

### Small Signal Product

#### Features

- Meet IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- Protects four Bi-directional I/O lines
- Low clamping voltage
- Working Voltage : 5, 12 and 24V
- High component density

#### Mechanical Data

**Case :** 0603-B standard package molded plastic

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

**Weight :** 0.003g (approximately)

#### 0603-B



#### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Parameter	Conditions	Symbol	Min	Typ	Max	Units	
Diode breakdown voltage	TESDUB5V0	$V_{BO}$	5.1	7	-	V	
	TESDUB12V		13	17	-		
	TESDUB24V		25	28	-		
Leakage current	TESDUB5V0	$I_L$	-	0.1	2	$\mu\text{A}$	
	TESDUB12V		VR=12V				
	TESDUB24V		VR=24V				
Junction capacitance	TESDUB5V0	$C_T$	-	15	20	pF	
	TESDUB12V		VR=0V, f=1MHz		12		-
	TESDUB24V				10		-
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD			15 8	KV	
Clamping voltage	TESDUB5V0	$V_C$	-	-	15	V	
	TESDUB12V		$I_{PP}=1\text{A}, T_P=8/20\mu\text{s}$				25
	TESDUB24V		$I_{PP}=1\text{A}, T_P=8/20\mu\text{s}$				47
Peak pulse power	TESDUB5V0	$P_{PP}$	-	-	75	W	
	TESDUB12V		$T_P=8/20\mu\text{s}$				25
	TESDUB24V						47
Junction temperature range		$T_J$	-55 to + 125			°C	
Storage temperature range		$T_{STG}$	-55 to + 150			°C	

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Rating and Characteristics Curves

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

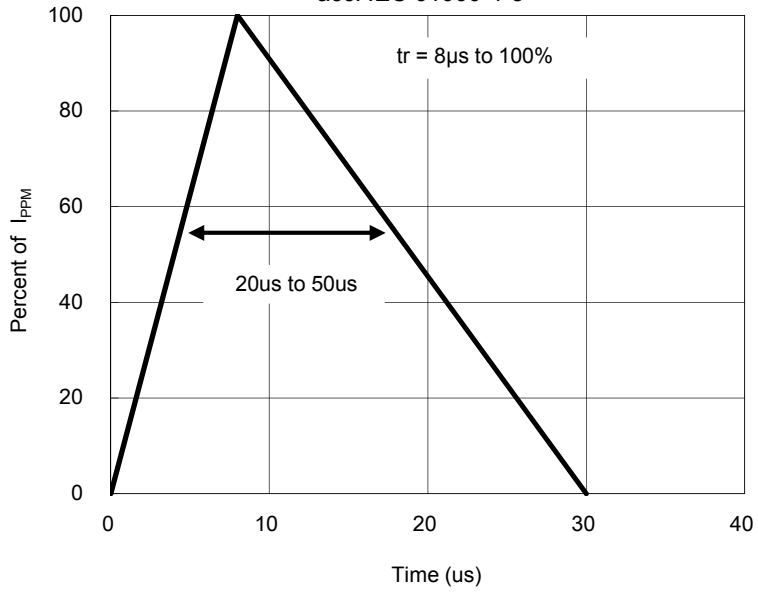


Fig. 2 Reverse characteristics

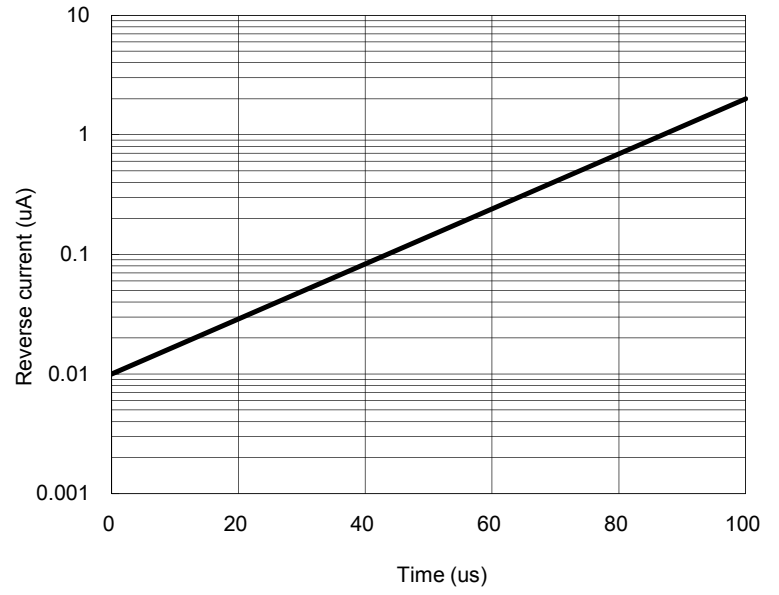


Fig. 3 Capacitance between terminals

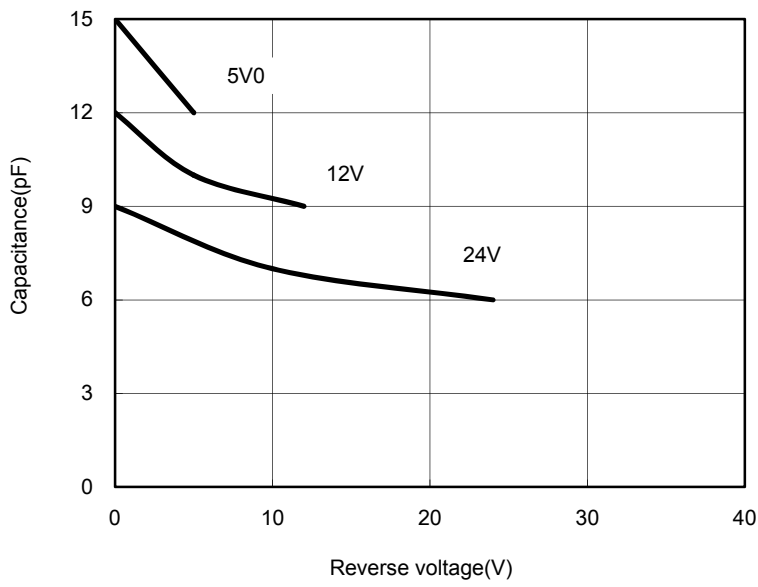
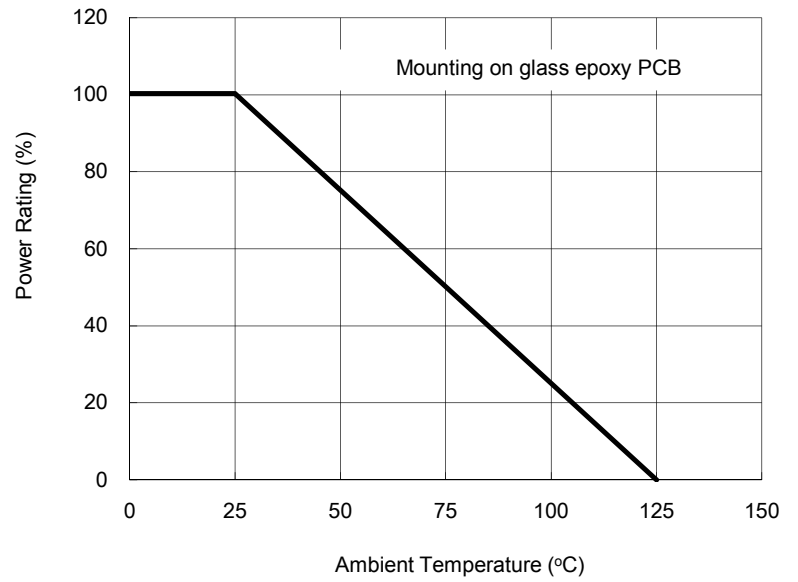


Fig.4 Power derating curve



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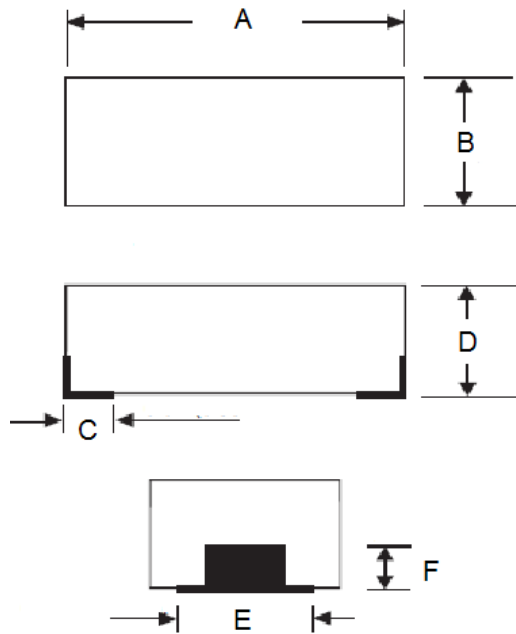
### Ordering information (example)

Part No.	Package	Packing	Packing code	Packing code (Green)	Manufacture code
TESDUBXX (Note1)	0603-B	4K/Reel	R4	R4G	(Note)
TESDUB5V0	0603-B	4K/Reel	R4	R4G	
TESDUB5V0	0603-B	4K/Reel	R4	R4G	F0

Note 1 : "xxx" is Device Code from "5V0" to "24V".

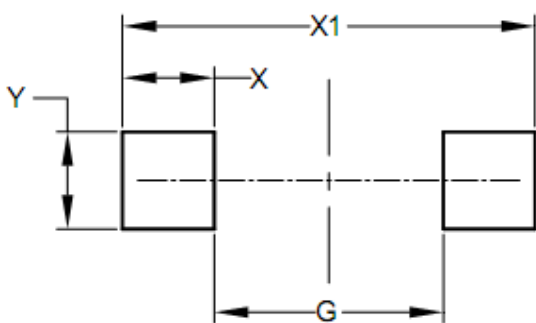
Note 2 : Manufacture special control, if empty means no special control requirement.

### Dimensions



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	0.35 Typ.		0.014 Typ.	
D	0.70	0.85	0.028	0.033
E	0.70 Typ.		0.028 Typ.	
F	0.30 Typ.		0.012 Typ.	

### 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