

## TRANSIL LOAD DUMP PROTECTION

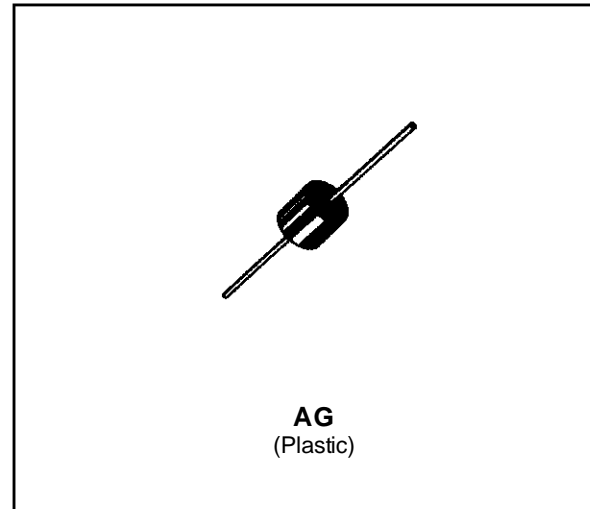
**FEATURES**

- TRANSIENT VOLTAGE SUPPRESSOR DIODE ESPECIALLY DESIGNED FOR LOAD DUMP EFFECT PROTECTION
- HIGH SURGE CURRENT CAPABILITY :  
40 A / 40 ms EXPONENTIAL WAVE
- COMPLIANT WITH MAIN STANDARDS SUCH AS:  
-ISO / DTR 7637  
-SAEJ 1113A ...

**DESCRIPTION**

Transient voltage suppressor diode especially developed for sensitive circuit protection in automotive systems such as dash board, car radios etc.

Its high surge current capability and instantaneous response to transients provide an efficient protection against the load dump effect.


**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter		Value	Unit
V <sub>PP</sub>	Peak pulse load dump overvoltage See note 1 - 2	T <sub>amb</sub> = 85°C	120	V
P	Power dissipation on infinite heatsink	T <sub>amb</sub> = 100°C	5	W
I <sub>FSM</sub>	Non repetitive surge peak forward current.	T <sub>j</sub> initial = 25°C t = 10 ms	200	A
T <sub>stg</sub> T <sub>j</sub>	Storage and junction temperature range.		- 65 to + 175 170	°C °C
T <sub>L</sub>	Maximum lead temperature for soldering during 10 sec at 4 mm from case.		230	°C

**THERMAL RESISTANCES**

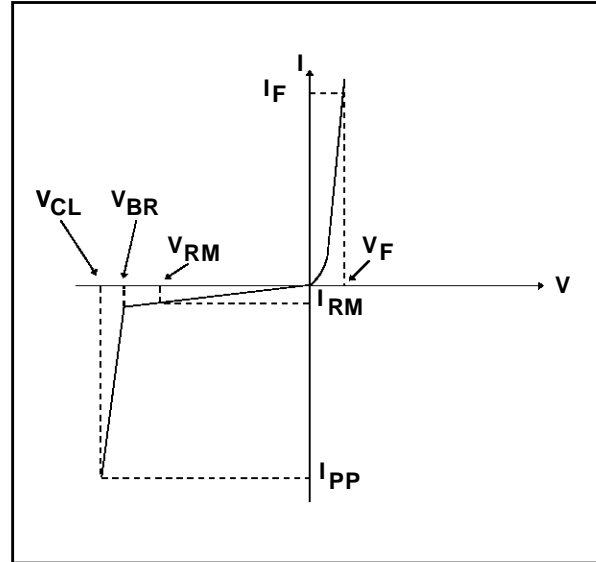
Symbol	Parameter		Value	Unit
R <sub>th</sub> (j-l)	Junction-leads on infinite heatsink		15	°C/W
R <sub>th</sub> (j-a)	Junction to ambient on printed circuit.	L <sub>lead</sub> = 10 mm	50	°C/W

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

# LDP24AS

## ELECTRICAL CHARACTERISTICS

Symbol	Parameter
$V_{RM}$	Stand-off voltage.
$V_{BR}$	Breakdown voltage.
$V_{CL}$	Clamping voltage.
$I_{PP}$	Peak pulse current.
$\alpha T$	Temperature coefficient of $V_{BR}$ .
C	Capacitance
t clamping	Clamping time (0V to $V_{BR}$ ): $t_p = 1ps$



Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$I_{RM}$	$T_C = -40^\circ C$ $T_C = 25^\circ C$ $T_C = 85^\circ C$ $V_{RM} = 24V$			10 50 300	$\mu A$
$V_{BR}$	$T_C = 25^\circ C$ $I_R = 1mA$	25		32	V
$V_{CL}$	$T_C = -40^\circ C$ $T_C = 25^\circ C$ $T_C = 85^\circ C$ $I_{pp} = 40A$ (Note 2)			36 38 40	V
$\alpha T$	$T_C = 25^\circ C$			9.6	$10^{-4}/^\circ C$
C	F = 1MHz $V_R = 0V$		8000		pF

**Note 2 :** Surge generator

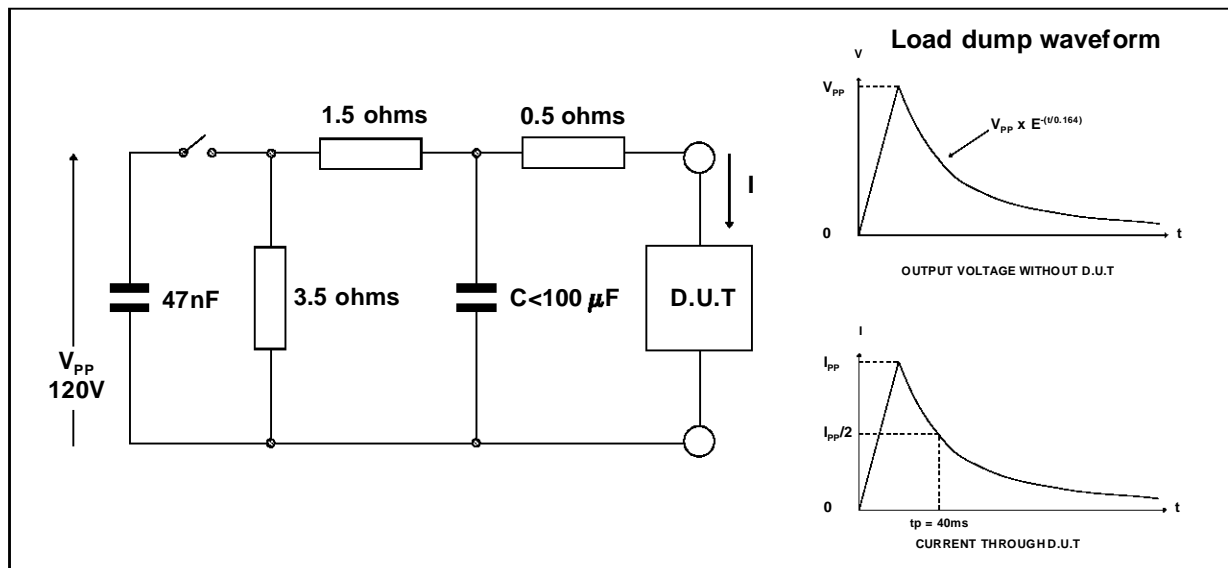


Figure 1 : Peak pulse power versus exponential pulse duration ( $T_j$  initial =85°C).

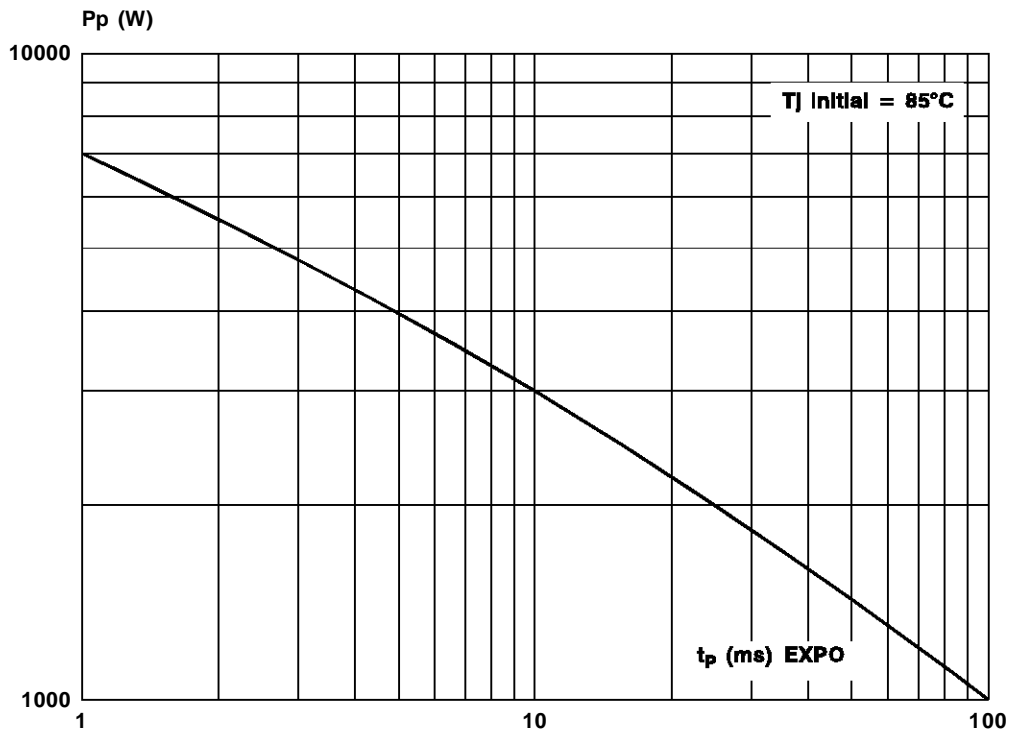
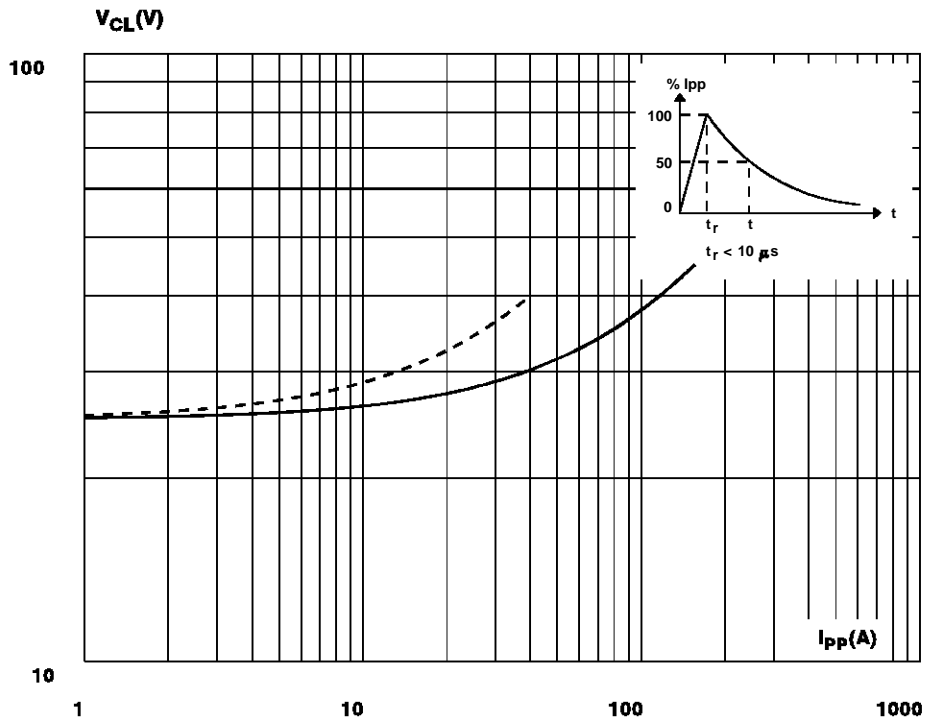
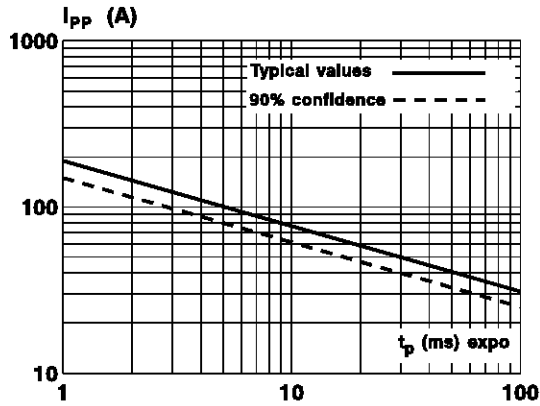


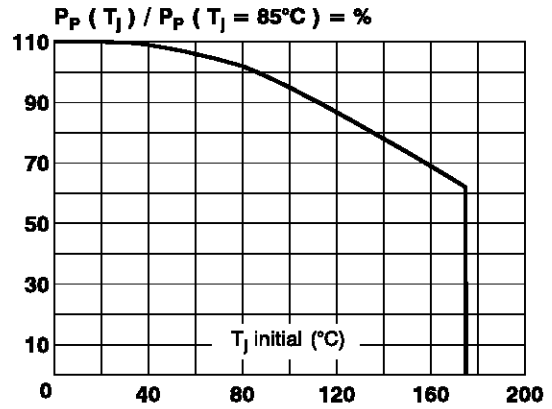
Figure 2 : Clamping voltage versus peak pulse current ( $T_j$  initial =85°C).  
 exponential waveform  $t = 40$  ms \_\_\_\_\_  
 $t = 1$  ms \_\_\_\_\_



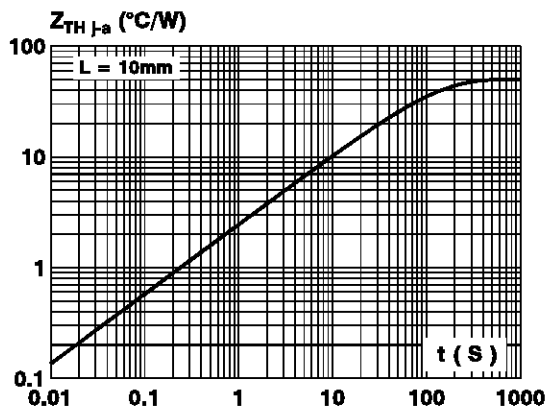
**Figure 3 :** Peak pulse current versus exponential pulse duration ( $T_J$  initial =85°C).



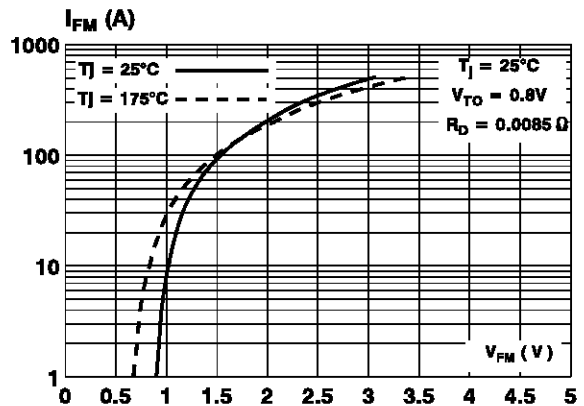
**Figure 4 :** Peak pulse power versus junction temperature.



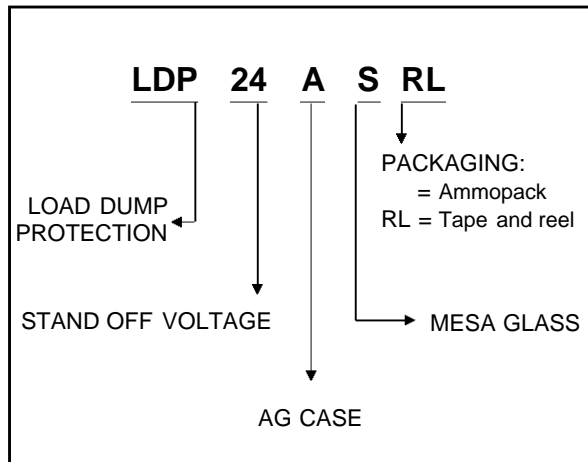
**Figure 5 :** Transient thermal impedance junction-ambient versus pulse duration (device mounted on PC Board with  $L_{lead} = 10mm$ ).



**Figure 6 :** Peak forward current versus peak forward voltage drop (typical values).

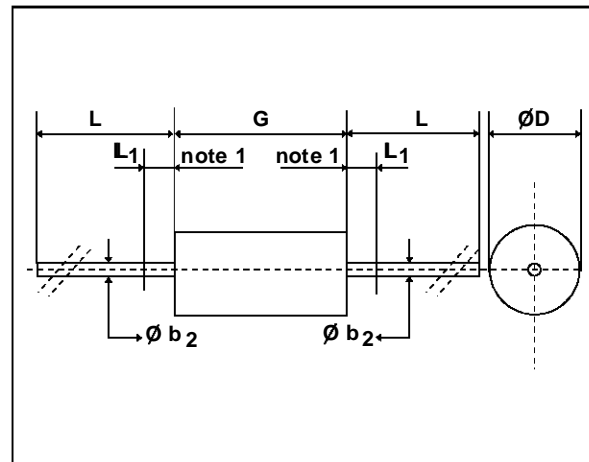


**ORDER CODE**



**PACKAGE MECHANICAL DATA**

AG (Plastic).



**MARKING** : Logo, Date Code, Type Code, Cathode Band.

**Weight** = 1 g.

**Packaging** : standard packaging is in tape and reel.

Ref	Millimeters		Inches	
	min	max	min	max
Ø b <sub>2</sub>	1.35	1.45	0.053	0.057
Ø D	-	8	-	0.315
G	-	9	-	0.354
L	20	-	0.787	-
L <sub>1</sub>	-	1.27	-	0.050

**Note1:** The diameter Ø b<sub>2</sub> is not controlled over zone L<sub>1</sub>.  
Cooling method : by convection (method A).

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