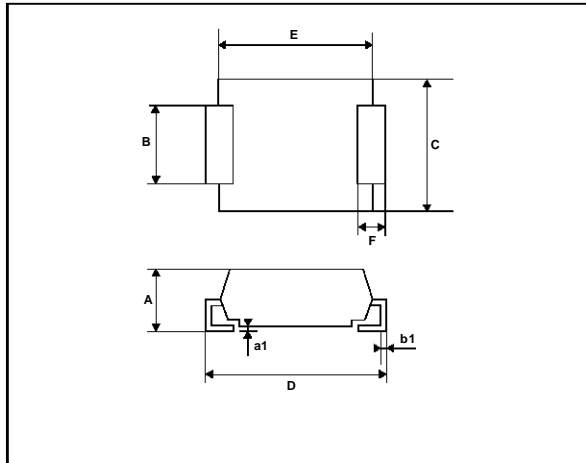


MARKING : Logo, type code and cathode band

Package	Type	Marking
SOD15	SM5908	MDC
A band indicates the cathode		

PACKAGE MECHANICAL DATA

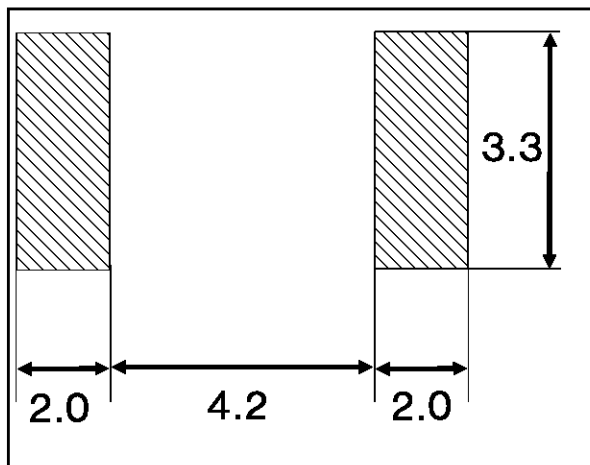
SOD15



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.50	3.10	0.098	0.122
a1	0.05	0.20	0.002	0.008
B	2.90	3.10	0.114	0.122
b1	0.29	0.32	0.011	0.012
C	4.80	5.20	0.189	0.204
D	7.60	8.00	0.299	0.315
E	6.30	6.60	0.225	0.259
F	1.30	1.70	0.051	0.056

FOOT PRINT (in millimeters)

Weight = 0.25 g.



Packaging :

- SOD15 = Standard packaging is in Film and Reel
- RL : tape and reel
- No suffix : tape

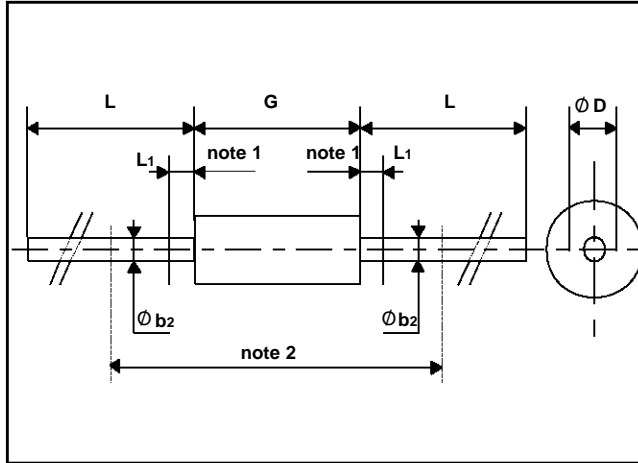
1N5908/SM5908

MARKING : Logo, type code and cathode band

Package	Type	Marking
CB429	1N5908	1N5908
A white band indicates the cathode		

PACKAGE MECHANICAL DATA

CB429



REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
Ø b2		1.092		0.043	1 The lead diameter Ø b2 is not controlled over zone L1 2 The minimum axial length within which the device may be placed with its leads bent at right angles is 0.59" (15 mm)
Ø D		5.10		0.020	
G		8.89		0.350	
L	25.4		1.00		
L1		1.25		0.049	

Packaging :

Weight = 0.85 g.

Axial Diode CB429 = Products Supplied in Tape and Reel.

- RL : tape and reel
- No suffix : tape

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1995 SGS-THOMSON Microelectronics - Printed in Italy - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.