



LDP24A

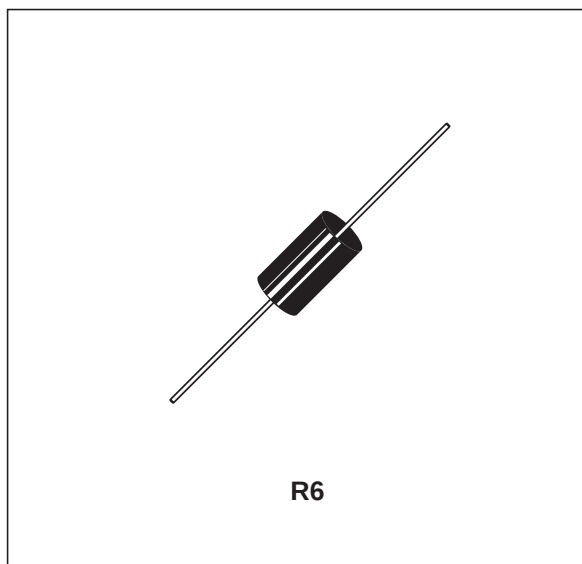
TRANSIENT PROTECTION LOAD DUMP

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°C	100	V
P	Power dissipation on infinite heatsink	T _{amb} = 100°C	5	W
I _{FSM}	Non repetitive surge peak forward current.	T _j initial = 25°C t _p = 10 ms	500	A
T _{stg}	Storage temperature range.		- 65 to + 175	°C
T _j	Maximum operating temperature		175	°C
T _L	Maximum lead temperature for soldering during 10 sec at 4 mm from case.		230	°C

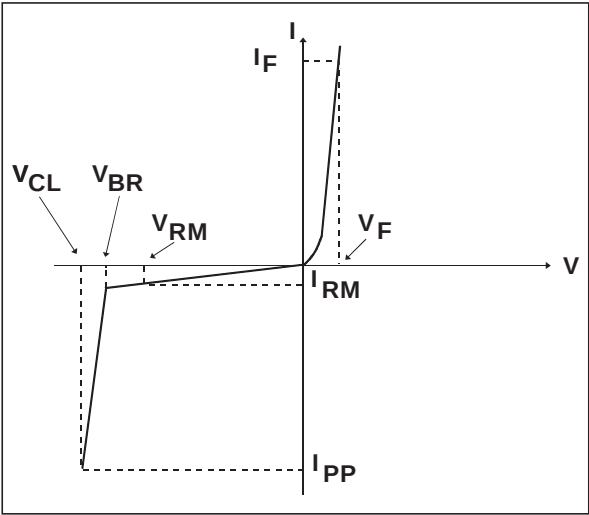
THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th} (j-a)	Junction ambient thermal resistance on infinite heatsink L _{lead} = 10 mm	15	°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



Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_{PP}	Pulse duration: 40ms		30			A
I_{RM}	$T_j = 25^{\circ}\text{C}$ $T_j = 85^{\circ}\text{C}$	$V_{RM} = 24\text{ V}$ $V_{RM} = 24\text{ V}$			50 300	μA μA
V_{BR}	$T_j = 25^{\circ}\text{C}$	$I_R = 1\text{mA}$	25		32	V
V_{CL}	$T_j = 85^{\circ}\text{C}$	see table1			40	V
αT					10	$10^{-4}/^{\circ}\text{C}$
C	F = 1MHz	$V_R = 0\text{V}$		8000		pF
V_F	$I_{FM} = 10\text{A}$			0.9		V

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

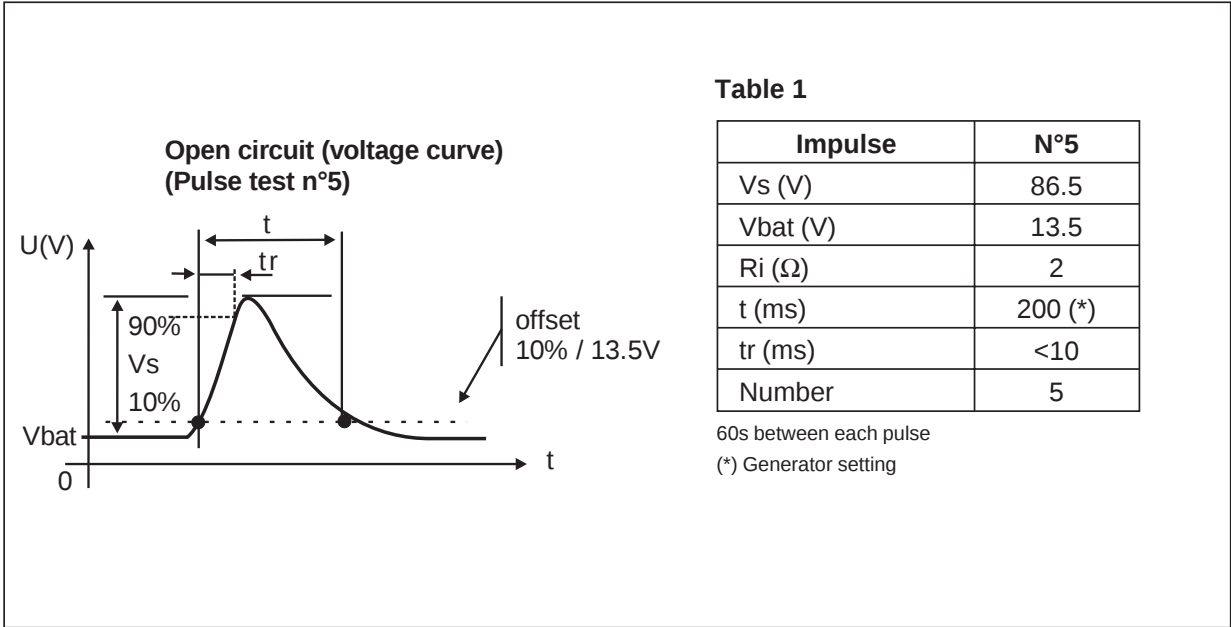


Fig. 1: Peak pulse power versus exponential pulse duration (T_J initial=85°C).

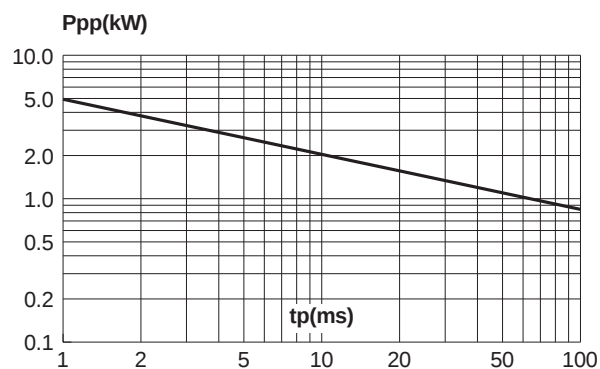


Fig. 2 : Peak pulse current versus exponential pulse duration (T_J initial=85°C).

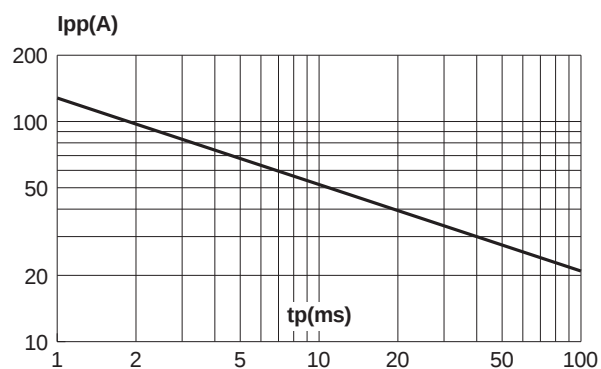


Fig. 3: Relative variation of peak pulse power versus junction temperature.

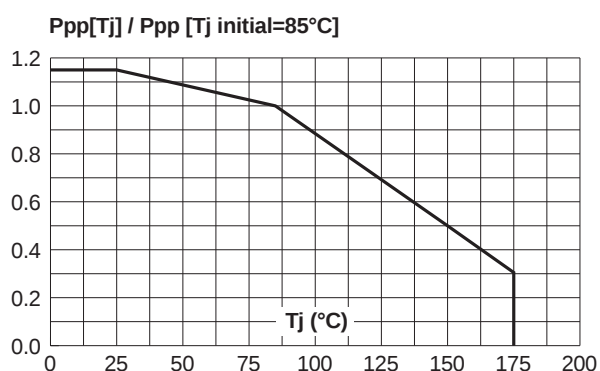


Fig. 4: Continuous power dissipation versus ambient temperature.

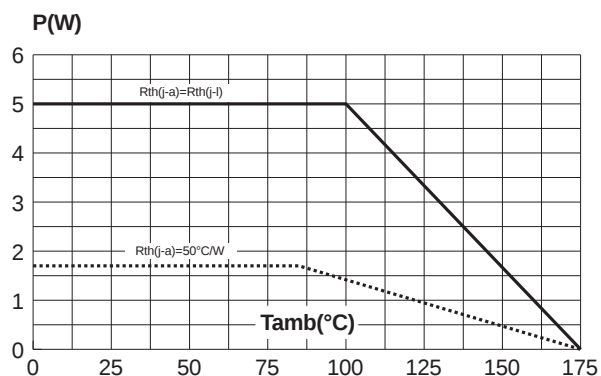


Fig. 5: Variation of thermal impedance junction to ambient versus pulse duration (printed circuit board FR4, $e(\text{Cu})=35\mu\text{m}$, $\text{SCu}=1\text{cm}^2$).

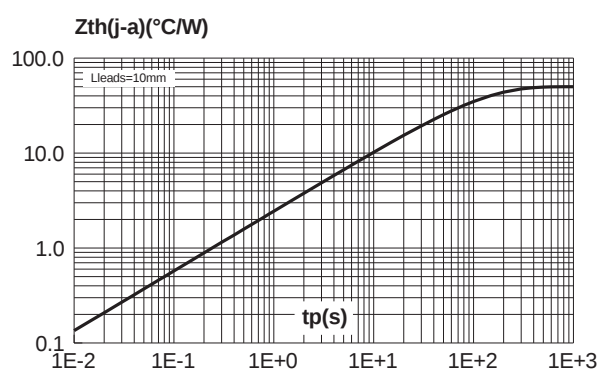
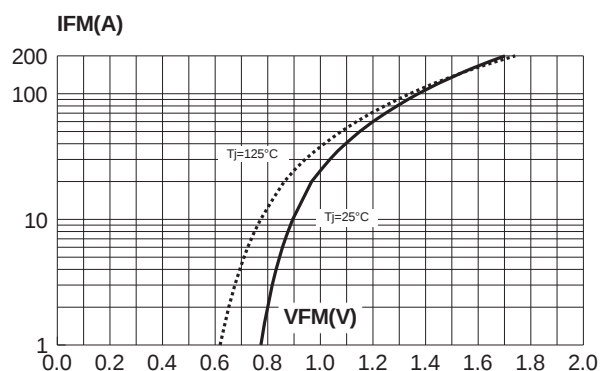


Fig. 6 : Peak forward voltage drop versus peak forward current (typical values).



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

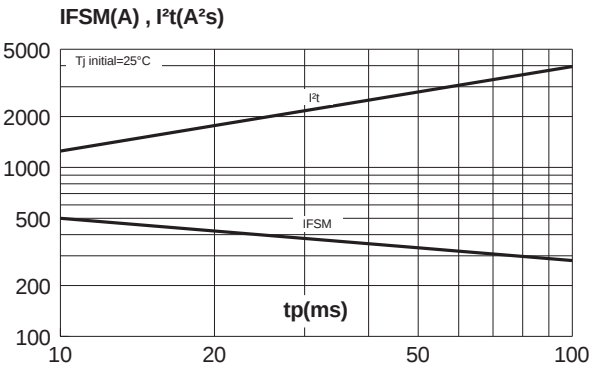
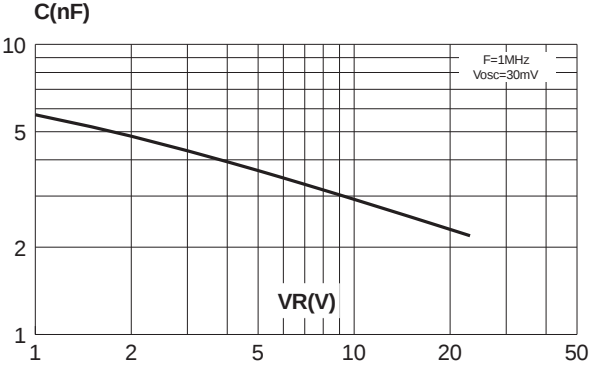
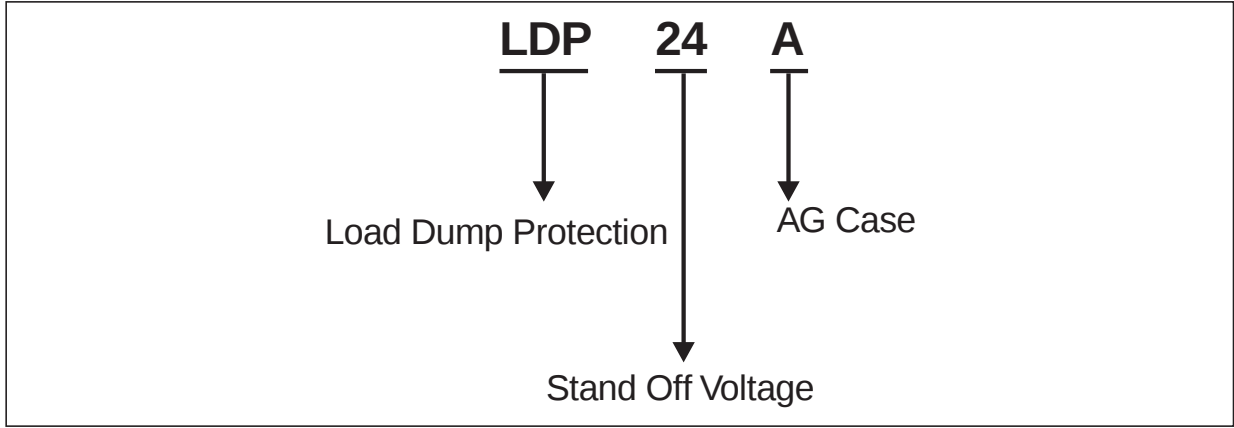


Fig. 8: Junction capacitance versus reverse applied voltage.

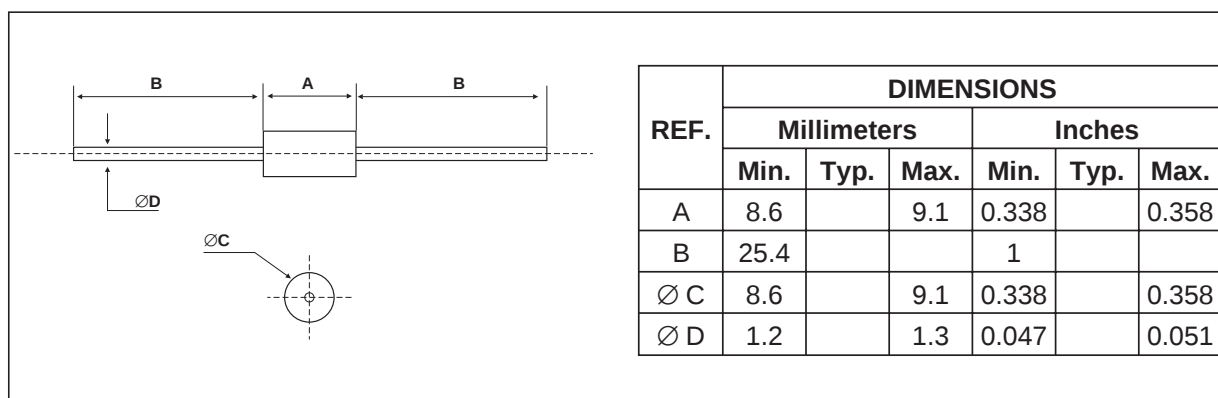


ORDER CODE



PACKAGE MECHANICAL DATA

R6 (Plastic)



Type	Marking	Package	Weight	Base qty	Delivery mode
LDP24A	LDP24A	R6	2.048 g	100	Ammopack
LDP24ARL	LDP24A	R6	2.048 g	1000	Tape & Reel

- Resin meets UL94-V0

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