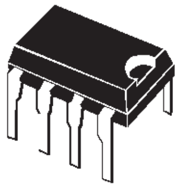
LS5018B
LS5060B/LS5120B

TRISIL™

FEATURES

- BIDIRECTIONAL CROWBAR PROTECTION.
- BREAKDOWN VOLTAGES RANGE: 18V, 60V and 120V.
- HOLDING CURRENT = 200mA min.
- HIGH SURGE CURRENT CAPABILITY I_{PP} = 100A 10/1000 µs

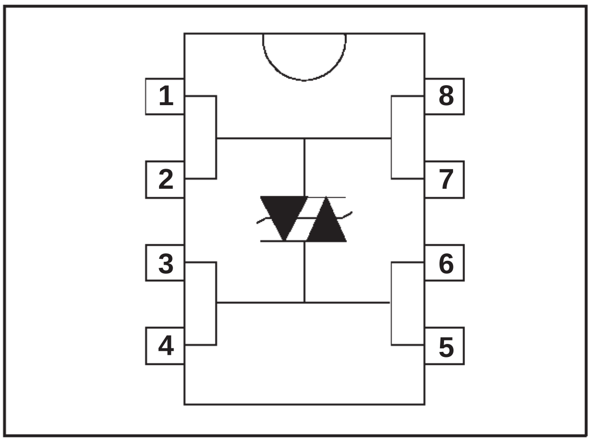


DIL8

DESCRIPTION

The LS50xxB series has been designed to protect telecommunication equipment against lightning and transients induced by AC power lines.
Its high surge current capability makes the LS50xxB a reliable protection device for very exposed equipment, or when series resistors are very low.

SCHEMATIC DIAGRAM



COMPLIES WITH THE FOLLOWING STANDARDS:

CCITT K17 - K20	10/700	µs	1.5 kV
	5/310	µs	38 A
VDE 0433	10/700	µs	2 kV
	5/200	µs	50 A
CNET	0.5/700	µs	1.5 kV
	0.2/310	µs	38 A

ABSOLUTE MAXIMUM RATINGS (T_{amb} =25°C)

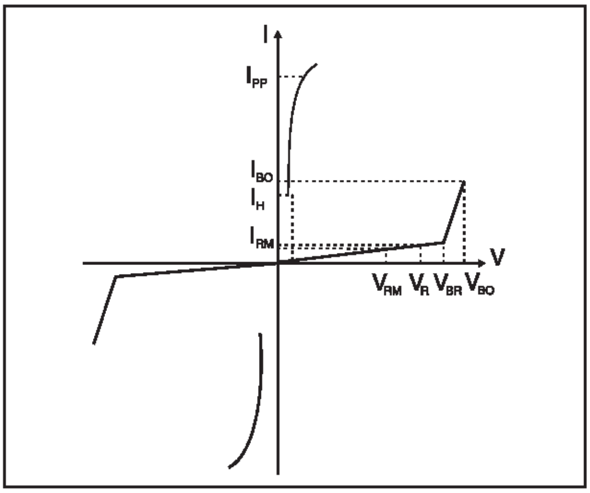
Symbol	Parameter		Value	Unit
I_{PP}	Peak pulse current	10/1000 µs 8/20 µs	100 250	A
I_{TSM}	Non repetitive surge peak on-state current	tp = 20 ms	50	A
dI/dt	Critical rate of rise of on-state current	Non repetitive	100	A/µs
dV/dt	Critical rate of rise of off-state voltage	V_{RM}	5	kV/µs
T_{stg} T_j	Storage and operating junction temperature range		- 40 to + 150 150	°C °C
T_L	Maximum lead temperature for soldering during 10s		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
R_{th} (j-a)	Junction to ambient on printed circuit with recommended pad layout	80	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} =25°C)

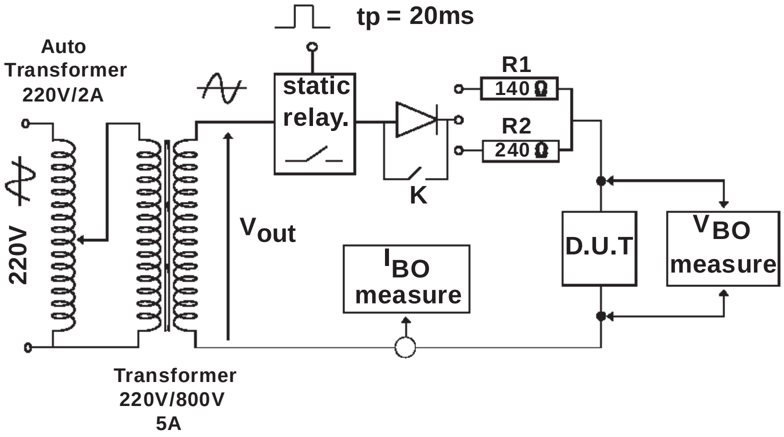
Symbol	Parameter
I_{RM}	Leakage current at stand-off voltage
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
V_{BO}	Breakover voltage
I_H	Holding current
I_{BO}	Breakover current
I_{PP}	Peak pulse current
C	Capacitance



Type	I_{RM} @ V_{RM} max.		V_{BR} @ I_R min.		V_{BO} max. note 1	@ I_{BO} typ.	I_H min. note 2	C max. note 3
	µA	V	V	mA	V	mA	mA	pF
LS5018B	5	16	17	1	22	1300	200	150
LS5060B	10	50	60	1	85	1000	200	150
LS5120B	20	100	120	1	180	1250	250	150

Note 1 : Measured at 50Hz (1 cycle)
Note 2 : See test circuit
Note 3 : V_R = 5 V, F = 1MHz.

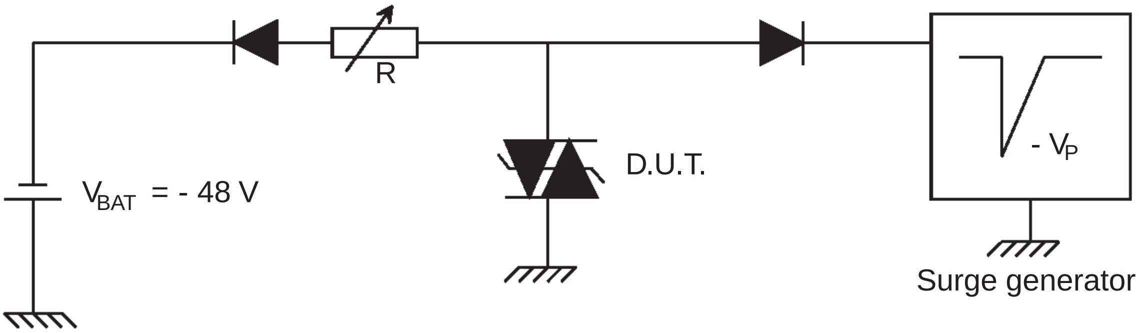
TEST CIRCUIT 1 FOR I_{BO} and V_{BO} parameters :



TEST PROCEDURE :

- Pulse Test duration (tp = 20ms):
  - For Bidirectional devices = Switch K is closed
  - For Unidirectional devices = Switch K is open.
- V_{OUT} Selection
  - Device with $V_{BO} < 200$ Volt
    - $V_{OUT} = 250\ V_{RMS}$, $R_1 = 140\ \Omega$.
  - Device with $V_{BO} \geq 200$ Volt
    - $V_{OUT} = 480\ V_{RMS}$, $R_2 = 240\ \Omega$.

TEST CIRCUIT 2 for I_H parameter.



This is a GO-NOGO Test which allows to confirm the holding current (I_H) level in a functional test circuit.

TEST PROCEDURE :

- 1) Adjust the current level at the I_H value by short circuiting the AK of the D.U.T.
  2) Fire the D.U.T with a surge Current : Ipp = 10A , 10/1000 µs.
  3) The D.U.T will come back off-state within 50 ms max.

Figure 1 : Non repetitive surge peak current versus overload duration

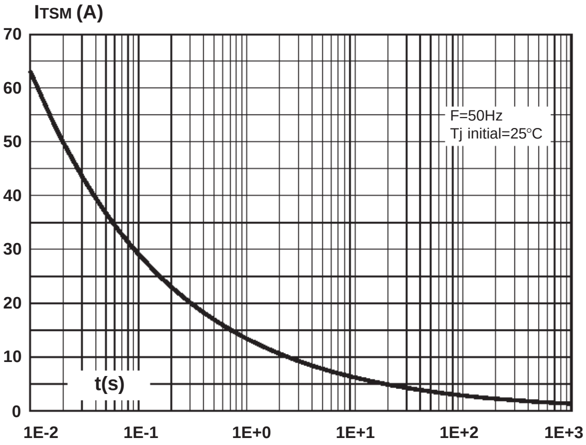


Figure 2 : Relative variation of holding current versus junction temperature.

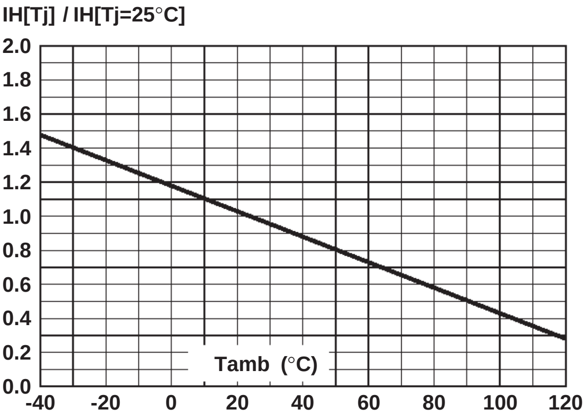


Figure 3 : Relative variation of breakdown voltage versus ambient temperature.

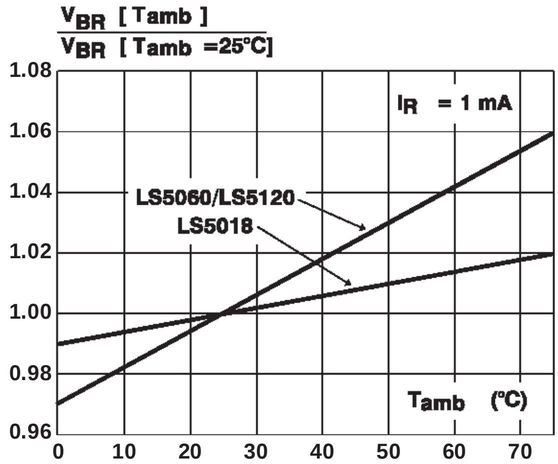
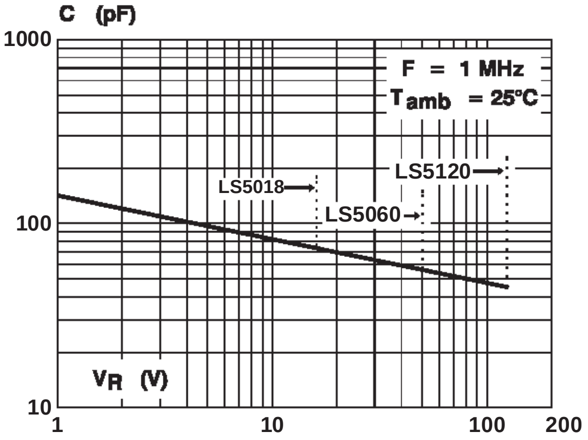
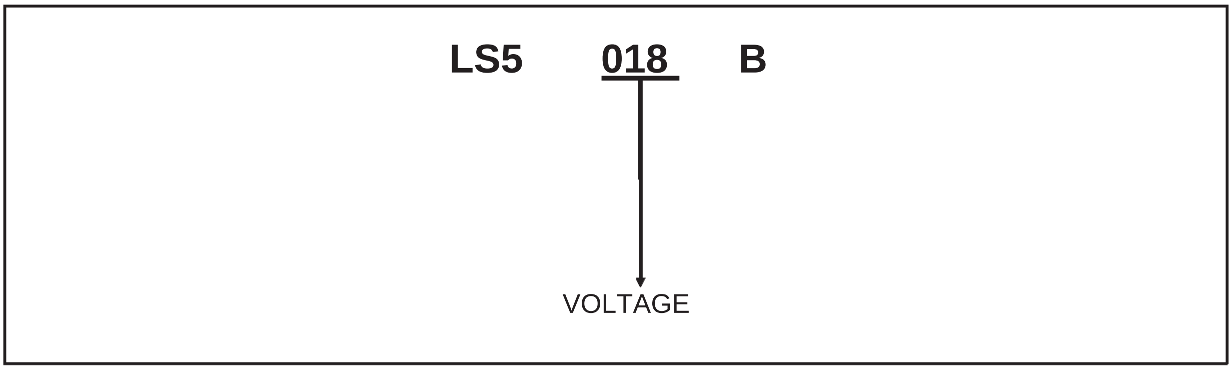


Figure 4 : Junction capacitance versus reverse applied voltage.



ORDER CODE

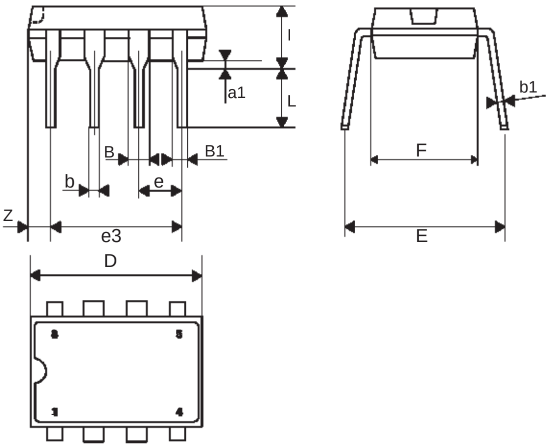


MARKING : Logo, Date Code,part Number.

Packaging : Products supplied in antistatic tubes.
weight : 0.59g

PACKAGE MECHANICAL DATA

DIL 8 Plastic



REF.	DIMENSIONS					
	Millimetres			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.70			0.027		
B	1.39		1.65	0.055		0.065
B1	0.91		1.04	0.036		0.041
b		0.5			0.020	
b1	0.38		0.50	0.015		0.020
D			9.80			0.385
E		8.8			0.346	
e		2.54			0.100	
e3		7.62			0.300	
F			7.1			0.280
I			4.8			0.189
L		3.3			0.130	
Z	0.44		1.60	0.017		0.063

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