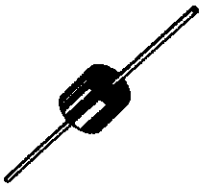
SGS-THOMSON MICROELECTRONICS

LDP24AS

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 ...



AG
(Plastic)

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_{PP}	Peak pulse load dump overvoltage See note 1 - 2	T_{amb} = 85°C	120	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 = 10 ms	200	A
T_{stg} T_j	Storage and junction temperature range.		- 65 to + 175 170	°C °C
T_L	Maximum lead temperature for soldering during 10 sec at 4 mm from case.		230	°C

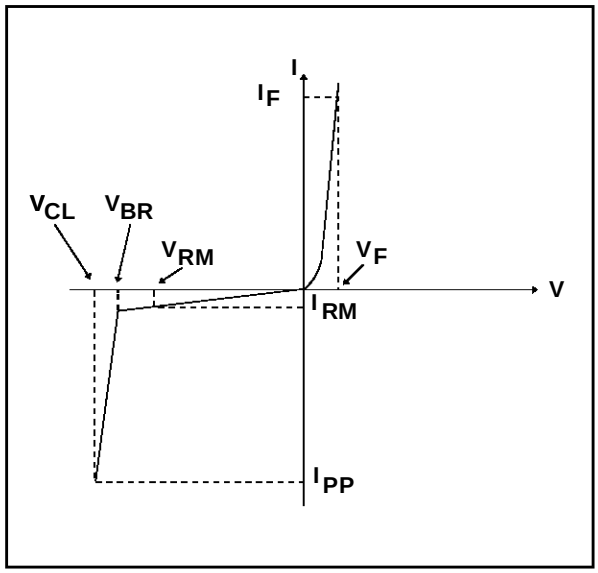
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R_{th} (j-l)	Junction-leads on infinite heatsink		15	°C/W
R_{th} (j-a)	Junction to ambient on printed circuit.	L_{lead} = 10 mm	50	°C/W

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

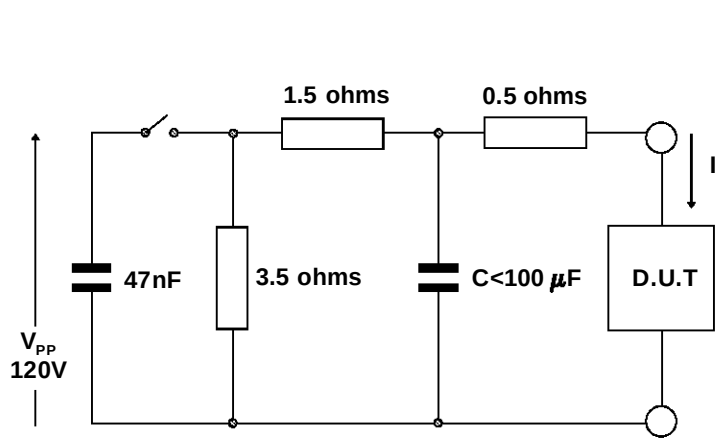
ELECTRICAL CHARACTERISTICS

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
t clamping	Clamping time (0V to V_{BR}): tp = 1ps



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

Note 2 : Surge generator



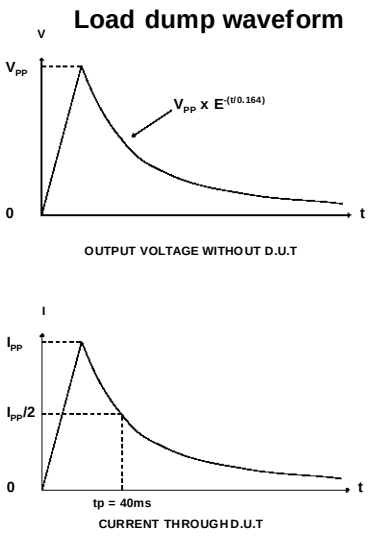


Figure 1 : Peak pulse power versus exponential pulse duration (T_j initial =85°C).

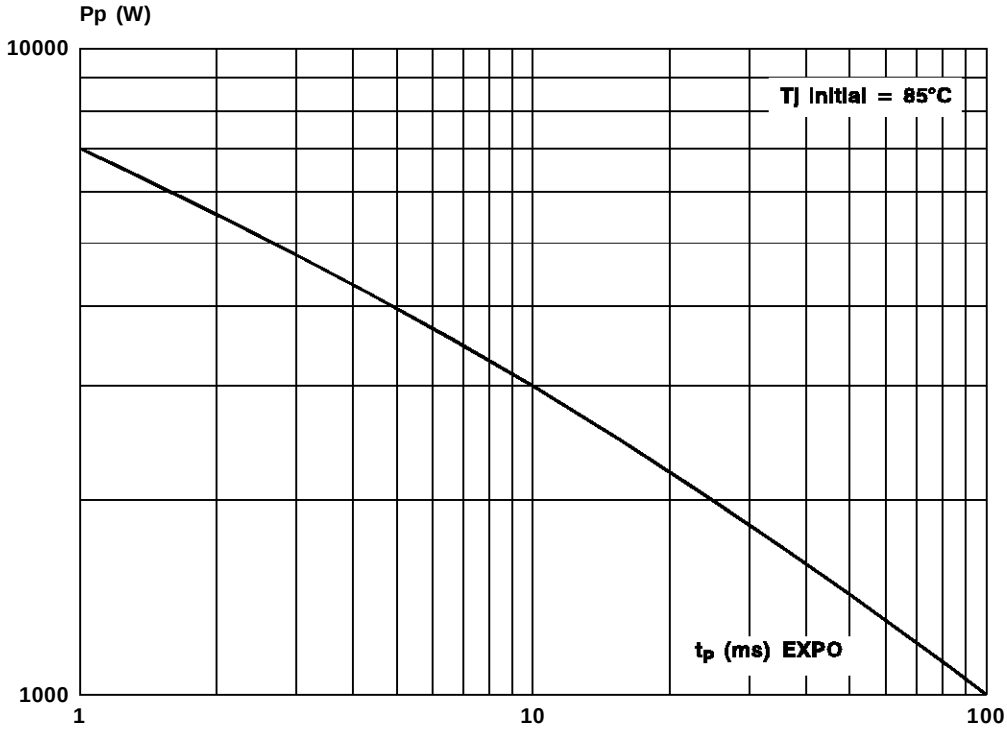


Figure 2 : Clamping voltage versus peak pulse current (T_j initial =85°C).
exponential waveform t = 40 ms ——————-
t = 1 ms _____

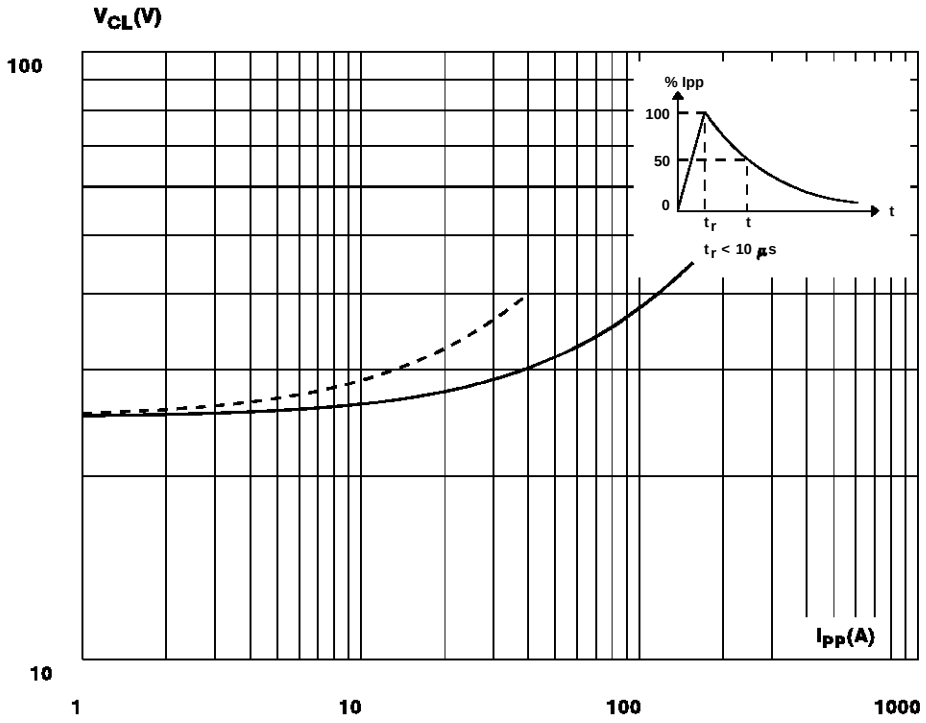


Figure 3 : Peak pulse current versus exponential pulse duration (T_j initial =85°C).

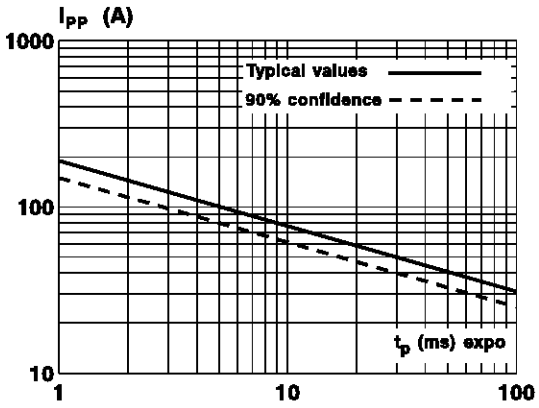


Figure 4 : Peak pulse power versus junction temperature.

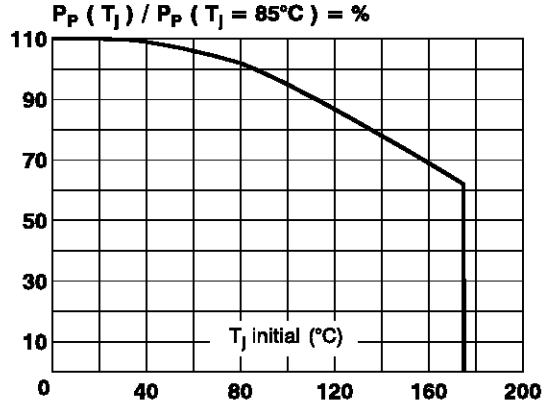


Figure 5 : Transient thermal impedance junction-ambient versus pulse duration (device mounted on PC Board with L_{lead} = 10mm).

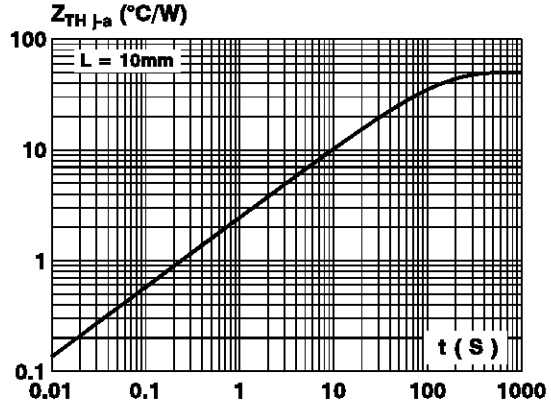
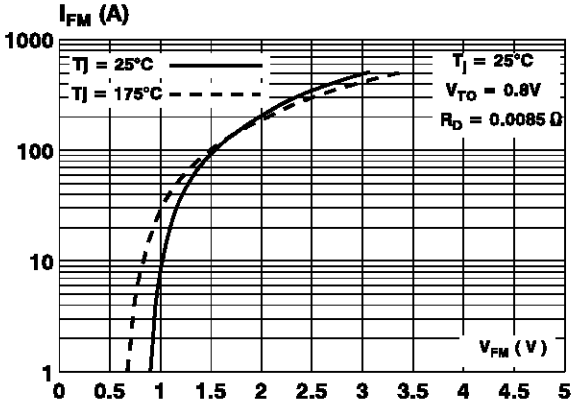
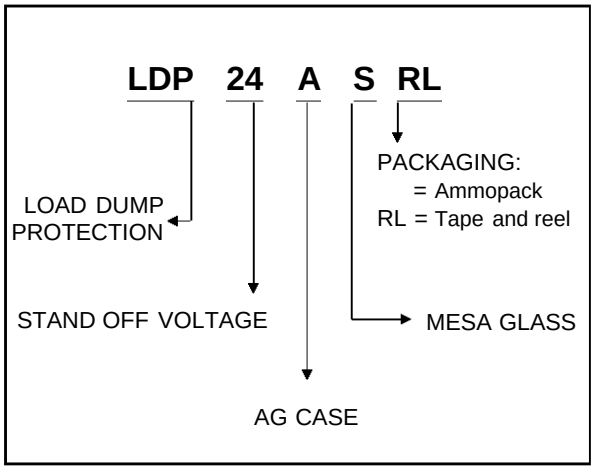


Figure 6 : Peak forward current versus peak forward voltage drop (typical values).



ORDER CODE



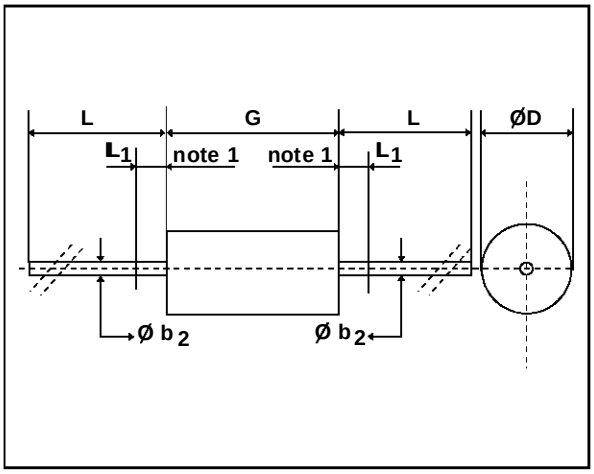
MARKING : Logo, Date Code, Type Code, Cathode Band.

Weight = 1 g.

Packaging : standard packaging is in tape and reel.

PACKAGE MECHANICAL DATA

AG (Plastic).



Ref	Millimeters		Inches	
	min	max	min	max
∅ b_2	1.35	1.45	0.053	0.057
∅ D	-	8	-	0.315
G	-	9	-	0.354
L	20	-	0.787.	-
L_1	-	1.27	-	0.050

Note1: The diameter ∅ b2 is not controlled over zone L1. Cooling method : by convection (method A).