



LS5018B LS5060B/LS5120B

TRISIL™

FEATURES

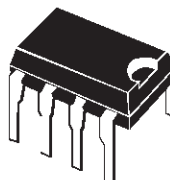
- BIDIRECTIONAL CROWBAR PROTECTION.
- BREAKDOWN VOLTAGES RANGE:
18V, 60V and 120V.
- HOLDING CURRENT = 200mA min.
- HIGH SURGE CURRENT CAPABILITY
 $I_{PP} = 100A$ 10/1000 μs

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.

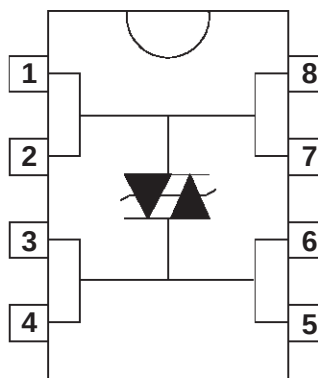
COMPLIES WITH THE FOLLOWING STANDARDS:

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



DIL8

SCHEMATIC DIAGRAM



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

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	$t_p = 20$ 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	$^{\circ}C$ $^{\circ}C$
T_L	Maximum lead temperature for soldering during 10s		230	$^{\circ}C$

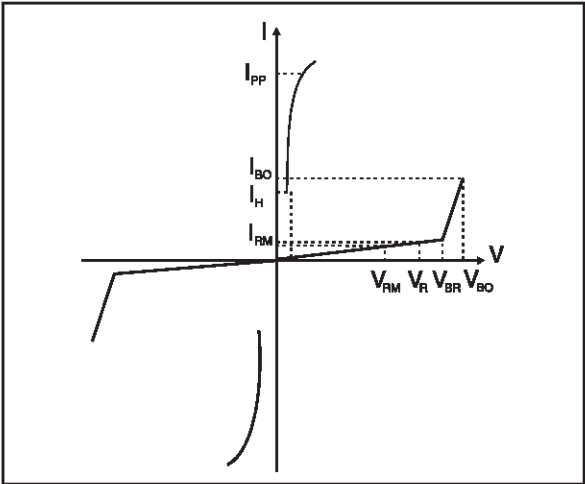
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THERMAL RESISTANCE

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

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

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

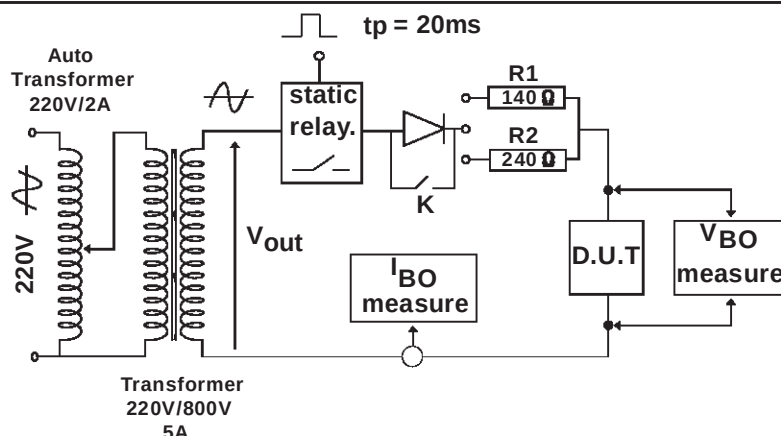


Type	$I_{RM} @ V_{RM}$ max.		$V_{BR} @ I_R$ min.		$V_{BO} @ I_{BO}$ max. typ. note 1		I_H min. note 2	C max. note 3
	μA	V	V	mA	V	mA	mA	pF
LS5018B	5	16	17	1	22	1300	200	150
LS5060B	10	50	60	1	85	1000	200	150
LS5120B	20	100	120	1	180	1250	250	150

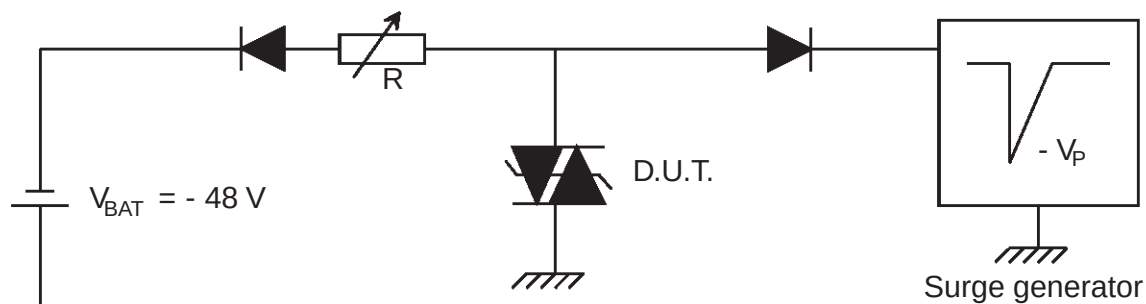
Note 1 : Measured at 50Hz (1 cycle)

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

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 : $I_{pp} = 10\text{A}$, $10/1000\ \mu\text{s}$.
- 3) The D.U.T will come back off-state within 50 ms max.

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Figure 1 : Non repetitive surge peak current versus overload duration

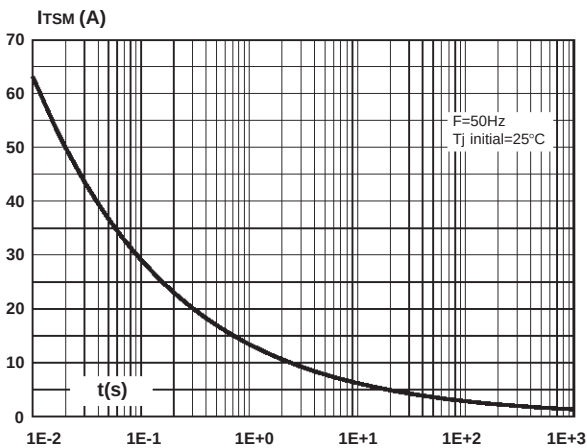


Figure 3 : Relative variation of breakdown voltage versus ambient temperature.

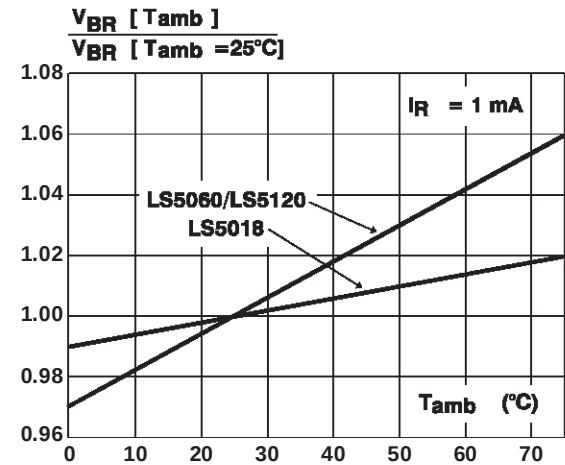


Figure 2 : Relative variation of holding current versus junction temperature.

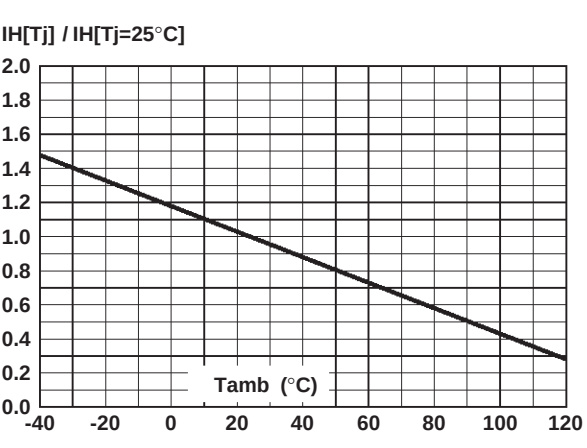
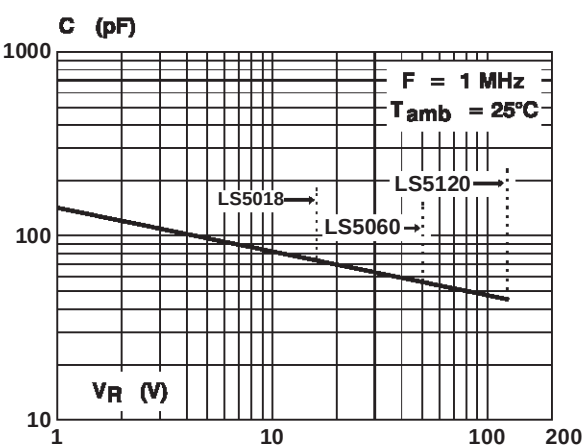
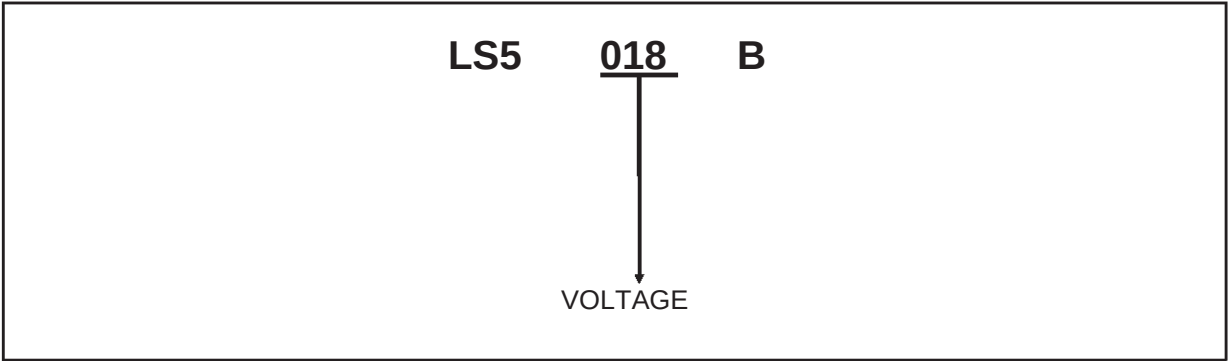


Figure 4 : Junction capacitance versus reverse applied voltage.



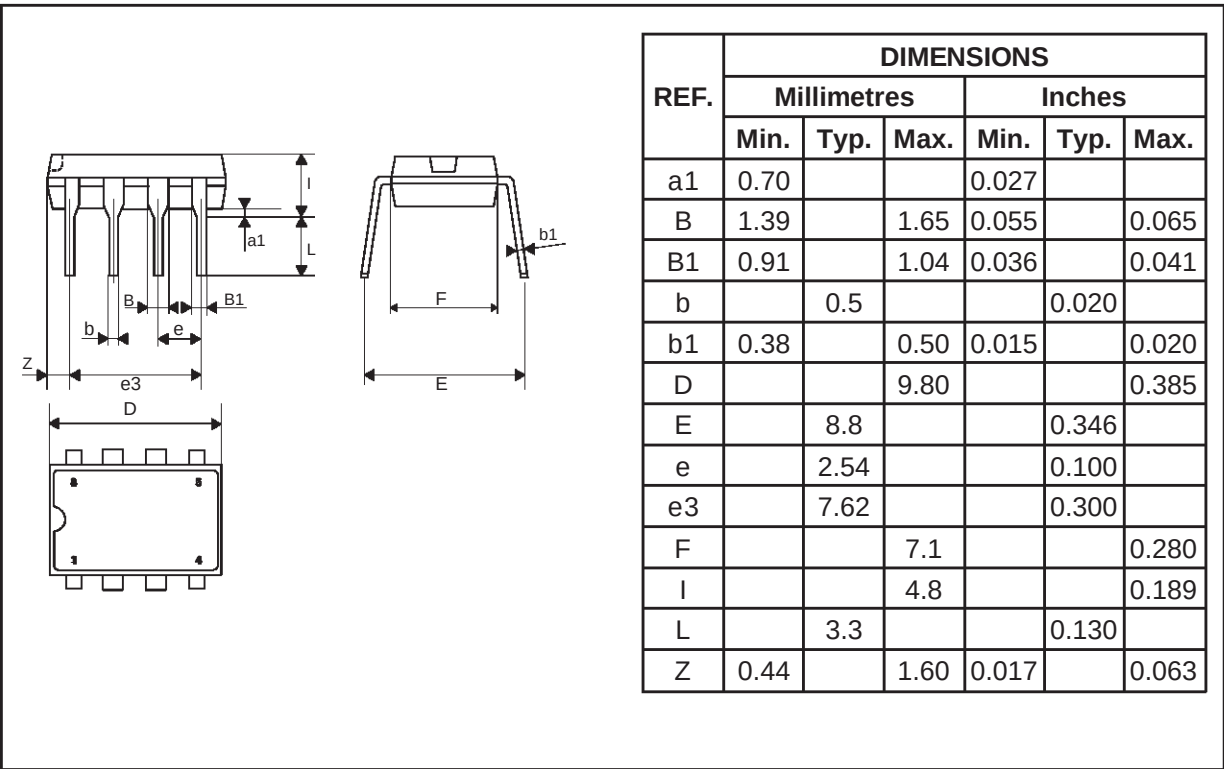
ORDER CODE



MARKING : Logo, Date Code,part Number.

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

PACKAGE MECHANICAL DATA
DIL 8 Plastic



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