

**FEATURES:**

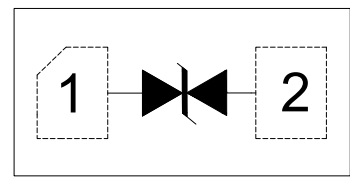
- ✧ Small body outline dimensions: 0.6mm×0.3mm
- ✧ Low clamping voltage
- ✧ Low operating voltage: 5.0V
- ✧ Low capacitance
- ✧ RoHS compliant



DFN0603-2L(Bottom view)

**MAIN APPLICATIONS**

- ✧ Cell phone handsets and accessories
- ✧ Personal digital assistants (PDA's)
- ✧ Notebooks, desktops, and servers
- ✧ Portable instrumentation
- ✧ Communication systems
- ✧ Microprocessor based equipment



Pin Configuration(Top view)

**PROTECTION SOLUTION TO MEET**

- ✧ IEC61000-4-2 (ESD) ±20kV (air), ±20kV (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5(Lightning) 4.5A (8/20μs)

**MECHANICAL CHARACTERISTICS**

- ✧ DFN0603-2L package
- ✧ Molding compound flammability rating : UL 94V-0
- ✧ Quantity per reel: 10,000pcs
- ✧ Lead finish: lead free

**ORDERING INFORMATION**

PART No.	PACKAGE TYPE	QUANTITY(PCS) REEL	DESCRIPTION
TESDB05UCDS-A	DFN0603-2L	10,000	7 inch reel pack

**ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^{\circ}\text{C}$ , RH=45%-75%, unless otherwise noted)

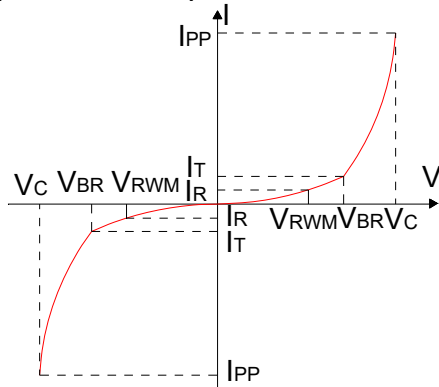
Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 $\mu\text{s}$ waveform	$P_{PP}$	100	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	+/- 20 +/- 20	kV
Lead soldering temperature	$T_L$	260 (10 sec.)	$^{\circ}\text{C}$
Operating junction temperature range	$T_J$	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to +150	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS** ( $T_A=25^{\circ}\text{C}$ )

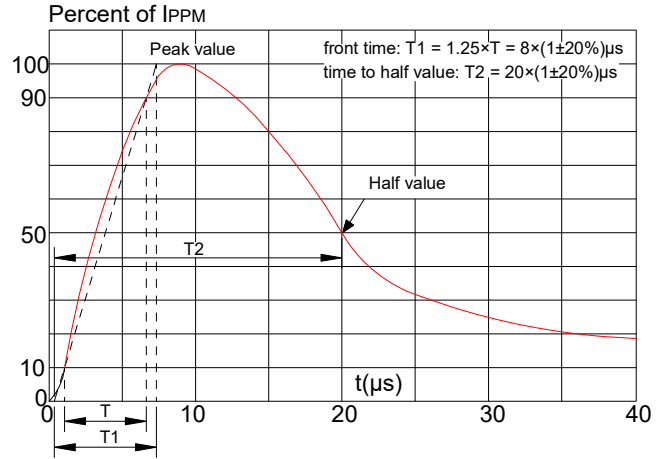
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse working voltage	$V_{RWM}$				5.0	V
Reverse breakdown voltage	$V_{BR}$	$I_T=1\text{mA}$	6.0		10.0	V
Reverse leakage current	$I_R$	$V_{RWM}=5\text{V}$			1	$\mu\text{A}$
Peak pulse current	$I_{PP}$	$t_P=8/20\mu\text{s}$			4.5	A
Clamping voltage	$V_C$	$I_{PP}=1\text{A}$ , $t_P=8/20\mu\text{s}$		12	15	V
		$I_{PP}=4.5\text{A}$ , $t_P=8/20\mu\text{s}$		20	23	V
Junction capacitance	$C_J$	$V_{RWM}=0\text{V}$ , $f=1\text{MHz}$		0.3	0.5	pF

#### RATINGS AND V-I CHARACTERISTICS CURVES ( $T_A=25^\circ\text{C}$ , unless otherwise noted)

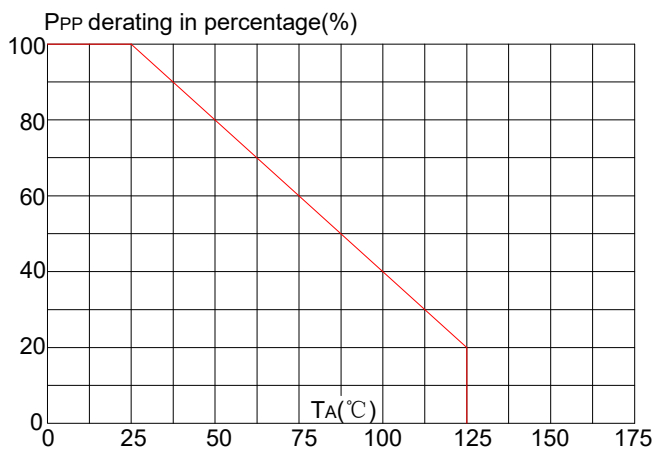
**FIG.1: V- I curve characteristics (Bi-directional)**



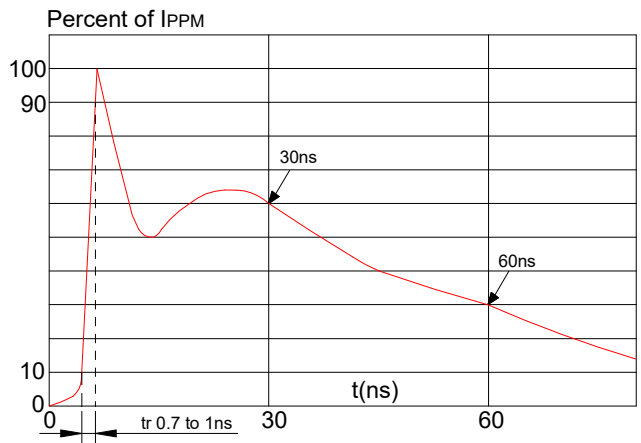
**FIG.2: Pulse waveform (8/20 $\mu\text{s}$ )**



**FIG.3: Pulse derating curve**

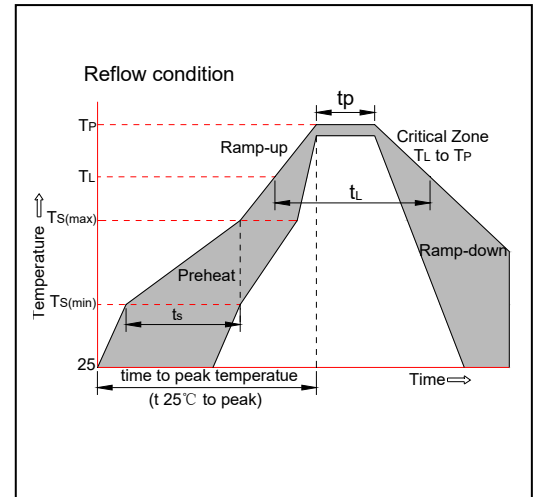


**FIG.4: ESD clamping (20kV contact)**

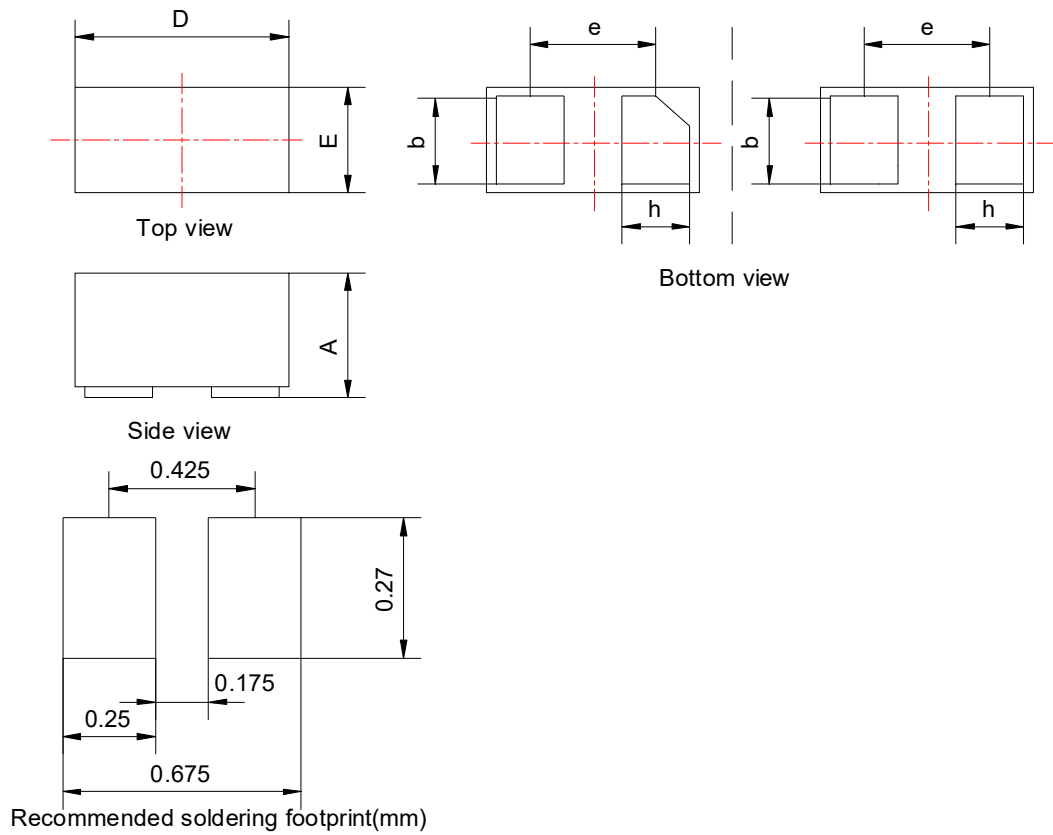


#### SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) ( $t_s$ )	60-180 secs.
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquidus)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C



#### PACKAGE MECHANICAL DATA



Symbol	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.25	0.30	0.34	0.010	0.012	0.013
D	0.55	0.60	0.65	0.022	0.024	0.026
E	0.25	0.30	0.35	0.010	0.012	0.014
b	0.2	0.23	0.3	0.008	0.009	0.012
e	0.4			0.016		
h	0.13	0.17	0.24	0.005	0.007	0.009