SGS-THOMSON MICROELECTRONICS

ESDA25B1

Application Specific Discretes
A.S.D.™

ESD PROTECTION MONOLITHIC TRANSIL™ ARRAY

FEATURES

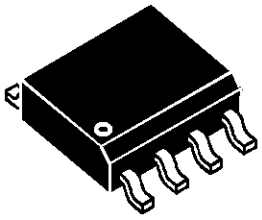
- UP TO 6 BIDIRECTIONAL TRANSIL FUNCTIONS
- MINIMUM BREAKDOWN VOLTAGE AND MAXIMUM DIFFERENTIAL VOLTAGE BETWEEN TWO INPUTS PINS : 25V
- VERY LOW CAPACITANCE : C= 20 pF @ V_{RM}

DESCRIPTION

Dedicated to "ESD" PROTECTION, this TRANSIL array protects against surges of up to 25kV.

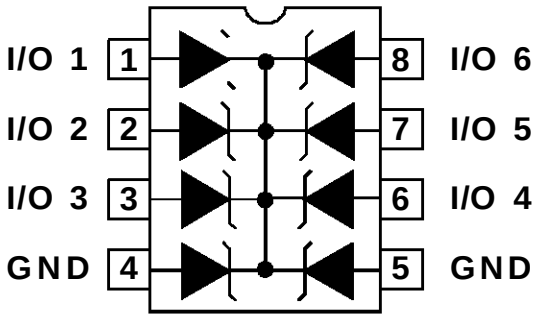
It is particularly recommended for RS232 I/O port protection where the line interface only withstand 2 kV ESD surges.

It clamps the voltage just above the 24V level supply for both positive and negative transients.



SO8
(Plastic)

FUNCTIONAL DIAGRAM



Equivalent to 6 bidirectional TRANSIL

COMPLIES WITH THE FOLLOWING STANDARDS :

- ESD standard :
  . IEC 801-2 15kV (air discharge)
  8kV (contact discharge)
  . IEC 801-4 40A (repetitive 2.5 kHz)

- VDE 0875 4kV 5 / 30ns (repetitive 10 Hz)

- MIL STD 883C - Method 3015-6

V_P = 25kV C = 100pF R = 1500Ω
3 positive strikes and 3 negative strikes (F = 1 Hz)

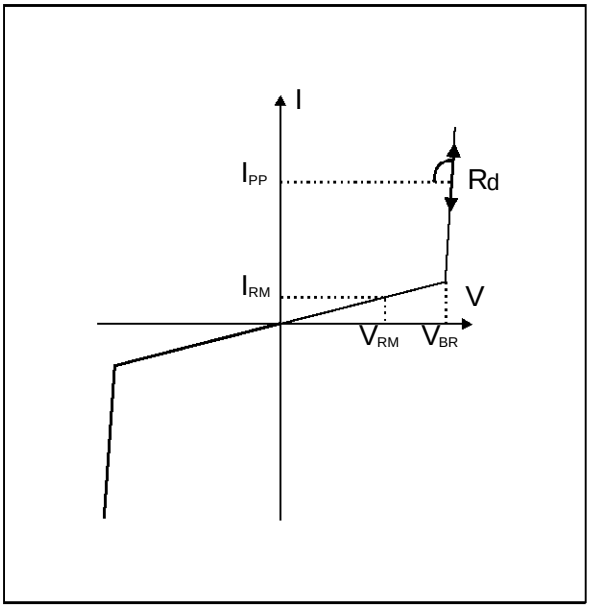
- Human body test :
V_P = 4kV C = 150pF R = 150Ω

ABSOLUTE MAXIMUM RATINGS ($0°C \le T_{amb} \le 70°C$)

Symbol	Parameter	Value	Unit
V_{PP}	Maximum electrostatic discharge MIL STD 883C - METHOD 3015-6	25	kV
T_{stg} T_j	Storage temperature range Maximum junction temperature	- 55 to + 150 125	°C °C

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

Symbol	Parameter
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
C	Capacitance
Rd	Dynamic impedance
I_{RM}	Leakage current
I_{PP}	Peak pulse current

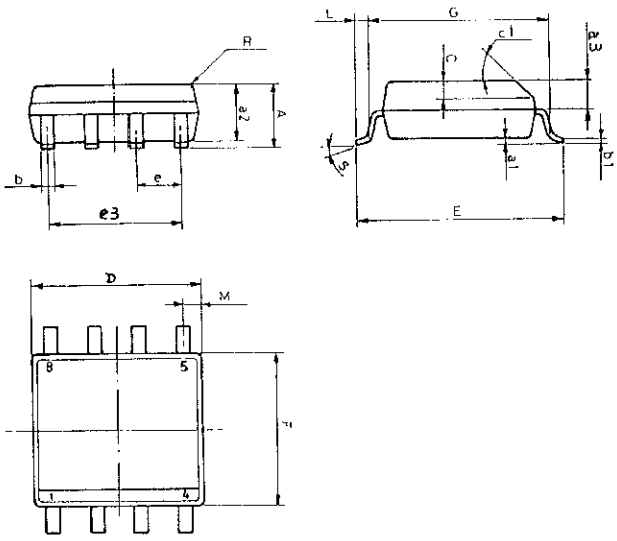


Type	I_{RM} @ V_{RM}		V_{BR} @ I_R			Rd	C 1	C 2	αT
	max.		note 1			typ. note 2	typ. note 3	typ. note 4	max. note 5
			min.	max.					
	µA	V	V	V	mA	Ω	pF	pF	10^{-4}/°C
ESDA25B1	2	24	25	30	1	1.5	15	9	9.7

Note 1 : Between any I/O pin and Ground
Note 2 : I_{PP} = 25 A, t_p = 2.5µs
Note 3 : Capacitance value between any two input pins at 0V bias
Note 4 : Capacitance value between any two input pins at V_{RM}
Note 5 : $\Delta V_{BR} = \alpha T * [T_{amb}-25] * V_{BR}(25°C)$

PACKAGE MECHANICAL DATA

SO8 Plastic



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
a3	0.65		0.85	0.026		0.033
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.020
c1	45° (typ)					
D	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		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
M			0.6			0.024
S	8° (max)					

Packaging : Products are supplied in antistatic tubes.

MARKING : Logo, Date Code, E25B1