



LDP24A

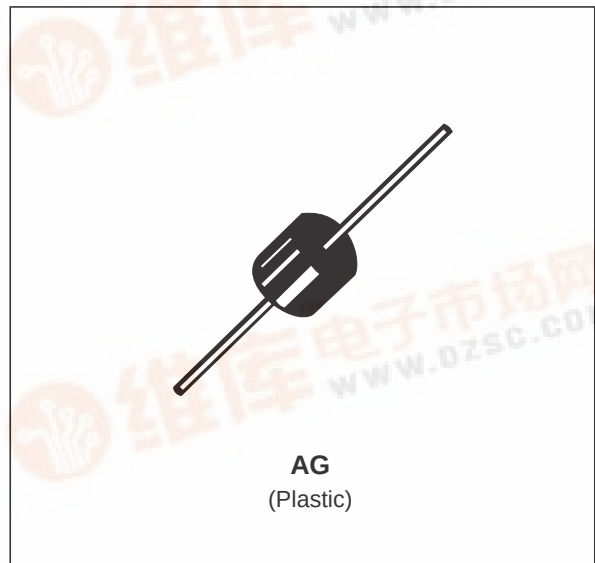
TRANSIENT PROTECTION LOAD DUMP

FEATURES

- TRANSIENT VOLTAGE SUPPRESSOR DIODE ESPECIALLY DESIGNED FOR LOAD DUMP PROTECTION
- COMPLIANT WITH MAIN STANDARDS SUCH AS:
ISO / DTR 7637

DESCRIPTION

Transient voltage suppressor diodes especially useful in protecting integrated circuits, MOS, hybrids and other overvoltages sensitive semiconductors and components.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{PP}	Peak pulse load dump overvoltage See note 1	$T_{amb} = 85^{\circ}C$	100	V
P	Power dissipation on infinite heatsink	$T_{amb} = 100^{\circ}C$	5	W
I_{FSM}	Non repetitive surge peak forward current.	T_j initial = $25^{\circ}C$ $t_p = 10$ ms	500	A
T_{stg}	Storage temperature range.		- 65 to + 175	$^{\circ}C$
T_j	Maximum operating temperature		175	$^{\circ}C$
T_L	Maximum lead temperature for soldering during 10 sec at 4 mm from case.		230	$^{\circ}C$

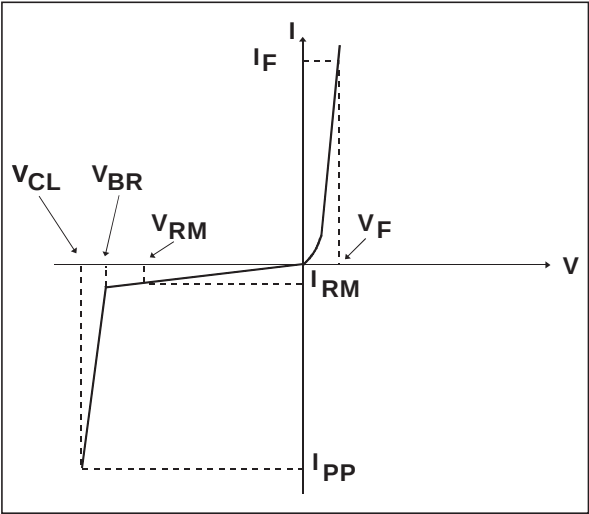
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction ambient thermal resistance on infinite heatsink $L_{lead} = 10$ mm	15	$^{\circ}C/W$

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

ELECTRICAL CHARACTERISTICS

Symbol	Parameter
V_{RM}	Stand-off voltage.
V_{BR}	Breakdown voltage.
V_{CL}	Clamping voltage.
I_{PP}	Peak pulse current.
αT	Temperature coefficient of V_{BR} .
C	Capacitance
I_{RM}	Leakage current at V_{RM}
V_F	Peak forward voltage drop ($I_{FM} = 10A$) $V_F = 0.9$ Volt Typ.



Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_{PP}	Pulse duration: 300ms				30	A
I_{RM}	$T_L = 25^{\circ}C$ $T_L = 85^{\circ}C$	$V_{RM} = 24 V$ $V_{RM} = 24 V$			50 300	μA μA
V_{BR}	$T_L = 25^{\circ}C$	$I_R = 1mA$	25		32	V
V_{CL}	$T_L = 85^{\circ}C$	see table1			40	V
αT					10	$10^{-4}/^{\circ}C$
C	F = 1MHz	$V_R = 0V$		8000		pF

LOAD DUMP TEST GENERATOR CIRCUIT (SCHAFFNER NSG 506 C). Issued from ISO / DTR 7637.

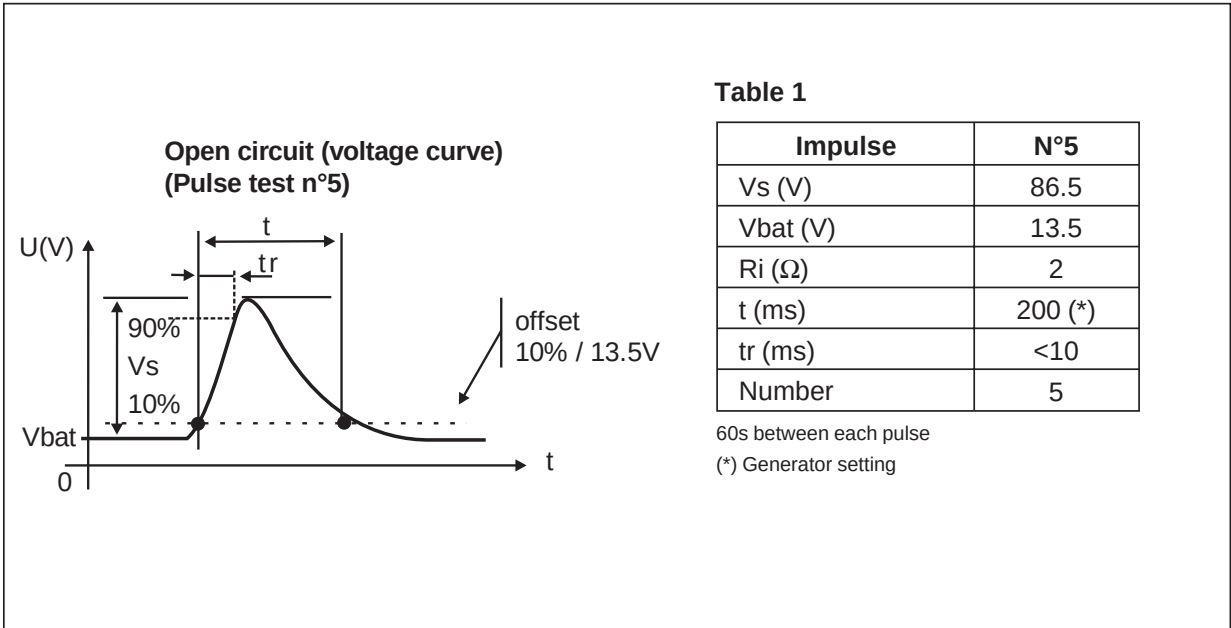


Fig. 1: Peak pulse power versus exponential pulse duration (T_j initial=85°C).

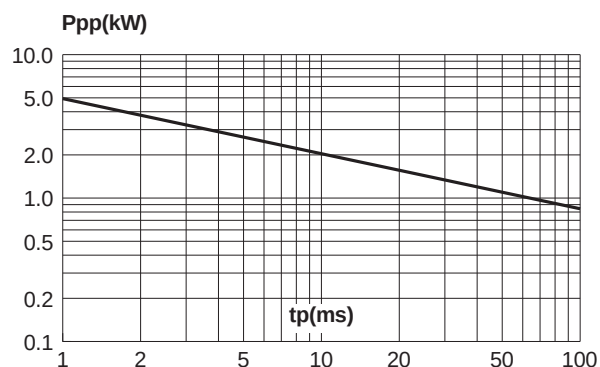


Fig. 2 : Peak pulse current versus exponential pulse duration (T_j initial=85°C).

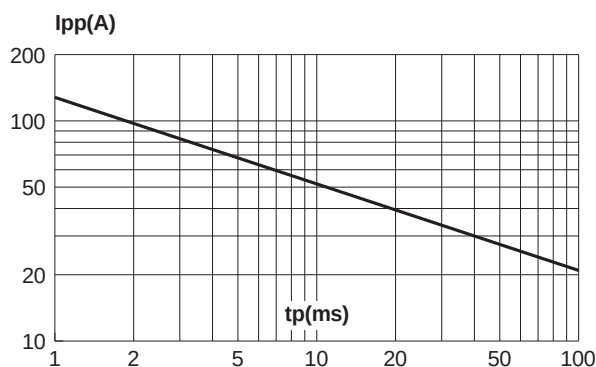


Fig. 3: Relative variation of peak pulse power versus junction temperature.

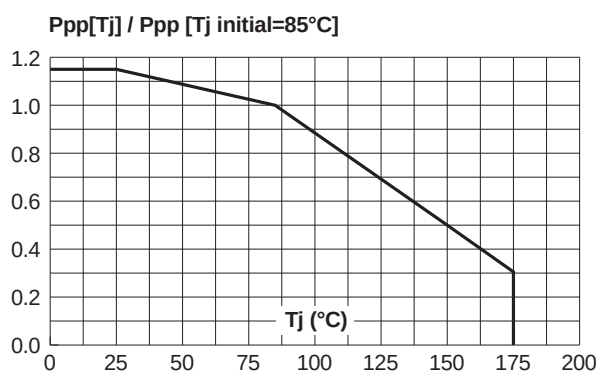


Fig. 4: Continuous power dissipation versus ambient temperature.

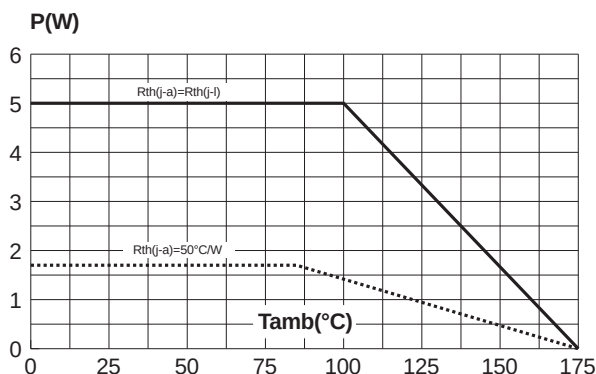


Fig. 5: Variation of thermal impedance junction to ambient versus pulse duration (printed circuit board FR4, $e(\text{Cu})=35\mu\text{m}$, $\text{SCu}=1\text{cm}^2$).

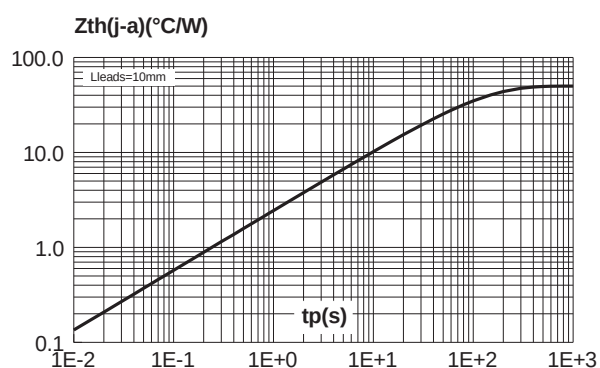
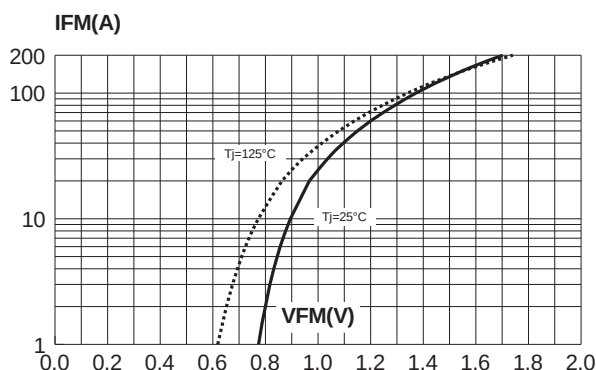


Fig. 6 : Peak forward voltage drop versus peak forward current (typical values).



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Fig. 7: Non repetitive surge peak forward current versus sinusoidal pulse duration and corresponding value of I^2t .

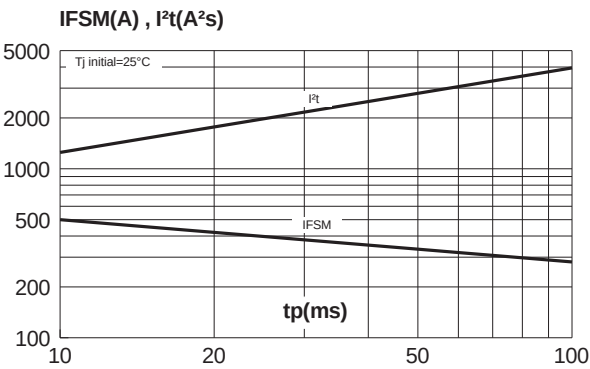
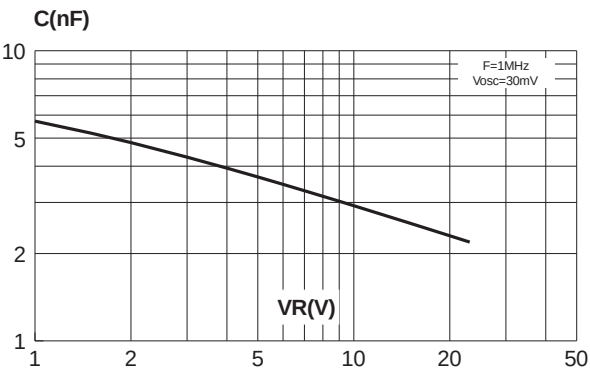
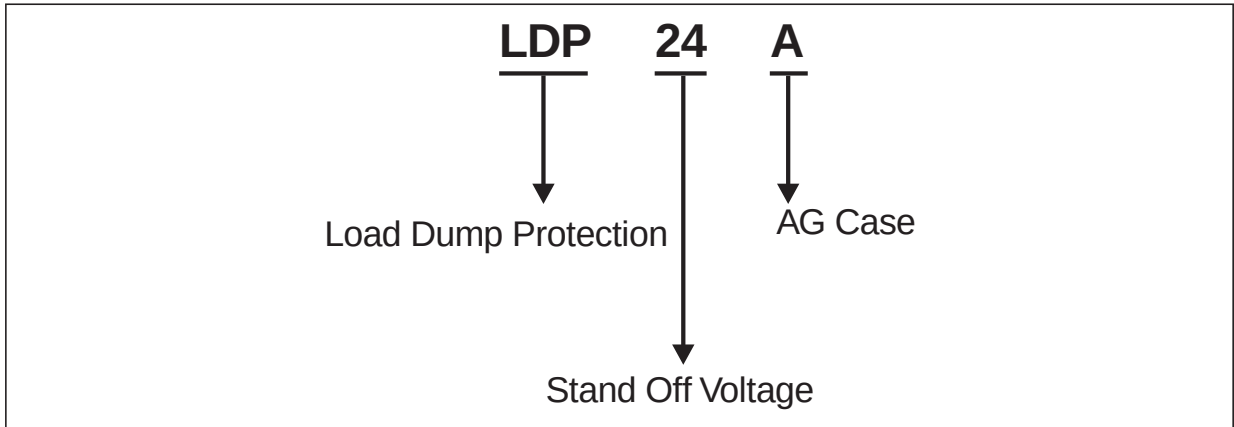


Fig. 8: Junction capacitance versus reverse applied voltage.

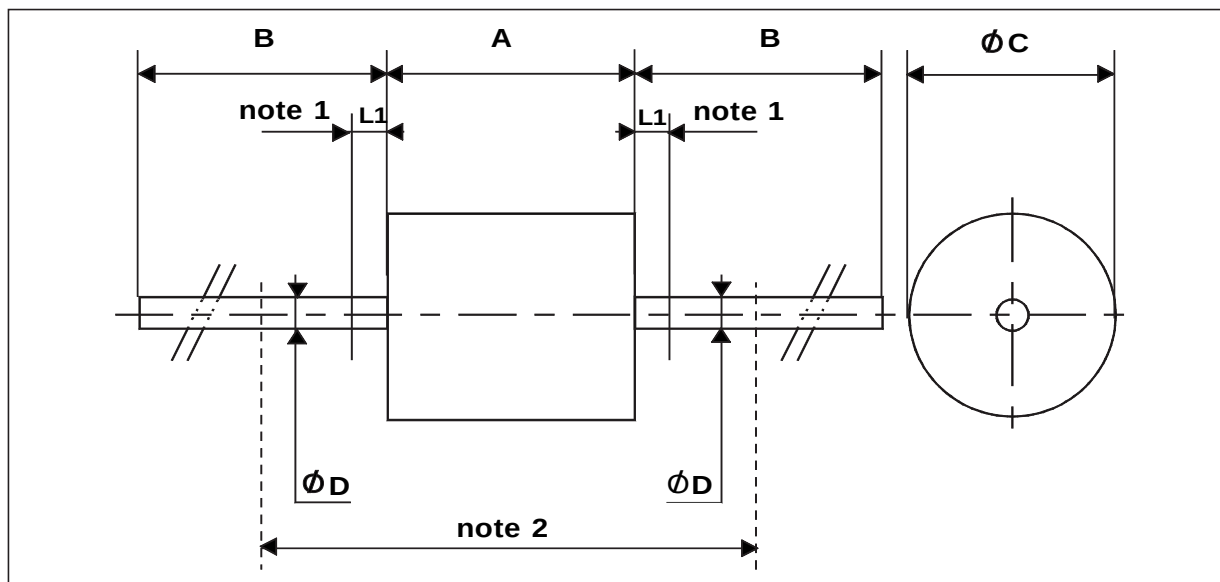


ORDER CODE



PACKAGE MECHANICAL DATA

AG (Plastic)



REF.	DIMENSIONS				NOTES
	Millimeters		Inches		
	Min.	Max.	Min.	Max.	
A		9		0.354	1- The lead is not controlled within zone L1. 2- The minimum axial length within which the device may be placed bent at right angles is 0.79" (20 mm).
B	20		0.787		
Ø C		8		0.315	
Ø D	1.35	1.45	0.053	0.057	
L1		1.27		0.050	

Type	Marking	Package	Weight	Base qty	Delivery mode
LDP24A	LDP24A	AG	2.16g	100	Ammopack
LDP24ARL	LDP24A	AG	2.16g	1000	Tape & Reel

• Resin meets UL94-V0

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