

Small Signal Product

Bi-directional ESD Protection Diode

FEATURES

- Meet IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- Protects one Bi-directional I/O line
- Low clamping voltage
- Working Voltage : 5, 12 and 24V
- High component density
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



0603-B



MECHANICAL DATA

Case: 0603-B standard package molded plastic

Terminals: Gold plated, solderable per MIL-STD-750, method 2026

Weight: 3 mg (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)							
PARAMETER		CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Diode breakdown voltage	TESDUB5V0	IR=1mA	V _{BO}	5.1	7	-	V
	TESDUB12V			13	17	-	
	TESDUB24V			25	28	-	
Leakage current	TESDUB5V0	VR=5V	I _L	-	0.1	2	μA
	TESDUB12V	VR=12V		-	-	-	
	TESDUB24V	VR=24V		-	-	-	
Junction capacitance	TESDUB5V0	VR=0V, f=1MHz	C _T	-	15	20	pF
	TESDUB12V			-	12	-	
	TESDUB24V			-	10	-	
ESD capability		IEC 61000-4-2 (air) IEC 61000-4-2 (contact)	ESD	-	-	15	KV
				-	-	8	
Clamping voltage	TESDUB5V0	I _{PP} =5A, T _P =8/20μs	V _C	-	-	15	V
	TESDUB12V	I _{PP} =1A, T _P =8/20μs		-	-	25	
	TESDUB24V	I _{PP} =1A, T _P =8/20μs		-	-	47	
Peak pulse power	TESDUB5V0	T _P =8/20μs	P _{PP}	-	-	75	W
	TESDUB12V			-	-	25	
	TESDUB24V			-	-	47	
Junction temperature range			T _J	-55 to +125			°C
Storage temperature range			T _{STG}	-55 to +150			°C

Small Signal Product

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
TESDUBxxx (Note 1, 2)	RG	G	0603-B	4K / 7" Reel

Note 1: "xxx" defines voltage from 5V (TESDUB5V0) to 24V (TESDUB24V)

Note 2: Whole series with green compound

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TESDUB5V0 RGG	TESDUB5V0	RG	G	Green compound

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

Fig. 1 8/20μs Peak pulse current waveform
acc. IEC 61000-4-5

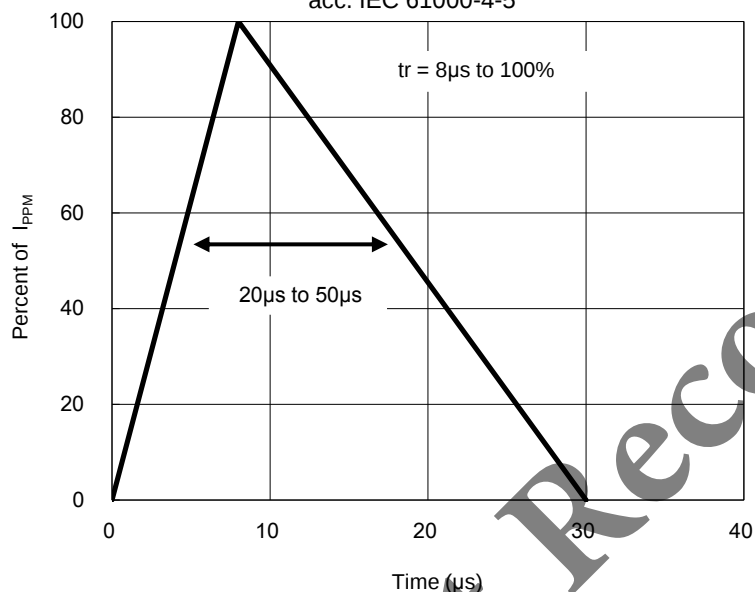


Fig. 2 Reverse characteristics

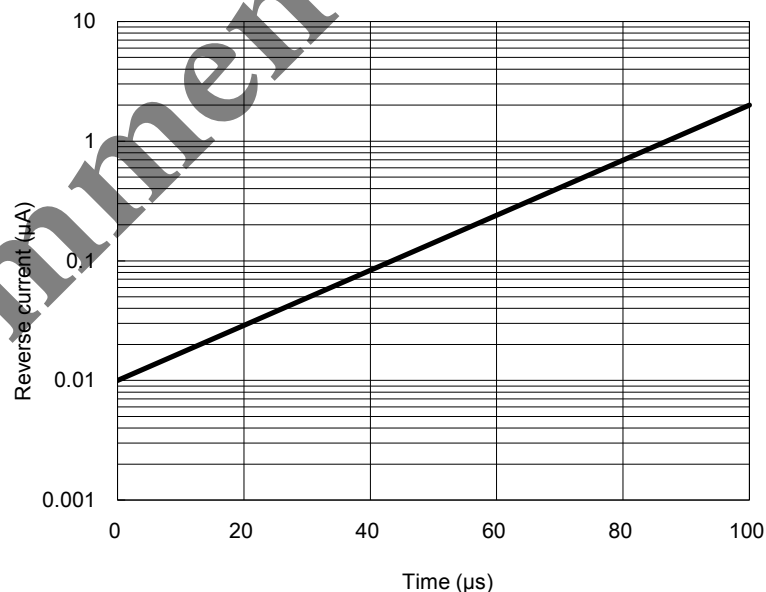


Fig. 3 Capacitance between terminals characteristics

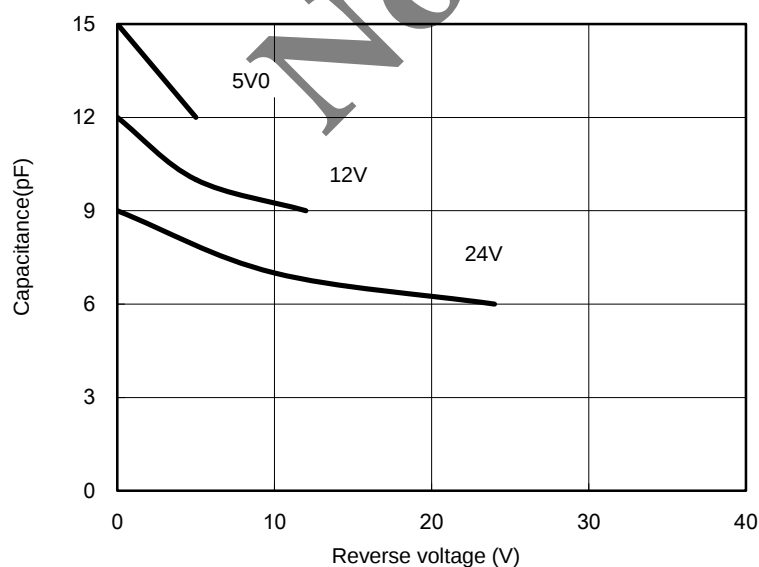
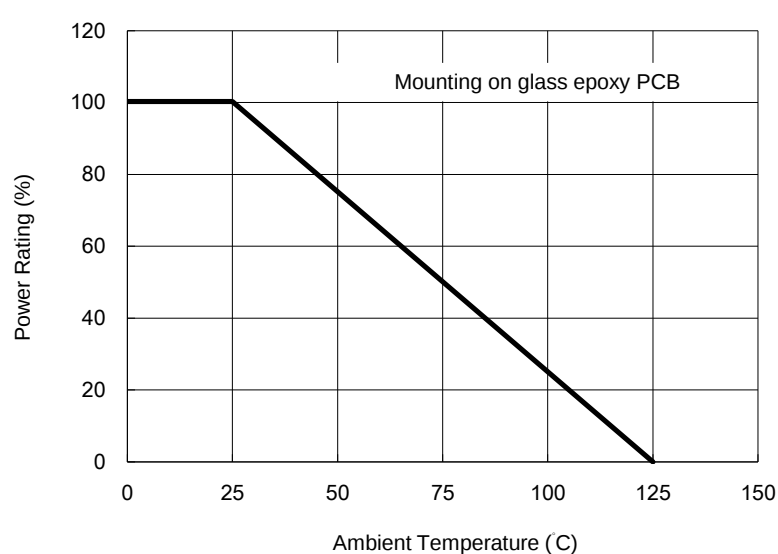


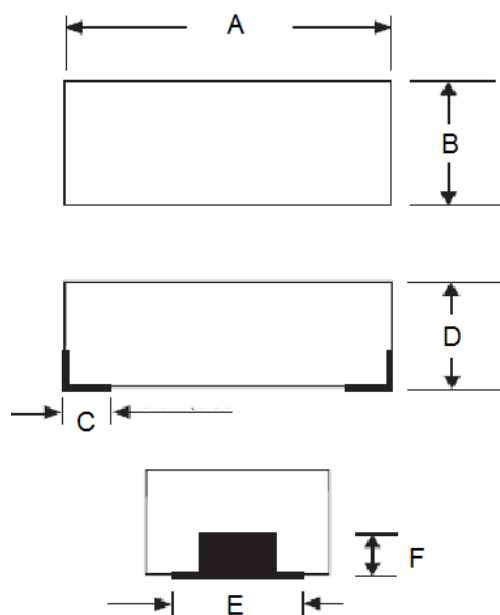
Fig.4 Power derating curve



Small Signal Product

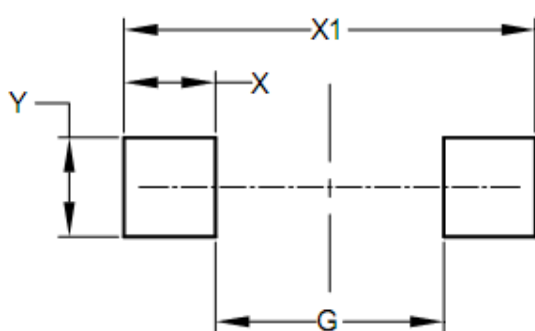
DIMENSIONS

0603-B



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.60	1.80	0.063	0.071
B	0.80	1.00	0.031	0.039
C	0.30	0.45	0.012	0.018
D	0.70	0.85	0.028	0.033
E	0.65	0.75	0.026	0.030
F	0.28	0.35	0.011	0.014

SUGGESTED PAD LAYOUT



DIM.	Unit (mm)
G	0.80
X	0.60
X1	2.00
Y	0.80

MARKING

Part No.	Marking
TESDUB5V0	E05
TESDUB12V	E12
TESDUB24V	E24

Small Signal Product

Not Recommended

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