

Application Specific Discretes A.S.D.™

FEATURES AND BENEFITS

- UNIDIRECTIONAL OVERVOLTAGE SUP-PRESSOR PROGRAMMABLE BY VOLTAGE AND CURRENT:
- PROGRAMMABLE BREAKDOWN VOLTAGE UP TO 100 V.
- PROGRAMMABLE CURRENT LIMITATION FROM 120 mA TO 600 mA.
- MULTI-LINE PROTECTION MODE : ONE DE-VICE CAN PROTECT SEVERAL LINES.
- HIGH SURGE CURRENT CAPABILITY : IPP = 100A for 10/1000 μs.

DESCRIPTION

Dedicated to the protection of sensitive telecom equipment, the LCP3121 provides protection which can be programmed by both voltage and current.

The breakdown voltage can be easily programmed by using an external zener diode.

The protection function programmed by the current is achieved with the use of a resistor between the gate and the cathode. The value of the resistor will determine the level of the desired current before the triggering of the device.

A multiple protection mode is also performed when using several diodes providing each time interface with an optimized protection level.

If desired, a bidirectional protection function can be achieved by the use of two LCP3121.

COMPLIES WITH TH. FOLLOWING STANDARDS :

ССІТТ К20 :	10/700μs 5/310μs	6kV 150A
VDE 0433 :	10/700μs 5/310μs	2kV 50A
\′D Ξ U878 :	1.2/50µs	1.5kV
FCC part 68 :	1/20μs 2/10μs	40A 2.5kV
BELLCORE	2/10µs	200A (*)
TR-NWT-001089 :	2/10μs 2/10μs	2.5kV 200A (*)
BELLCORE TR-NWT-000974 :	10/1000μs	1kV
	10/1000µs	100A
(*) with series resistors or PT	С.	

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OVERVOLTAGE AND OVERCURRENT PROTECTION FOR TELECOM LINE



PIN-OUT CONFIGURATION



FUNCTIONAL DIAGRAM



Symbol	Parameter	Value	Unit	
I _{PP}	Peak pulse current (see note 1)	10/1000µs	100	А
I _{TSM}	Non repetitive surge peak on-state current (F = 50 Hz)	16 8	A	
V _{AC} V _{GA}				V
T _{stg} Tj	Storage temperature range Maximum junction temperature	- 40 to + 150 150	°C	
ΤL	Maximum lead temperature for soldering during 1	0s	260	°C

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

Note 1 : Pulse waveform :

10/1000μs t_r=10μs

0μs t_p=1000μs



THERMAL RESISTANCE

Symbol		Parameter		Value	Unit
R _{th (j-a)}	Junction to ambient		005	170	°C/W

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

Symbol	Parameter			
V _{RM}	Stand-off voltage			
V _{BR}	Breakdown voltage			
V _{BO}	Breakover voltage			
Iн	Holding current			
I _{BO}	Breakover current			
I _{RM}	Leakage current at V _{RM}			
IR	Leakage current at V _R			
IPP	Peak pulse current			
VR	Continuous reverse voltage			
C _{off} Off-state capacitance				
V _G Gate voltage				
I _{GP} Gp triggering current				
I _{GN} Gn triggering current				



57

1 - OPERATION WITHOUT GATE (T_{amb} = 25 °C)

Sym- bol	Test conditions	Min.	Max.	Unit
I _{RM}	$V_{RM} = 60V$ $V_{RM} = 90V$		5 8	μA
I _R	at VR = 180V		50	μA
V _{BR}	at 1mA	100		V
I _{BO}		80	500	mA
V _{BO}	Measured at 50Hz		180	V
I _H	See the functional test circuit	100		mA

2 - OPERATION WITH GATE (T_{amb} = 25 °C)

Symbol	Test conditions	Min.	Max.	Unit
V _G (note1)	$I_{GATE} = 200 \text{mA}$ (for eigher Gn or Gp)	0.6	1.8	V
I _{GP}	V _{Anode-cathode} = 60V		180	mA
I _{GN}	V _{Anode-cathode} = 60V	80	200	mA
	02			
	VAnode-cathode = 60V VGN, measured between Gp and anode VGP, measured between Gp and anode			

57

FUNCTIONAL HOLDING CURRENT (IH) TEST CIRCUIT : GO-NO GO TEST







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APPLICATION EXAMPLES

Application 1: Common protection for SLIC without integrated ring generator



Application 3: Typical SLIC protection



Application 2: Common protection for SLIC with integrated ring generator







ORDER CODE



PACKAGE MECHANICAL DATA SO-8 Plastic



LCP3121

	DIMENSIONS						
REF.	Mi	llimetr	es		Inches		
	Min.	Тур.	Max.	Min.	Тур.	Max.	
Α			1.75			0.069	
a1	0.1		0.25	0.004	10	0.010	
a2			1.65		11.	0.065	
b	0.35		0.48	0.014	5	0.019	
b1	0.19		0.25	0.007		0.010	
С		0.50	N N		0.020		
c1			45°	(typ)			
D	4.8		5.0	0.189		0.197	
Е	5.8		6.2	0.228		0.244	
е	5	1.27			0.050		
e3		3.81			0.150		
F	3.8		4.0	0.15		0.157	
L	0.4		1.27	0.016		0.050	
М			0.6			0.024	
S	8° (max)						

Weight = 0.08 g

Packaging : Products supplied in anti-static tubes or tape and reel.

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CP3121

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6/6

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